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Research Topic

Fluoride

Research Subtopics

Hydrofluorosilicic acid (HFS)
Sodium Fluoride

This Smart Search PDF was created based on **1** research topic. There are a total of **454** unique research articles on GreenMedInfo.com in regard to your search topic, all compiled in this research document.

The GMI-Pub system automates the natural medical research retrieval process by creating an individualized document that matches your search requirements in order to fit the needs of real people, in real time.

Our technology pulls from the equivalent of 20,454+ years of scientific experimental labor and pulls results based on variables the user decides are relevant.

Below you will find compelling research hard-referenced to peer-reviewed biomedical research sourced from the US National Library of Medicine. For more research on over 6000 validated topics, please visit http://GreenMedInfo.com/research-dashboard

Overview of Terms Associated with Your Search Topic

134 Relevant Results for Diseases

Disease/Symptom	Cumulative Knowledge	Article Count
Fluoride Toxicity	1310	340
Intelligence Quotient (IQ): Low/Impaired	252	22

Fluorosis	228	37
Prenatal Chemical Exposures	116	27
Oxidative Stress	95	55
Childhood Cognitive Disorders	80	6
Cognitive Decline/Dysfunction	76	9
Infertility: Female	66	12
Inflammation	65	21
Dental Caries	62	7
Infertility: Male	59	22
Chemically-Induced Liver Damage	52	24
Hypothyroidism	47	6
Kidney Damage: Chemically-Induced	43	19
Testicular Injury: Chemical/Metal Induced	33	17
DNA damage	25	15
Arsenic Poisoning	23	6
Ectopic Calcification	22	3
Neurodegenerative Diseases	22	13
Sperm Quality: Low	22	12
Gingivitis	21	3
Bone Fractures	20	2
Hypertension	17	4
Mitochondrial Dysfunction	16	10
Arterial Calcification	13	3
Lead Poisoning	13	3
Lipid Peroxidation	13	7
Aluminum Toxicity	12	6
Coronary Artery Ecstasia	10	1
Brain Inflammation	7	4
Chronic Kidney Disease (CKD)	6	3
Dysbiosis	6	3
Brain: Oxidative Stress	5	3
Autism Spectrum Disorders	3	3
Cardiovascular Diseases	3	2
Fetal Origin of Adult Disease	3	2
Low Testosterone	3	2
Brain: Microglial Activation	2	2
Cardiomyopathy	2	1

Female Reproductive Development Abnormalities	2	1
Heart Failure	2	1
Aging	1	1
Fractures: Bone	1	1
Kidney Damage	1	1
Muscle Damage	1	1
Learning disorders	106	18
Prenatal Nutrition: Learning/Intelligence of Offspring	44	4
Thyroid Dysfunction	41	3
Childhood Chemical Exposures	40	4
Neurodevelopmental Disorders	33	5
Dental Plaque	30	3
Diabetes Mellitus: Type 2	22	2
Attention Deficit Disorder with Hyperactivity	21	3
Goiter: Exophthalmic	21	1
Memory Disorders	21	11
Osteoarthritis: Knee	20	2
Pancreatic Diseases	20	1
Sleep Disorders	20	2
Spleen Damage: Chemically Induced	18	9
Bone Diseases	13	3
Developmental Disorder: Children	12	2
Diabetes: Cognitive Dysfunction	12	1
Pineal Gland Calcification	12	2
Dental Caries: Children	11	2
Iodine Deficiency	11	2
Abortion: Spontaneous	10	1
Attention Deficit Hyperactivity Disorder	10	1
C-Reactive Protein	10	1
Children: Impaired Growth	10	1
Metabolic Diseases	10	1
Multiple Myeloma	10	1
Osteoarthritis	10	1
Periodontitis	10	1
Pineal Gland Diseases	10	1
Stroke	10	1
TSH: Elevated	10	1

Vascular Calcification	10	1
Ovarian Diseases	5	3
Anxiety	4	2
Depression	4	2
Heavy Metal Toxicity	3	2
Hip Dysplasia: Congenital	3	1
Air Pollution Linked Toxicity	2	1
Atheroma	2	1
Atherosclerosis	2	1
Autoimmune Diseases	2	1
Azoospermic	2	1
Birth Defects	2	1
Blood-Brain-Barrier Disorders	2	1
Bone Marrow Suppression	2	1
Brain Injury: Hippocampal Damage	2	1
Breastfeeding Concerns: Chemical Exposure	2	1
Colitis	2	1
Degenerative Joint Disease	2	1
Dementia	2	1
Diabetic Complications	2	1
Drug-Induced Nutrient Depletion: Riboflavin (B-2)	2	1
Dyslipidemias	2	1
Estrogen Deficiency	2	1
Gastrointestinal Inflammation	2	1
Hormone Insufficency	2	1
Huntington Disease	2	1
Hypercalcemia	2	1
Hyperglycemia	2	1
Hyperlipidemia	2	1
Infertility	2	1
Iron Overload	2	1
Low Immune Function: Chemically-Induced	2	1
Lung Damage	2	1
Male Reproductive Development Abnormalities	2	1
Mineral Deficiencies	2	1
Muscle Atrophy	2	1
Obesity	2	1

Obsessive-Compulsive Disorder	2	1
Orchitis	2	1
Schizophrenia	2	1
Sperm Count: Low	2	1
Testicular Injury: Fluoride-Induced	2	1
Thyroid Diseases	2	1
Tourette Syndrome	2	1
Uterine Diseases	2	1
Vitamin A Deficiency	2	1
Alzheimer's Disease	1	1
Autism	1	1
Endothelial Dysfunction	1	1
Enterococcus Infections	1	1
Hair Loss	1	1
Hair Quality Problems	1	1
Microplastic Toxicity	1	1
Mitochondrial Diseases	1	1
Neurotoxicity	1	1
Osteosarcoma	1	1
Porphyromonas gingivalis	1	1
Steptococcus Mutans Infections	1	1

36 Relevant Results for Adverse Pharmacological Actions

Adverse Pharmacological Action Name	Cumulative Knowledge	Article Count
Neurotoxic	278	68
Apoptotic	62	29
Anti-Fertility	50	12
Cardiotoxic	38	18
Inflammatory	26	10
Hepatotoxic	24	9
Renotoxic	15	4
Oxidant	12	9
Teratogenic	8	4
Endocrine Disruptor	6	3
Nephrotoxic	5	3
Hypertensive	4	2
Interleukin-6 up-regulation	3	2

Embryotoxic	2	1
Endocrine Disruptor: Thyroid	2	1
Immunotoxic	20	6
Abortive	10	1
Gastrotoxic	10	5
Hypermethylation	10	1
Genotoxic	4	3
Acetylcholinesterase inhibitor (xenobiotic)	2	1
Cytotoxic	2	2
Diabetogenic	2	1
Dysbiotic	2	1
Immunoreactive	2	1
Immunosuppressive	2	1
Interleukin-8 up-regulation	2	1
MCP-1 (CCL2) up-regulation	2	1
Neurotransmitter Interference	2	1
P-selectin upregulation	2	1
Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation	2	1
Atherogenic	1	1
Endocrine Disruptor: Testes	1	1
Excitotoxic	1	1
Interleukin-1 up-regulation	1	1
Tumor necrosis factorα (TNFα) up-regulation	1	1

27 Relevant Results for Problem Substances

Problem Substance Name	Cumulative Knowledge	Article Count
Sodium Fluoride	1446	393
Fluoride	366	92
Arsenic	65	15
Infant Formula	42	5
Aluminum	17	10
Lead	15	4
Sugary soda	10	1
Cadmium	4	2
Hydrofluorosilicic acid (HFS)	3	2
Chlorhexidine gluconate	10	1
Iodine: Excess	10	1

Photoresist and developed solvents (PDS)	10	1
Public Drinking Water	10	1
Sugar	10	1
Antibiotics	3	1
Sugar Sweetened Beverages	3	3
Aluminum Chloride	2	1
Bisphenol A	2	1
Diclofenac	2	1
Rotenone	2	1
Sodium Selenate	2	1
Sodium Selenite	2	1
Endocrine Disruptors	1	1
Mercury	1	1
Nano Plastic-and Micro-Particles	1	1
Polystyrene nanoparticles	1	1
Sodium lauryl sulfate	1	1

36 Relevant Results for Keywords

Keyword Name	Cumulative Knowledge	Article Count
Synergistic Toxicity	52	18
Increased Risk	51	9
Water Fluoridation	34	5
Dose Response	29	6
Risk Factors	22	9
Gene Expression	9	3
Public Drinking Water	1	1
Superiority of Natural Substances versus Drugs	22	4
Causes Of Decreased Birth Rates	20	1
Genomic Variation	20	2
Fluoride In The Water	12	2
Epigenetic Modification	11	2
Breast Feeding	10	1
Fluoridated Food Supplement	10	1
Maternal Dietary Patterns	10	1
Mouthwash	10	1
Natural Substances Versus Chemicals	10	1
Natural Substances Versus Drugs	10	1

Toxic Substance Synergy	10	1
Plant Extracts	6	4
Gene Expression Regulation	4	2
Natural Substance Synergy	4	2
Antioxidant	2	1
Bottled Water	2	2
Drug Synergy	2	1
Embryonic Development	2	1
Groundwater Contamination	2	1
Gut-brain Axis	2	1
Methylation Downregulation	2	1
Multi-Generational Effects	2	1
Prenatal Epigenetic Programming	2	1
Proanthocyanidins	2	1
Supplementation	2	1
Transgenerational Epigenetic Modification	2	1
Heavy Metals and Autism	1	1
Vaccine Research	1	1

72 Relevant Results for Substances

Substance Name	Cumulative Knowledge	Article Count
Green Tea	31	4
Melatonin	10	5
Alpha-Lipoic Acid	6	3
Citrus naringin	6	3
Curcumin	6	3
Royal Jelly	6	3
Selenium	6	5
Vitamin E	5	3
Moringa oleifera	4	2
Neem	4	2
Caffeic Acid	2	1
Coffee	2	1
Prunella vulgaris	2	1
Black Tea	1	1
Emodin	1	1
Calcium	18	5

Vitamin C	13	3
Vitamin D	13	3
Iodine	10	1
Sodium Bicarbonate	10	1
Water	10	1
Hesperidin	9	5
Quercetin	9	4
Rutin	7	3
Ginkgo biloba	6	3
Spirulina	6	3
Grape Seed Extract	5	3
Lycopene	5	3
Banaba	4	2
Ginseng	4	2
Luteolin	4	2
Apigenin	3	1
Coconut Oil	3	1
Ellagic Acid	3	1
Ferulic acid	3	1
Polyphenols	3	1
Acacia arabica	2	1
Aloe Vera	2	1
Amla Fruit	2	1
Arjuna	2	1
Betaine	2	1
Bifidobacterium	2	1
Blackberry	2	1
Charcoal	2	1
Corn: Purple	2	1
Cysteine (see N-Acetylcysteine)	2	1
Fisetin	2	1
Folic Acid	2	1
Gastrodin	2	1
Ginger	2	1
Honokiol	2	1
Ipriflavone	2	1
Lactobacillus probiotics	2	1

NAC (N-acetyl-L-cysteine)	2	1
Nigella sativa (aka Black Seed)	2	1
Pomegranate	2	1
Probiotics	2	1
Resveratrol	2	1
Riboflavin (Vitamin B-2)	2	1
Rooibos	2	1
Sesamin	2	1
Star Fruit	2	1
Tamarind	2	1
Taurine	2	1
Tea	2	1
Terminalia	2	1
Thymoquinone	2	1
Wormwood	2	1
Astaxanthin	1	1
Cocoa	1	1
EGCG (Epigallocatechin gallate)	1	1
Persimmon	1	1

36 Relevant Results for Pharmacological Actions

Pharmacological Action Name	Cumulative Knowledge	Article Count
Antioxidants	88	42
Anti-Inflammatory Agents	33	12
Hepatoprotective	31	16
Neuroprotective Agents	30	16
Renoprotective	30	15
Nrf2 activation	13	7
Apoptotic	10	7
Cardioprotective	8	4
Hypoglycemic Agents	4	2
Anti-Apoptotic	35	21
Anti-Bacterial Agents	20	2
Tumor Necrosis Factor (TNF) Alpha Inhibitor	17	8
Cytoprotective	10	5
Detoxifier	10	1
Superoxide Dismutase Up-regulation	8	4

Genoprotective	5	4
Interleukin-1 beta downregulation	5	2
Antihypertensive Agents	4	2
Cyclooxygenase 2 Inhibitors	4	2
Gastrointestinal Agents	4	2
Gastroprotective	4	2
Heme oxygenase-1 up-regulation	4	2
Hypolipidemic	4	2
Malondialdehyde Down-regulation	4	2
NF-kappaB Inhibitor	4	2
Antimicrobial	2	2
Bcl-2 protein down-regulation	2	1
Fertility Agents: Male	2	1
Glutathione Upregulation	2	1
Interleukin-17 downregulation	2	1
Osteogenic	2	1
Osteoprotective	2	1
Prophylactic Agents	2	1
Tumor Suppressor Protein p53 Upregulation	2	1
Antimutagenic Agents	1	1
DNA Repair Up-regulation	1	1

1 Relevant Result for Problematic Actions

Problematic Action Name	Cumulative Knowledge	Article Count
Vaccination: All	1	1

2 Relevant Results for Therapeutic Actions

Therapeutic Action Name	Cumulative Knowledge	Article Count
Exercise	6	3
Exercise: Running	2	1

View the Evidence.
454 Research Articles in Total.

Category : Diseases

Abortion: Spontaneous (AC 1) (CK 10)

An increased risk of spontaneous abortion among fabrication workers has been linked to fluoride compound and photoresist and developed solvents (PDS) exposure.

Pubmed Data : Am J Ind Med. 1995 Dec ;28(6):751-69. PMID: **8588562**

Article Published Date : Dec 01, 1995

Authors : S H Swan, J J Beaumont, S K Hammond, J VonBehren, R S Green, M F Hallock, S R Woskie, C J Hines, M B Schenker

Study Type : Human Study
Additional Links
Diseases : Abortion: Spontaneous : CK(325) : AC(42), Infertility: Female : CK(741) : AC(180)
Problem Substances : Fluoride : CK(1815) : AC(454), Photoresist and developed solvents (PDS) : CK(10) : AC(1)
Adverse Pharmacological Actions : Abortive : CK(57) : AC(9), Anti-Fertility : CK(112) : AC(21)

Aging (AC 1) (CK 1)

Fluorine is a factor in premature aging, and related adverse health effects.

Pubmed Data : Ann Acad Med Stetin. 2004 ;50 Suppl 1:9-13. PMID: **16892576**

Article Published Date : Jan 01, 2004

Authors : Anna Machoy-Mokrzyńska

Study Type : Review
Additional Links
Diseases : Aging : CK(5992) : AC(1444), Arterial Calcification : CK(268) : AC(45)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Air Pollution Linked Toxicity (AC 1) (CK 2)

Combination of fluoride and SO2 induce DNA damage and morphological alterations in male rat kidney.

Pubmed Data : Cell Physiol Biochem. 2018 ;50(2):734-744. Epub 2018 Oct 11. PMID: **30308495**

Article Published Date : Dec 31, 2017

Authors : Yan Gao, Chen Liang, Jianhai Zhang, Junjie Ma, Jinming Wang, Ruiyan Niu, Chiranjeevi Tikka, Yewei Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Air Pollution Linked Toxicity : CK(4951) : AC(731), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Aluminum Toxicity (AC 6) (CK 12)

Administration of resveratrol along with aluminum + fluoride showed significant reversal of oxidative stress and neuronal damage.

Pubmed Data : Interdiscip Toxicol. 2016 Jun ;9(2):78-82. Epub 2017 May 17. PMID: **28652849**

Article Published Date : May 31, 2016

Authors : Chandra Shakar Reddy Nalagoni, Pratap Reddy Karnati

Study Type : Animal Study
Additional Links
Substances : Resveratrol : CK(3081) : AC(1505)
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Aluminium, fluoride and a combination of aluminium-fluoride treatments caused an increase in brain lipid peroxidation products and reactive oxygen species formation.

Pubmed Data : Pathophysiology. 2015 Mar ;22(1):39-48. Epub 2014 Dec 13. PMID: **25577494**

Article Published Date : Feb 28, 2015

Authors : Ibukun Dorcas Akinrinade, Adejoke Elizabeth Memudu, Olalekan Michael Ogundele, Olanrewaju Ibrahim Ajetunmobi

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Increased Risk : CK(8492) : AC(1109), Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Aluminum appears to enhance the neurotoxic hazards caused by fluoride.

Pubmed Data : Drug Chem Toxicol. 2009 ;32(3):215-21. PMID: **19538017**

Article Published Date : Dec 31, 2008

Authors : Tanzeer Kaur, Rakesh K Bijarnia, Bimla Nehru

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Hesperidin/chitosan nanogel mitigates apoptosis and endoplasmic reticulum stress in fluoride and aluminum-induced testicular injury.

Pubmed Data : Biol Trace Elem Res. 2023 Dec 13. Epub 2023 Dec 13. PMID: **38087036**

Article Published Date : Dec 12, 2023

Authors : Nora S Deiab, Ahmad S Kodous, Mohamed K Mahfouz, Alshaimaa M Said, Mohamed Mohamady Ghobashy, Omayma A R Abozaid

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Aluminum Toxicity : CK(685) : AC(308), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Role of Spirulina in mitigating hemato-toxicity in Swiss albino mice exposed to aluminum and aluminum fluoride.

Pubmed Data : Environ Sci Pollut Res Int. 2016 Dec ;23(24):25280-25287. Epub 2016 Sep 29. PMID: **27687764**

Article Published Date : Nov 30, 2016

Authors : Shweta Sharma, K P Sharma, Subhasini Sharma

Study Type : Animal Study
Additional Links
Substances : Spirulina : CK(1017) : AC(292)
Diseases : Aluminum Toxicity : CK(685) : AC(308), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Cytoprotective : CK(797) : AC(393)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Synergistic oxidative impact of aluminum chloride and sodium fluoride exposure during early stages of brain development.

Pubmed Data : Environ Sci Pollut Res Int. 2019 Feb 20. Epub 2019 Feb 20. PMID: **30788699**

Article Published Date : Feb 19, 2019

Authors : Amal A Kinawy

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum Chloride : CK(171) : AC(92), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Alzheimer's Disease (AC 1) (CK 1)

Potential role of fluoride in the etiopathogenesis of Alzheimer's disease.

Pubmed Data : Int J Mol Sci. 2018 Dec 9 ;19(12). Epub 2018 Dec 9. PMID: **30544885**

Article Published Date : Dec 08, 2018

Authors : Marta Goschorska, Irena Baranowska-Bosiacka, Izabela Gutowska, Emilia Metryka, Marta Skórka-Majewicz, Dariusz Chlubek

Study Type : Review
Additional Links
Diseases : Alzheimer's Disease : CK(4948) : AC(2148), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Anxiety (AC 2) (CK 4)

Exercise ameliorates fluoride-induced anxiety- and depression-like behavior in mice.

Pubmed Data : Biol Trace Elem Res. 2022 Feb ;200(2):678-688. Epub 2021 Apr 6. PMID: **33825162**

Article Published Date : Jan 31, 2022

Authors : Qiqi Cao, Jixiang Wang, Yanru Hao, Fangye Zhao, Rong Fu, Yanghuan Yu, Jundong Wang, Ruiyan Niu, Shengtai Bian, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Anxiety : CK(4195) : AC(743), Depression : CK(8817) : AC(1715), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride stimulates anxiety and depression-like behaviors.

Pubmed Data : J Agric Food Chem. 2021 Nov 17 ;69(45):13618-13627. Epub 2021 Nov 4. PMID: **34735150**

Article Published Date : Nov 16, 2021

Authors : Guoyu Zhou, Yue Hu, Anqi Wang, Meng Guo, Yuhui Du, Yongxiang Gong, Limin Ding, Zichen Feng, Xiangbo Hou, Kaihong Xu, Fangfang Yu, Zhiyuan Li, Yue Ba

Study Type : Animal Study
Additional Links
Diseases : Anxiety : CK(4195) : AC(743), Depression : CK(8817) : AC(1715), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Arsenic Poisoning (AC 6) (CK 23)

Arsenic and fluoride co-exposure affects the expression of apoptotic and inflammatory genes and proteins in mononuclear cells from children.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2014 Feb ;761:27-34. Epub 2014 Jan 21. PMID: **24456662**

Article Published Date : Jan 31, 2014

Authors : B L Estrada-Capetillo, M D Ortiz-Pérez, M Salgado-Bustamante, E Calderón-Aranda, C J Rodríguez-Pinal, E Reynaga-Hernández, N E Corral-Fernández, R González-Amaro, D P Portales-Pérez

Study Type : Human In Vitro, Human Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Arsenic-fluoride co-exposure induced endoplasmic reticulum stress resulting in apoptosis in rat heart and H9c2 cells.

Pubmed Data : Chemosphere. 2022 Feb ;288(Pt 2):132518. Epub 2021 Oct 9. PMID: **34637859**

Article Published Date : Jan 31, 2022

Authors : Meng Li, Jing Feng, Ying Cheng, Nisha Dong, Xiaolin Tian, Penghui Liu, Yannan Zhao, Yulan Qiu, Fengjie Tian, Yi Lyu, Qian Zhao, Cailing Wei, Meng Wang, Jiyu Yuan, Xiaodong Ying, Xuefeng Ren, Xiaoyan Yan

Study Type : In Vitro Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209)

Co-exposure to arsenic-fluoride results in endoplasmic reticulum stress-induced apoptosis through the PERK signaling pathway in the liver of offspring rats.

Pubmed Data : Biol Trace Elem Res. 2020 Sep ;197(1):192-201. Epub 2019 Nov 25. PMID: **31768761**

Article Published Date : Aug 31, 2020

Authors : Nisha Dong, Jing Feng, Jiaxin Xie, Xiaolin Tian, Meng Li, Penghui Liu, Yannan Zhao, Cailing Wei, Yi Gao, Ben Li, Yulan Qiu, Xiaoyan Yan

Study Type : Animal Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Combined effects of fluoride and arsenic on mitochondrial function in the liver.

Pubmed Data : Appl Biochem Biotechnol. 2023 Mar 22. Epub 2023 Mar 22. PMID: **36947368**

Article Published Date : Mar 21, 2023

Authors : Huma Khan, Yeshvandra Verma, S V S Rana

Study Type : Animal Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Fisetin attenuates arsenic and fluoride subacute co-exposure induced neurotoxicity.

Pubmed Data : Neurotoxicology. 2023 Jul ;97:133-149. Epub 2023 Jun 16. PMID: **37331635**

Article Published Date : Jun 30, 2023

Authors : Vitthal V Gopnar, Debarati Rakshit, Mounisha Bandakinda, Uttam Kulhari, Bidya Dhar Sahu, Awanish Mishra

Study Type : Animal Study
Additional Links
Substances : Fisetin : CK(441) : AC(275)
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Synergistic effects of arsenic and fluoride on oxidative stress and apoptotic pathway in Leydig and Sertoli cells.

Pubmed Data : Toxicology. 2022 Jun 15 ;475:153241. Epub 2022 Jun 14. PMID: **35714946**

Article Published Date : Jun 14, 2022

Authors : Yasemin Aydin, Banu Orta-Yilmaz

Study Type : In Vitro Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Arterial Calcification (AC 3) (CK 13)

Effect of water fluoridation on the development of medial vascular calcification in uremic rats.

Pubmed Data : Toxicology. 2014 Apr 6 ;318:40-50. Epub 2014 Feb 18. PMID: **24561004**

Article Published Date : Apr 06, 2014

Authors : Ana Martín-Pardillos, Cecilia Sosa, Ángel Millán, Víctor Sorribas

Study Type : Animal Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Atheroma : CK(17) : AC(5), Atherosclerosis : CK(1964) : AC(771), Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Fluorine is a factor in premature aging, and related adverse health effects.

Pubmed Data : Ann Acad Med Stetin. 2004 ;50 Suppl 1:9-13. PMID: **16892576**

Article Published Date : Jan 01, 2004

Authors : Anna Machoy-Mokrzyńska

Study Type : Review
Additional Links
Diseases : Aging : CK(5992) : AC(1444), Arterial Calcification : CK(268) : AC(45)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

There is an association of vascular fluoride uptake with vascular calcification and coronary artery disease.

Pubmed Data : Nucl Med Commun. 2012 Jan ;33(1):14-20. PMID: **21946616**

Article Published Date : Jan 01, 2012

Authors : Yuxin Li, Gholam R Berenji, Wisam F Shaba, Bashir Tafti, Ella Yevdayev, Simin Dadparvar

Study Type : Human Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Ectopic Calcification : CK(1125) : AC(185), Vascular Calcification : CK(443) : AC(82)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Atheroma (AC 1) (CK 2)

Effect of water fluoridation on the development of medial vascular calcification in uremic rats.

Pubmed Data : Toxicology. 2014 Apr 6 ;318:40-50. Epub 2014 Feb 18. PMID: **24561004**

Article Published Date : Apr 06, 2014

Authors : Ana Martín-Pardillos, Cecilia Sosa, Ángel Millán, Víctor Sorribas

Study Type : Animal Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Atheroma : CK(17) : AC(5), Atherosclerosis : CK(1964) : AC(771), Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Atherosclerosis (AC 1) (CK 2)

Effect of water fluoridation on the development of medial vascular calcification in uremic rats.

Pubmed Data : Toxicology. 2014 Apr 6 ;318:40-50. Epub 2014 Feb 18. PMID: **24561004**

Article Published Date : Apr 06, 2014

Authors : Ana Martín-Pardillos, Cecilia Sosa, Ángel Millán, Víctor Sorribas

Study Type : Animal Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Atheroma : CK(17) : AC(5), Atherosclerosis : CK(1964) : AC(771), Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Attention Deficit Disorder with Hyperactivity (AC 3) (CK 21)

Early exposure to fluoride may have neurotoxic effects on neurodevelopment affecting behavioral, cognitive and psychosomatic symptoms related to ADHD diagnosis.

Pubmed Data : Medicina (Kaunas). 2023 Apr 19 ;59(4). Epub 2023 Apr 19. PMID: **37109754**

Article Published Date : Apr 18, 2023

Authors : Gianluca Fiore, Federica Veneri, Rosaria Di Lorenzo, Luigi Generali, Marco Vinceti, Tommaso Filippini

Study Type : Review
Additional Links
Diseases : Attention Deficit Disorder with Hyperactivity : CK(633) : AC(84), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to higher levels of fluoride in tap water is associated with an increased risk of ADHD symptoms and diagnosis of ADHD.

Pubmed Data : Environ Int. 2019 Dec ;133(Pt B):105190. Epub 2019 Oct 22. PMID: **31654913**

Article Published Date : Nov 30, 2019

Authors : Julia K Riddell, Ashley J Malin, David Flora, Hugh McCague, Christine Till

Study Type : Human Study
Additional Links
Diseases : Attention Deficit Disorder with Hyperactivity : CK(633) : AC(84), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prenatal fluoride exposure and attention deficit hyperactivity disorder (ADHD) symptoms in children.

Pubmed Data : Environ Int. 2018 Dec ;121(Pt 1):658-666. Epub 2018 Oct 10. PMID: **30316181**

Article Published Date : Nov 30, 2018

Authors : Morteza Bashash, Maelle Marchand, Howard Hu, Christine Till, E Angeles Martinez-Mier, Brisa N Sanchez, Niladri Basu, Karen E Peterson, Rivka Green, Lourdes Schnaas, Adriana Mercado-García, Mauricio Hernández-Avila, Martha María Téllez-Rojo

Study Type : Human Study
Additional Links
Diseases : Attention Deficit Disorder with Hyperactivity : CK(633) : AC(84), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Attention Deficit Hyperactivity Disorder (AC 1) (CK 10)

This study has empirically demonstrated an association between more widespread exposure to fluoridated water and increased ADHD prevalence in U.S. children and adolescents.

Pubmed Data : Environ Health. 2015 ;14(1):17. Epub 2015 Feb 27. PMID: **25890329**

Article Published Date : Dec 31, 2014

Authors : Ashley J Malin, Christine Till

Study Type : Human Study
Additional Links
Diseases : Attention Deficit Hyperactivity Disorder : CK(535) : AC(67)
Additional Keywords : Toxic Substance Synergy : CK(29) : AC(7)
Problem Substances : Lead : CK(684) : AC(227), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Autism (AC 1) (CK 1)

This study suggests that excitotoxicity may be the central mechanism of autism spectrum disorders and that excitotoxins like aluminum, fluoride, and mercury may exacerbate excitotoxicity.

Pubmed Data : Curr Med Chem. 2009 ;16(2):157-70. PMID: **19149568**

Article Published Date : Jan 01, 2009

Authors : R L Blaylock, A Strunecka

Study Type : Review
Additional Links
Diseases : Autism : CK(942) : AC(162), Autism Spectrum Disorders : CK(3676) : AC(557), Brain: Microglial Activation : CK(192) : AC(114), Heavy Metal Toxicity : CK(2713) : AC(1019)
Additional Keywords : Heavy Metals and Autism : CK(89) : AC(15), Vaccine Research : CK(571) : AC(113)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Mercury : CK(885) : AC(213)
Adverse Pharmacological Actions : Excitotoxic : CK(40) : AC(10), Neurotoxic : CK(2838) : AC(702)

Autism Spectrum Disorders (AC 3) (CK 3)

Chronic fluoride exposure and the risk of autism spectrum disorder.

Pubmed Data : Int J Environ Res Public Health. 2019 Sep 16 ;16(18). Epub 2019 Sep 16. PMID: **31527457**

Article Published Date : Sep 15, 2019

Authors : Anna Strunecka, Otakar Strunecky

Study Type : Review
Additional Links
Diseases : Autism Spectrum Disorders : CK(3676) : AC(557), Neurodegenerative Diseases : CK(12159) : AC(4162)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Sequential systemic immune activation by immunological agents like vaccines can activate the brain immune system, leading to immunoexcitotoxicity which is exacerbated by fluoride and aluminum.

Pubmed Data : Surg Neurol Int. 2018 ;9:74. Epub 2018 Apr 9. PMID: **29721353**

Article Published Date : Jan 01, 2018

Authors : Anna Strunecka, Russell L Blaylock, Jiri Patocka, Otakar Strunecky

Study Type : Review
Additional Links
Diseases : Autism Spectrum Disorders : CK(3676) : AC(557)
Anti Therapeutic Actions : Vaccination: All : CK(12701) : AC(1349)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454)

This study suggests that excitotoxicity may be the central mechanism of autism spectrum disorders and that excitotoxins like aluminum, fluoride, and mercury may exacerbate excitotoxicity.

Pubmed Data : Curr Med Chem. 2009 ;16(2):157-70. PMID: **19149568**

Article Published Date : Jan 01, 2009

Authors : R L Blaylock, A Strunecka

Study Type : Review
Additional Links
Diseases : Autism : CK(942) : AC(162), Autism Spectrum Disorders : CK(3676) : AC(557), Brain: Microglial Activation : CK(192) : AC(114), Heavy Metal Toxicity : CK(2713) : AC(1019)
Additional Keywords : Heavy Metals and Autism : CK(89) : AC(15), Vaccine Research : CK(571) : AC(113)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Mercury : CK(885) : AC(213)
Adverse Pharmacological Actions : Excitotoxic : CK(40) : AC(10), Neurotoxic : CK(2838) : AC(702)

Autoimmune Diseases (AC 1) (CK 2)

Fluoride induces autoimmune orchitis involved with enhanced IL-17A secretion in mice testis.

Pubmed Data : J Agric Food Chem. 2019 Nov 8. Epub 2019 Nov 8. PMID: **31703480**

Article Published Date : Nov 07, 2019

Authors : Panhong Wu, Zilong Sun, Xiaoqian Lv, Xuejing Pei, Ram Kumar Manthari, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(11878) : AC(2631), Fluoride Toxicity : CK(1389) : AC(376), Orchitis : CK(19) : AC(5)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Azoospermic (AC 1) (CK 2)

Fluoride-induced apoptosis and gene expression profiling in mice sperm in vivo has been obsered.

Pubmed Data : Arch Toxicol. 2011 Nov ;85(11):1441-52. Epub 2011 Feb 22. PMID: **21340527**

Article Published Date : Nov 01, 2011

Authors : Zilong Sun, Ruiyan Niu, Bin Wang, Zhibin Jiao, Jinming Wang, Jianhai Zhang, Shaolin Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Azoospermic : CK(4) : AC(2), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Count: Low : CK(116) : AC(25), Sperm Quality: Low : CK(611) : AC(121)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Birth Defects (AC 1) (CK 2)

Low levels of selenium, fluoride and arsenic are toxic to rat embryos.

Pubmed Data : Wei Sheng Yan Jiu. 1999 Mar 30;28(2):74-6. PMID: **11939006**

Article Published Date : Mar 30, 1999

Authors : Y Li, M Sun, D Wu, X Chen

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(267) : AC(52), Prenatal Chemical Exposures : CK(2428) : AC(530)
Additional Keywords : Drug Synergy : CK(389) : AC(174)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454), Sodium Selenate : CK(11) : AC(8), Sodium Selenite : CK(23) : AC(16)
Adverse Pharmacological Actions : Teratogenic : CK(325) : AC(66)

Blood-Brain-Barrier Disorders (AC 1) (CK 2)

Fluoride may go through the blood-brain barrier and accumulate in rat hippocampus, and inhibit the activity of cholinesterase.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2003 Apr ;21(2):102-4. PMID: **14761523**

Article Published Date : Apr 01, 2003

Authors : Jin-xia Zhai, Zhi-yong Guo, Chuan-lai Hu, Qi-nan Wang, Qi-xing Zhu

Study Type : Animal Study
Additional Links
Diseases : Blood-Brain-Barrier Disorders : CK(31) : AC(18), Brain Injury: Hippocampal Damage : CK(44) : AC(21)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(8) : AC(4), Neurotoxic : CK(2838) : AC(702)

Bone Diseases (AC 3) (CK 13)

Calcium supplementation attenuates fluoride-induced bone injury.

Pubmed Data : J Hazard Mater. 2024 Mar 5 ;465:133411. Epub 2024 Jan 2. PMID: **38181596**

Article Published Date : Mar 04, 2024

Authors : Yingjun Hu, Yuanyuan Li, Meng Li, Tianrui Zhao, Wenhui Zhang, Yinghui Wang, Yang He, Hui Zhao, Haojie Li, Tianyu Wang, Yangfei Zhao, Jundong Wang, Jinming Wang

Study Type : Animal Study
Additional Links
Substances : Calcium : CK(444) : AC(68)
Diseases : Bone Diseases : CK(325) : AC(101), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Osteogenic : CK(171) : AC(67)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Different effects of fluoride exposure on the three major bone cell types.

Pubmed Data : Biol Trace Elem Res. 2020 Jan ;193(1):226-233. Epub 2019 Mar 14. PMID: **30877522**

Article Published Date : Dec 31, 2019

Authors : Ningning Jiang, Fengyang Guo, Boyao Sun, Xiuyun Zhang, Hui Xu

Study Type : In Vitro Study
Additional Links
Diseases : Bone Diseases : CK(325) : AC(101), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride exposure and prevalence of osteochondroma in drinking water Endemic fluorosis areas of Heilongjiang Province, China.

Pubmed Data : Int J Environ Health Res. 2023 Nov 3:1-14. Epub 2023 Nov 3. PMID: **37921081**

Article Published Date : Nov 02, 2023

Authors : Yongzheng Ma, Yang Liu, Xiaona Liu, Mang Li, Jing Cui, Zhizhong Guan, Junrui Pei, Yanhui Gao

Study Type : Human Study
Additional Links
Diseases : Bone Diseases : CK(325) : AC(101), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Bone Fractures (AC 2) (CK 20)

Community water fluoridation and rate of pediatric fractures.

Pubmed Data : J Am Acad Orthop Surg Glob Res Rev. 2023 Oct 1 ;7(10). Epub 2023 Oct 5. PMID: **37796978**

Article Published Date : Sep 30, 2023

Authors : Sarah E Lindsay, Spencer Smith, Scott Yang, Jung Yoo

Study Type : Human Study
Additional Links
Diseases : Bone Fractures : CK(697) : AC(121), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Excessive fluoride in water causes severe dental fluorosis and raises fracture risks, urging defluoridation in affected areas.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Sep 1 ;282:116705. Epub 2024 Jul 13. PMID: **39003868**

Article Published Date : Sep 01, 2024

Authors : Zeynab Ghaemi, Masoud Noshadi

Study Type : Human Study
Additional Links
Diseases : Bone Fractures : CK(697) : AC(121), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454)

Bone Marrow Suppression (AC 1) (CK 2)

Reduction in fluoride-induced genotoxicity in mouse bone marrow cells after substituting high fluoride-containing water with safe drinking water.

Pubmed Data : J Appl Toxicol. 2011 Oct ;31(7):703-5. Epub 2011 Mar 5. PMID: **21381055**

Article Published Date : Oct 01, 2011

Authors : Santosh Podder, Ansuman Chattopadhyay, Shelley Bhattacharya

Study Type : Animal Study
Additional Links
Diseases : Bone Marrow Suppression : CK(16) : AC(5), DNA damage : CK(2255) : AC(824)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Brain Inflammation (AC 4) (CK 7)

Aluminium, fluoride and a combination of aluminium-fluoride treatments caused an increase in brain lipid peroxidation products and reactive oxygen species formation.

Pubmed Data : Pathophysiology. 2015 Mar ;22(1):39-48. Epub 2014 Dec 13. PMID: **25577494**

Article Published Date : Feb 28, 2015

Authors : Ibukun Dorcas Akinrinade, Adejoke Elizabeth Memudu, Olalekan Michael Ogundele, Olanrewaju Ibrahim Ajetunmobi

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Increased Risk : CK(8492) : AC(1109), Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to fluoride in the prenatal and neonatal period result in the increase in COX2 activity and increase in PGE2 concentration in rats brain.

Pubmed Data : Neurotoxicology. 2019 Sep ;74:81-90. Epub 2019 Jun 5. PMID: **31175943**

Article Published Date : Aug 31, 2019

Authors : Karolina Dec, Agnieszka Łukomska, Karolina Skonieczna-Żydecka, Agnieszka Kolasa-Wołosiuk, Maciej Tarnowski, Irena Baranowska-Bosiacka, Izabela Gutowska

Study Type : Animal Study
Additional Links
Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Fluoride induces neutrophil extracellular traps and aggravates brain inflammation by disrupting neutrophil calcium homeostasis and causing ferroptosis.

Pubmed Data : Environ Pollut. 2023 Aug 15 ;331(Pt 1):121847. Epub 2023 May 18. PMID: **37209896**

Article Published Date : Aug 14, 2023

Authors : Dongxu Wang, Kai Yin, Yue Zhang, Hongmin Lu, Lulu Hou, Hongjing Zhao, Mingwei Xing

Study Type : In Vitro Study

Additional Links

Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The accumulation of sodium fluoride alters the neurological function which leads to neurodegenerative disorders.

Pubmed Data : Biol Trace Elem Res. 2020 Aug 31. Epub 2020 Aug 31. PMID: **32865723**

Article Published Date : Aug 30, 2020

Authors : Yugandhar P Reddy, Santosh Tiwari, Lomas K Tomar, Nalini Desai, Varun Kumar Sharma

Study Type : Animal Study

Additional Links

Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Brain Injury: Hippocampal Damage (AC 1) (CK 2)

Fluoride may go through the blood-brain barrier and accumulate in rat hippocampus, and inhibit the activity of cholinesterase.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2003 Apr ;21(2):102-4. PMID: **14761523**

Article Published Date : Apr 01, 2003

Authors : Jin-xia Zhai, Zhi-yong Guo, Chuan-lai Hu, Qi-nan Wang, Qi-xing Zhu

Study Type : Animal Study

Additional Links

Diseases : Blood-Brain-Barrier Disorders : CK(31) : AC(18), Brain Injury: Hippocampal Damage : CK(44) : AC(21)

Problem Substances : Fluoride : CK(1815) : AC(454)

Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(8) : AC(4), Neurotoxic : CK(2838) : AC(702)

Brain: Microglial Activation (AC 2) (CK 2)

The toxic effects of fluoride on the central nervous system may be related to the activition of microglia cells.

Pubmed Data : Mediators Inflamm. 2012 ;2012:102954. Epub 2012 Aug 13. PMID: **22933830**

Article Published Date : Jan 01, 2012

Authors : Xi Shuhua, Liu Ziyou, Yan Ling, Wang Fei, Guifan Sun

Study Type : In Vitro Study

Additional Links
Diseases : Brain: Microglial Activation : CK(192) : AC(114), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702), Oxidant : CK(646) : AC(246)

This study suggests that excitotoxicity may be the central mechanism of autism spectrum disorders and that excitotoxins like aluminum, fluoride, and mercury may exacerbate excitotoxicity.

Pubmed Data : Curr Med Chem. 2009 ;16(2):157-70. PMID: **19149568**
Article Published Date : Jan 01, 2009
Authors : R L Blaylock, A Strunecka
Study Type : Review
Additional Links
Diseases : Autism : CK(942) : AC(162), Autism Spectrum Disorders : CK(3676) : AC(557), Brain: Microglial Activation : CK(192) : AC(114), Heavy Metal Toxicity : CK(2713) : AC(1019)
Additional Keywords : Heavy Metals and Autism : CK(89) : AC(15), Vaccine Research : CK(571) : AC(113)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Mercury : CK(885) : AC(213)
Adverse Pharmacological Actions : Excitotoxic : CK(40) : AC(10), Neurotoxic : CK(2838) : AC(702)

Brain: Oxidative Stress (AC 3) (CK 5)

Administration of resveratrol along with aluminum + fluoride showed significant reversal of oxidative stress and neuronal damage.

Pubmed Data : Interdiscip Toxicol. 2016 Jun ;9(2):78-82. Epub 2017 May 17. PMID: **28652849**
Article Published Date : May 31, 2016
Authors : Chandra Shakar Reddy Nalagoni, Pratap Reddy Karnati
Study Type : Animal Study
Additional Links
Substances : Resveratrol : CK(3081) : AC(1505)
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Emodin protected against synaptic impairment and oxidative stress induced by fluoride in SH-SY5Y cells.

Pubmed Data : Environ Toxicol. 2020 Sep ;35(9):922-929. Epub 2020 Apr 15. PMID: **32293791**
Article Published Date : Aug 31, 2020
Authors : Chencen Lai, Qian Chen, Yuanting Ding, Heng Liu, Zhi Tang
Study Type : In Vitro Study
Additional Links
Substances : Emodin : CK(405) : AC(258)
Diseases : Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Synergistic oxidative impact of aluminum chloride and sodium fluoride

exposure during early stages of brain development.

Pubmed Data : Environ Sci Pollut Res Int. 2019 Feb 20. Epub 2019 Feb 20. PMID: **30788699**

Article Published Date : Feb 19, 2019

Authors : Amal A Kinawy

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum Chloride : CK(171) : AC(92), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Breastfeeding Concerns: Chemical Exposure (AC 1) (CK 2)

Sodium fluoride during gestation and lactation affects male reproduction in adult rats by decreasing spermatogenesis and steroidogenesis.

Pubmed Data : Naturwissenschaften. 2007 Jul;94(7):607-11. Epub 2007 Feb 22. PMID: **17318612**

Article Published Date : Jul 01, 2007

Authors : P Sreedhar Reddy, T Pushpalatha, P Sreenivasula Reddy

Study Type : Animal Study
Additional Links
Diseases : Breastfeeding Concerns: Chemical Exposure : CK(123) : AC(19), Hormone Insufficency : CK(30) : AC(8), Infertility: Male : CK(1668) : AC(424), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

C-Reactive Protein (AC 1) (CK 10)

Association between dental fluorosis prevalence and inflammation levels in school-aged children with low-to-moderate fluoride exposure.

Pubmed Data : Environ Pollut. 2023 Mar 1 ;320:120995. Epub 2023 Jan 2. PMID: **36603756**

Article Published Date : Feb 28, 2023

Authors : Huayang Tang, Mengru Wang, Gaochun Li, Mengwei Wang, Chen Luo, Guoyu Zhou, Qian Zhao, Lixin Dong, Hongliang Liu, Yushan Cui, Li Liu, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : C-Reactive Protein : CK(3920) : AC(389), C-Reactive Protein : CK(3920) : AC(389), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Cardiomyopathy (AC 1) (CK 2)

Fluoride induced tissue hypercalcemia, IL-17 mediated inflammation and apoptosis lead to cardiomyopathy.

Pubmed Data : Toxicology. 2018 Aug 1 ;406-407:44-57. Epub 2018 May 22. PMID: **29800585**

Article Published Date : Jul 31, 2018

Authors : Javed Ahsan Quadri, Saba Sarwar, Pinky, Parmita Kar, Seema Singh, Saumya Ranjan Mallick, Sudheer Arava, Tapash Chand Nag, Tara Sankar Roy, A Shariff

Study Type : Animal Study
Additional Links
Diseases : Cardiomyopathy : CK(358) : AC(160), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Cardiovascular Diseases (AC 2) (CK 3)

Fluoride and arsenic exhibit cardiotoxic properties related to their pro-inflammatory effect.

Pubmed Data : Arch Toxicol. 2012 Mar 16. Epub 2012 Mar 16. PMID: **22422340**

Article Published Date : Mar 16, 2012

Authors : Yanqin Ma, Ruiyan Niu, Zilong Sun, Jinming Wang, Guangying Luo, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169), Interleukin-6 up-regulation : CK(41) : AC(10), Interleukin-8 up-regulation : CK(2) : AC(1), MCP-1 (CCL2) up-regulation : CK(7) : AC(2), P-selectin upregulation : CK(2) : AC(1), Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation : CK(4) : AC(2)

This study explored the possible mechanism of fluoride induced endothelial cell injury.

Pubmed Data : Toxicology. 2023 Jun 15 ;492:153530. Epub 2023 Apr 28. PMID: **37121536**

Article Published Date : Jun 14, 2023

Authors : Chao Zhang, Yue Wang, Fengya Huang, Yaoyuan Zhang, Yunzhu Liu, Qingbo Wang, Xiaodi Zhang, Bingyun Li, Linet Angwa, Yuting Jiang, Yanhui Gao

Study Type : In Vitro Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826), Endothelial Dysfunction : CK(2710) : AC(571), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Chemically-Induced Liver Damage (AC 24) (CK 52)

Alpha-lipoic acid alleviated fluoride-induced hepatocyte injury.

Pubmed Data : J Agric Food Chem. 2022 Dec 21 ;70(50):15962-15971. Epub 2022 Dec 2. PMID: **36459405**

Article Published Date : Dec 20, 2022

Authors : Yangfei Zhao, Xueyan Liu, Chen Liang, Ting Pei, Mingyue Guo, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Substances : Alpha-Lipoic Acid : CK(1499) : AC(365)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069)
Pharmacological Actions : Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Fluoride : CK(1815) : AC(454)

Alpha-lipoic acidas a potential preventive and palliative agent for fluoride-induced hepatotoxic injury.

Pubmed Data : Chem Biol Interact. 2023 Nov 1 ;385:110719. Epub 2023 Sep 20. PMID: **37739047**

Article Published Date : Oct 31, 2023

Authors : Yanghuan Yu, Jipeng Xu, Hao Li, Jia Lv, Yaqin Zhang, Ruiyan Niu, Jundong Wang, Yangfei Zhao, Zilong Sun

Study Type : Animal Study
Additional Links
Substances : Alpha-Lipoic Acid : CK(1499) : AC(365)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Co-exposure to arsenic-fluoride results in endoplasmic reticulum stress-induced apoptosis through the PERK signaling pathway in the liver of offspring rats.

Pubmed Data : Biol Trace Elem Res. 2020 Sep ;197(1):192-201. Epub 2019 Nov 25. PMID: **31768761**

Article Published Date : Aug 31, 2020

Authors : Nisha Dong, Jing Feng, Jiaxin Xie, Xiaolin Tian, Meng Li, Penghui Liu, Yannan Zhao, Cailing Wei, Yi Gao, Ben Li, Yulan Qiu, Xiaoyan Yan

Study Type : Animal Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Combined effects of fluoride and arsenic on mitochondrial function in the liver.

Pubmed Data : Appl Biochem Biotechnol. 2023 Mar 22. Epub 2023 Mar 22. PMID: **36947368**

Article Published Date : Mar 21, 2023

Authors : Huma Khan, Yeshvandra Verma, S V S Rana

Study Type : Animal Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Effects of fluoride on DNA damage and caspase-mediated apoptosis in the liver of rats.

Pubmed Data : Biol Trace Elem Res. 2015 Aug ;166(2):173-82. Epub 2015 Feb 20. PMID: **25693680**

Article Published Date : Jul 31, 2015

Authors : Guo Hua Song, Fu Bing Huang, Ji Ping Gao, Mao Lin Liu, Wen Biao Pang, Wei bin Li, Xiao Yan Yan, Mei Jun Huo, Xia Yang

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Exposure to fluoride induces apoptosis in the liver, kidney, and heart of Xenopus laevis.

Pubmed Data : Acta Histochem. 2023 Apr ;125(3):151999. Epub 2023 Mar 9. PMID: **36905872**

Article Published Date : Mar 31, 2023

Authors : Siting Wang, Hongmei Ning, Liushuai Hua, Fei Ren, Lingli Chen, Zhisheng Ma, Rongbo Li, Yaming Ge, Zhihong Yin

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124), Renotoxic : CK(56) : AC(20)

Expression of SDF-1/CXCR4 and related inflammatory factors in sodium fluoride-treated hepatocytes.

Pubmed Data : PLoS One. 2024 ;19(6):e0302530. Epub 2024 Jun 21. PMID: **38905184**

Article Published Date : Dec 31, 2023

Authors : Rui Yang, Hongting Shen, Mingjun Wang, Yaqian Zhao, Shiling Zhu, Hong Jiang, Yanan Li, Guanglan Pu, Xun Chen, Ping Chen, Qing Lu, Jing Ma, Qiang Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Interleukin-1 up-regulation : CK(8) : AC(3), Interleukin-6 up-regulation : CK(41) : AC(10), Tumor necrosis factorα (TNFα) up-regulation : CK(65) : AC(11)

Fluoridated tap water was associated with an increased risk of hepatic failure.

Pubmed Data : World J Pediatr. 2024 Oct ;20(10):1029-1042. Epub 2024 Jun 27. PMID: **38937407**

Article Published Date : Sep 30, 2024

Authors : Won Seok Lee, Ju Hee Kim, Boeun Han, Gi Chun Lee, Hye Ri Jung, Ye Jin Shin, Eun Kyo Ha, Eun Lee, Soonchul Lee, Man Yong Han

Study Type : Human Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Fluoride exposure induces mitochondrial damage and mitophagy via activation of the IL-17A pathway in hepatocytes.

Pubmed Data : Sci Total Environ. 2022 Jan 15 ;804:150184. Epub 2021 Sep 8. PMID: **34517333**

Article Published Date : Jan 14, 2022

Authors : Yangfei Zhao, Jinming Wang, Jianhai Zhang, Zilong Sun, Ruiyan Niu, Ram Kumar Manthari, Mohammad Mehdi Ommati, Shaolin Wang, Jundong Wang

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Fluoride-induced hepatic and cardio-renal toxicity in a concentration-dependent manner.

Pubmed Data : Biol Trace Elem Res. 2023 Jan ;201(1):229-241. Epub 2022 Jan 12. PMID: **35023047**

Article Published Date : Dec 31, 2022

Authors : Priyanka Sharma, Pawan Kumar Verma, Shilpa Sood, Maninder Singh, Deepika Verma

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Genotoxicity of fluoride subacute exposure in rats and selenium intervention.

Pubmed Data : Chemosphere. 2021 Mar ;266:128978. Epub 2020 Nov 17. PMID: **33298328**

Article Published Date : Feb 28, 2021

Authors : Jelena Radovanović, Biljana Antonijević, Stoimir Kolarević, Sanja Milutinović-Smiljanić, Jelena Mandić, Branka Vuković-Gačić, Zorica Bulat, Marijana Ćurčić, Margareta Kračun-Kolarević, Karolina Sunjog, Jovana Kostić-Vuković, Jovana Jovanović Marić, Evica Antonijević-Miljaković, Danijela Đukić-Ćosić, Aleksandra Buha Djordjevic, Dragana Javorac, Katarina Baralić, Zoran Mandinić

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Pharmacological Actions : Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Neurotoxic : CK(2838) : AC(702)

Ginkgo biloba attenuated hepatotoxicity induced by combined exposure to cadmium and fluoride.

Pubmed Data : Mol Biol Rep. 2020 Sep ;47(9):6961-6972. Epub 2020 Sep 12. PMID: **32920758**

Article Published Date : Aug 31, 2020

Authors : Milad Arab-Nozari, Nematollah Ahangar, Ebrahim Mohammadi, Zahra Lorigooini, Mohammad Shokrzadeh, Fereshteh Talebpour Amiri, Fatemeh Shaki

Study Type : Animal Study
Additional Links
Substances : Ginkgo biloba : CK(2025) : AC(644)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Anti-Inflammatory Agents : CK(35225) : AC(15297),

Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Cadmium : CK(562) : AC(265), Sodium Fluoride : CK(1446) : AC(393)

Grape seed proanthocyanidin extract as a naturally occurring prophylactic treatment for fluoride-induced hepatotoxicity associated with iron overload.

Pubmed Data : J Toxicol Sci. 2018 ;43(5):311-319. PMID: **29743442**

Article Published Date : Dec 31, 2017

Authors : Qiang Niu, Ping He, Shangzhi Xu, Ruling Ma, Yusong Ding, Lati Mu, Shugang Li

Study Type : Animal Study
Additional Links
Substances : Grape Seed Extract : CK(1047) : AC(329)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Iron Overload : CK(218) : AC(78)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Grape seed proanthocyanins protect fluoride-induced hepatotoxicity.

Pubmed Data : Toxicol Res (Camb). 2024 Apr ;13(2):tfae039. Epub 2024 Mar 15. PMID: **38500515**

Article Published Date : Mar 31, 2024

Authors : Ran Wei, Guan Fang Ping, Zhe Tao Lang, Er Hui Wang

Study Type : In Vitro Study
Additional Links
Substances : Grape Seed Extract : CK(1047) : AC(329)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hesperidin protects liver and kidney against sodium fluoride-induced toxicity.

Pubmed Data : Life Sci. 2021 Sep 15 ;281:119730. Epub 2021 Jun 17. PMID: **34147482**

Article Published Date : Sep 14, 2021

Authors : Cuneyt Caglayan, Fatih Mehmet Kandemir, Ekrem Darendelioğlu, Sefa Küçükler, Adnan Ayna

Study Type : In Vitro Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Inflammation : CK(15536) : AC(5279), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Lead enhances fluoride influence on apoptotic processes in the HepG2 liver cell line.

Pubmed Data : Toxicol Ind Health. 2016 Mar ;32(3):517-25. Epub 2013 Nov 5. PMID: **24193047**

Article Published Date : Feb 29, 2016

Authors : Izabela Gutowska, Irena Baranowska-Bosiacka, Ewa Siwiec, Małgorzata Szczuko, Agnieszka Kolasa, Anna Kondarewicz, Marta Rybicka, Małgorzata Dunaj-Stańczyk, Ireneusz Wiernicki, Dariusz Chlubek, Ewa Stachowska

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Lead Poisoning : CK(479) : AC(180)

Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Fluoride : CK(1815) : AC(454), Lead : CK(684) : AC(227), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Mitochondrial respiratory chain dysfunction mediated by ROS is a primary point of fluoride-induced damage in Hepa1-6 cells.

Pubmed Data : Environ Pollut. 2019 Dec ;255(Pt 3):113359. Epub 2019 Oct 7. PMID: **31614248**

Article Published Date : Nov 30, 2019

Authors : Hong-Wei Wang, Yan Zhang, Pan-Pan Tan, Liu-Shu Jia, Yu Chen, Bian-Hua Zhou

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Novel pathways of fluoride-induced hepatotoxicity: P53-dependent ferroptosis induced by the SIRT1/FOXOs pathway and Nrf2/HO-1 pathway.

Pubmed Data : Comp Biochem Physiol C Toxicol Pharmacol. 2023 Feb ;264:109526. Epub 2022 Nov 29. PMID: **36455829**

Article Published Date : Jan 31, 2023

Authors : Dongxu Wang, Kai Yin, Yue Zhang, Hongmin Lu, Lulu Hou, Hongjing Zhao, Mingwei Xing

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sesamin plays an important role in maintaining hepatic health and preventing liver from toxic damage caused by fluoride.

Pubmed Data : Fish Shellfish Immunol. 2020 Nov ;106:715-723. Epub 2020 Aug 26. PMID: **32860904**

Article Published Date : Oct 31, 2020

Authors : Jinling Cao, Cuiping Feng, Lingtian Xie, Lijuan Li, Jianjie Chen, Shaojun Yun, Wenjing Guo, Tianyu Wang, Yijie Wu, Rui Meng, Guodong Wang, Xinjing He, Yongju Luo

Study Type : Animal Study
Additional Links
Substances : Sesamin : CK(207) : AC(94)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Fluoride : CK(1815) : AC(454)

Sodium fluoride caused hepatic inflammatory responses and significantly inhibited the production of anti-inflammatory mediators.

Pubmed Data : Biol Trace Elem Res. 2018 Jul 30. Epub 2018 Jul 30. PMID: **30062462**

Article Published Date : Jul 29, 2018

Authors : Linlin Chen, Ping Kuang, Huan Liu, Qin Wei, Hengmin Cui, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Sodium fluoride causes oxidative stress and apoptosis in the mouse liver.

Pubmed Data : Aging (Albany NY). 2017 Jun 27 ;9(6):1623-1639. PMID: **28657544**

Article Published Date : Jun 26, 2017

Authors : Yujiao Lu, Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

TFE3-mediated impairment of lysosomal biogenesis and defective autophagy contribute to fluoride-induced hepatotoxicity.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Mar 15 ;253:114674. Epub 2023 Feb 22. PMID: **36827899**

Article Published Date : Mar 14, 2023

Authors : Zeyu Hu, Wanjing Xu, Jingjing Zhang, Yanling Tang, Hengrui Xing, Panpan Xu, Yue Ma, Qiang Niu

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Melatonin : CK(2743) : AC(904)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Treadmill exercise could restore the molecular changes caused by excessive sodium fluoride exposure.

Pubmed Data : Biol Trace Elem Res. 2023 Mar 8. Epub 2023 Mar 8. PMID: **36884125**

Article Published Date : Mar 07, 2023

Authors : Ke Liu, Lei Chai, Taotao Zhao, Shaosan Zhang, Jixiang Wang, Yanghuan Yu, Ruiyan Niu, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Therapeutic Actions : Exercise : CK(6247) : AC(999), Exercise: Running : CK(593) : AC(71)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Virgin coconut oil complements with its polyphenol components mitigate sodium fluoride toxicity in vitro and in vivo.

Pubmed Data : Drug Chem Toxicol. 2021 Aug 18:1-7. Epub 2021 Aug 18. PMID: **34407699**

Article Published Date : Aug 17, 2021

Authors : Soorya Parathodi Illam, Sruthi Panniyan Kandiyil, Arunaksharan Narayanankutty, Soumya Valappan Veetil, Thekkekara Devassy Babu, Rao M Uppu, Achuthan C Raghavamenon

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Coconut Oil : CK(478) : AC(106), Polyphenols : CK(2728) : AC(996)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Childhood Chemical Exposures (AC 4) (CK 40)

Children's growth and intelligence can be adversely affected by fluoride and arsenic exposure in drinking water.

Pubmed Data : Environ Health Perspect. 2007 Apr;115(4):643-7. Epub 2007 Jan 9. PMID: **17450237**

Article Published Date : Apr 01, 2007

Authors : San-Xiang Wang, Zheng-Hui Wang, Xiao-Tian Cheng, Jun Li, Zhi-Ping Sang, Xiang-Dong Zhang, Ling-Ling Han, Xiao-Yan Qiao, Zhao-Ming Wu, Zhi-Quan Wang

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Children: Impaired Growth : CK(50) : AC(4), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to fluoride and arsenic in drinking water is associated with decreased intelligence in children.

Pubmed Data : Cad Saude Publica. 2007;23 Suppl 4:S579-87. PMID: **18038039**

Article Published Date : Jan 01, 2007

Authors : Diana Rocha-Amador, Maria Elena Navarro, Leticia Carrizales, Raúl Morales, Jaqueline Calderón

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoridination of water contributes to elevated blood levels and other disorders in children.

Pubmed Data : Neurotoxicology. 2007 Sep;28(5):1032-42. Epub 2007 Mar 1. PMID: **17420053**

Article Published Date : Sep 01, 2007

Authors : Myron J Coplan, Steven C Patch, Roger D Masters, Marcia S Bachman

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Lead Poisoning : CK(479) : AC(180)
Additional Keywords : Fluoride In The Water : CK(13) : AC(3)
Problem Substances : Fluoride : CK(1815) : AC(454)

High iodine and high fluorine adversely effects the intelligence and health of children.

Pubmed Data : Zhonghua Liu Xing Bing Xue Za Zhi. 1994 Oct;15(5):296-8. PMID: **7859263**

Article Published Date : Oct 01, 1994

Authors : Y Yang, X Wang, X Guo

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), TSH: Elevated : CK(20) : AC(2)
Problem Substances : Fluoride : CK(1815) : AC(454), Iodine: Excess : CK(10) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Childhood Cognitive Disorders (AC 6) (CK 80)

Children who live in a fluorosis area have 5 times higher odds of developing low IQ than those who live in a nonfluorosis area or a slight fluorosis area.

Pubmed Data : Biol Trace Elem Res. 2008;126(1-3):115-20. Epub 2008 Aug 10. PMID: 18695947

Article Published Date : Jan 01, 2008

Authors : Qin-Qing Tang, Jun Du, Heng-Hui Ma, Shao-Jun Jiang, Xiao-Jun Zhou

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children's growth and intelligence can be adversely affected by fluoride and arsenic exposure in drinking water.

Pubmed Data : Environ Health Perspect. 2007 Apr;115(4):643-7. Epub 2007 Jan 9. PMID: 17450237

Article Published Date : Apr 01, 2007

Authors : San-Xiang Wang, Zheng-Hui Wang, Xiao-Tian Cheng, Jun Li, Zhi-Ping Sang, Xiang-Dong Zhang, Ling-Ling Han, Xiao-Yan Qiao, Zhao-Ming Wu, Zhi-Quan Wang

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Children: Impaired Growth : CK(50) : AC(4), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to fluoride and arsenic in drinking water is associated with decreased intelligence in children.

Pubmed Data : Cad Saude Publica. 2007;23 Suppl 4:S579-87. PMID: 18038039

Article Published Date : Jan 01, 2007

Authors : Diana Rocha-Amador, Maria Elena Navarro, Leticia Carrizales, Raúl Morales, Jaqueline Calderón

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to high levels of fluoride may adversely influence children's intelligence development.

Pubmed Data : Zhongguo Dang Dai Er Ke Za Zhi. 2008 Dec;10(6):723-5. PMID: 19102839

Article Published Date : Dec 01, 2008

Authors : Ming Liu, Cong Qian

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride

Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluorosis is associated with impaired cognition in children.

Pubmed Data : Ann Indian Acad Neurol. 2021 ;24(5):715-720. Epub 2020 Nov 6. PMID: **35002129**

Article Published Date : Dec 31, 2020

Authors : Anjana Prabhakar, Kabeer Abdulkhayarkutty, Shaji Velayudhan Cheruvallil, Prasanth Sudhakaran

Study Type : Human Study
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High iodine and high fluorine adversely effects the intelligence and health of children.

Pubmed Data : Zhonghua Liu Xing Bing Xue Za Zhi. 1994 Oct;15(5):296-8. PMID: **7859263**

Article Published Date : Oct 01, 1994

Authors : Y Yang, X Wang, X Guo

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), TSH: Elevated : CK(20) : AC(2)
Problem Substances : Fluoride : CK(1815) : AC(454), Iodine: Excess : CK(10) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children: Impaired Growth (AC 1) (CK 10)

Children's growth and intelligence can be adversely affected by fluoride and arsenic exposure in drinking water.

Pubmed Data : Environ Health Perspect. 2007 Apr;115(4):643-7. Epub 2007 Jan 9. PMID: **17450237**

Article Published Date : Apr 01, 2007

Authors : San-Xiang Wang, Zheng-Hui Wang, Xiao-Tian Cheng, Jun Li, Zhi-Ping Sang, Xiang-Dong Zhang, Ling-Ling Han, Xiao-Yan Qiao, Zhao-Ming Wu, Zhi-Quan Wang

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Children: Impaired Growth : CK(50) : AC(4), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic Kidney Disease (CKD) (AC 3) (CK 6)

Ameliorative effect of traditional polyherbal formulation on TNF-α, IL-1β and Caspase-3 expression in kidneys.

Pubmed Data : J Ethnopharmacol. 2023 Jul 11 ;318(Pt A):116900. Epub 2023 Jul 11. PMID: **37442489**

Article Published Date : Jul 10, 2023

Authors : Mohammad Umar Khan, Parakh Basist, Gaurav, Sultan Zahiruddin, Naveen Reddy Penumallu, Sayeed Ahmad

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Apigenin : CK(432) : AC(391), Ellagic Acid : CK(537) : AC(292), Ferulic acid : CK(259) : AC(145), Quercetin : CK(1864) : AC(847)
Diseases : Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Interleukin-1 beta downregulation : CK(5277) : AC(2851), Renoprotective : CK(4133) : AC(1932), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effect of water fluoridation on the development of medial vascular calcification in uremic rats.

Pubmed Data : Toxicology. 2014 Apr 6 ;318:40-50. Epub 2014 Feb 18. PMID: **24561004**

Article Published Date : Apr 06, 2014

Authors : Ana Martín-Pardillos, Cecilia Sosa, Ángel Millán, Víctor Sorribas

Study Type : Animal Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Atheroma : CK(17) : AC(5), Atherosclerosis : CK(1964) : AC(771), Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Excess fluoride in drinking water and in the locally grown food in the affected areas might lead to chronic kidney diseases.

Pubmed Data : Environ Health Prev Med. 2015 Jul ;20(4):237-42. Epub 2015 Apr 28. PMID: **25916575**

Article Published Date : Jun 30, 2015

Authors : Ranjith W Dharmaratne

Study Type : Commentary
Additional Links
Diseases : Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage : CK(780) : AC(347)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Cognitive Decline/Dysfunction (AC 9) (CK 76)

Children who live in a fluorosis area have 5 times higher odds of developing low IQ than those who live in a nonfluorosis area or a slight fluorosis area.

Pubmed Data : Biol Trace Elem Res. 2008;126(1-3):115-20. Epub 2008 Aug 10. PMID: **18695947**

Article Published Date : Jan 01, 2008

Authors : Qin-Qing Tang, Jun Du, Heng-Hui Ma, Shao-Jun Jiang, Xiao-Jun Zhou

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Circulating levels of autophagy markers were low in children with higher fluoride body burden and lower intelligence quotient scores.

Pubmed Data : Toxicol Appl Pharmacol. 2019 Sep 1 ;378:114608. Epub 2019 Jun 5. PMID: **31173788**

Article Published Date : Aug 31, 2019

Authors : Guoyu Zhou, Sha Tang, Lu Yang, Qiang Niu, Jingwen Chen, Tao Xia, Sumei Wang, Mengwei Wang, Qian Zhao, Ling Liu, Pei Li, Lixin Dong, Kedi Yang, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to high levels of fluoride may adversely influence children's intelligence development.

Pubmed Data : Zhongguo Dang Dai Er Ke Za Zhi. 2008 Dec;10(6):723-5. PMID: **19102839**

Article Published Date : Dec 01, 2008

Authors : Ming Liu, Cong Qian

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Focus on cognitive impairment induced by excessive fluoride: An update review.

Pubmed Data : Neuroscience. 2024 Oct 18 ;558:22-29. Epub 2024 Aug 11. PMID: **39137871**

Article Published Date : Oct 18, 2024

Authors : Yuhang Zhang, Yanhui Gao, Xiaona Liu

Study Type : Review
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Mitochondrial Dysfunction : CK(618) : AC(262), Neurotoxicity : CK(49) : AC(27), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Oxidant : CK(646) : AC(246)

Inorganic fluoride and functions of brain.

Pubmed Data : Crit Rev Toxicol. 2020 Jan ;50(1):28-46. Epub 2020 Feb 19. PMID: **32073339**

Article Published Date : Dec 31, 2019

Authors : N I Agalakova, O V Nadei

Study Type : Review
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Modifying effect of COMT gene polymorphism and a predictive role for proteomics analysis in children's intelligence in endemic fluorosis area in Tianjin, China.

Pubmed Data : Toxicol Sci. 2015 Apr ;144(2):238-45. Epub 2015 Jan 1. PMID: **25556215**

Article Published Date : Mar 31, 2015

Authors : Shun Zhang, Xiaofei Zhang, Hongliang Liu, Weidong Qu, Zhizhong Guan, Qiang Zeng, Chunyang Jiang, Hui Gao, Cheng Zhang, Rongrong Lei, Tao Xia, Zhenglun Wang, Lu Yang, Yihu Chen, Xue Wu, Yushan Cui, Linyu Yu, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Genomic Variation : CK(302) : AC(38)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Rats exposed to low iodine and high fluoride exhibit changes in brain proteins that may be associated with neurotoxicity.

Pubmed Data : Arch Toxicol. 2010 Apr 3. Epub 2010 Apr 3. PMID: **20364248**

Article Published Date : Apr 03, 2010

Authors : Yaming Ge, Ruiyan Niu, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Sirt3-mediated mitochondrial dysfunction is involved in fluoride-induced cognitive deficits.

Pubmed Data : Food Chem Toxicol. 2021 Dec ;158:112665. Epub 2021 Nov 12. PMID: **34780879**

Article Published Date : Nov 30, 2021

Authors : Dongmei Wang, Luyang Cao, Shunji Pan, Gang Wang, Lewei Wang, Ningyao Cao, Xueqin Hao

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Cognitive Decline/Dysfunction : CK(5061) : AC(1005)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

The cognitive functions could be impaired in the older people living in high fluoride drinking water areas.

Pubmed Data : BMC Public Health. 2021 Dec 9 ;21(1):2237. Epub 2021 Dec 9. PMID: **34886821**

Article Published Date : Dec 08, 2021

Authors : Chao Ren, Peng Zhang, Xiao-Yan Yao, Hui-Hua Li, Rui Chen, Cai-Yi Zhang, De-Qin Geng

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Colitis (AC 1) (CK 2)

Alleviation of fluoride-induced colitis by tea polysaccharides.

Pubmed Data : J Hazard Mater. 2024 Sep 5 ;476:134858. Epub 2024 Jun 7. PMID: **38905983**

Article Published Date : Sep 05, 2024

Authors : Chenjun Zhao, Guijie Chen, Ying Huang, Yuxuan Zhang, Sichen Li, Zhiliang Jiang, Huihui Peng, Juan Wang, Daxiang Li, Ruyan Hou, Chuanyi Peng, Xiaochun Wan, Huimei Cai

Study Type : Animal Study
Additional Links
Substances : Tea : CK(4517) : AC(940)
Diseases : Colitis : CK(1495) : AC(715), Dysbiosis : CK(2010) : AC(579)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Dysbiotic : CK(2) : AC(1)

Coronary Artery Ecstasia (AC 1) (CK 10)

Chronic fluoride exposure has an important role in pathogenesis of coronary artery ectasia.

Pubmed Data : Biol Trace Elem Res. 2011 Nov ;143(2):695-701. Epub 2010 Dec 7. PMID: **21136197**

Article Published Date : Nov 01, 2011

Authors : Ozkan Dede, Ercan Varol, Ahmet Altinbas, Simge Varol

Study Type : Human Study
Additional Links
Diseases : Coronary Artery Ecstasia : CK(10) : AC(1)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

DNA damage (AC 15) (CK 25)

Antimutagenic effects of the composition from green tea leaves extracts and caucasian persimmon fruits.

Pubmed Data : Bull Exp Biol Med. 2021 Dec ;172(2):143-145. Epub 2021 Dec 2. PMID: **34853971**

Article Published Date : Nov 30, 2021

Authors : M B Huseynov, N A Abdullaev

Study Type : In Vitro Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370), Persimmon : CK(200) : AC(106)
Diseases : DNA damage : CK(2255) : AC(824)
Pharmacological Actions : Antimutagenic Agents : CK(217) : AC(137), Antioxidants : CK(32218) : AC(14161)
Additional Keywords : Plant Extracts : CK(18030) : AC(6728)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Cell cycle arrest and gene expression profiling of testis in mice exposed to fluoride.

Pubmed Data : Environ Toxicol. 2017 May ;32(5):1558-1565. Epub 2016 Nov 14. PMID: **27862939**

Article Published Date : Apr 30, 2017

Authors : Kai Su, Zilong Sun, Ruiyan Niu, Ying Lei, Jing Cheng, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Combination of fluoride and SO2 induce DNA damage and morphological alterations in male rat kidney.

Pubmed Data : Cell Physiol Biochem. 2018 ;50(2):734-744. Epub 2018 Oct 11. PMID: **30308495**

Article Published Date : Dec 31, 2017

Authors : Yan Gao, Chen Liang, Jianhai Zhang, Junjie Ma, Jinming Wang, Ruiyan Niu, Chiranjeevi Tikka, Yewei Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Air Pollution Linked Toxicity : CK(4951) : AC(731), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effects of fluoride on DNA damage and caspase-mediated apoptosis in the liver of rats.

Pubmed Data : Biol Trace Elem Res. 2015 Aug ;166(2):173-82. Epub 2015 Feb 20. PMID: **25693680**

Article Published Date : Jul 31, 2015

Authors : Guo Hua Song, Fu Bing Huang, Ji Ping Gao, Mao Lin Liu, Wen Biao Pang, Wei bin Li, Xiao Yan Yan, Mei Jun Huo, Xia Yang

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Fluoride induces oxidative damage and SIRT1/autophagy through ROS-mediated JNK signaling.

Pubmed Data : Free Radic Biol Med. 2015 Dec ;89:369-78. Epub 2015 Sep 30. PMID: **26431905**

Article Published Date : Nov 30, 2015

Authors : Maiko Suzuki, Cheryl Bandoski, John D Bartlett

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosilicic acid and cotinine, separately and in combination, induce genotoxicity and telomeric reduction in human osteoblast cell line

MG63.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2022 ;876-877:503474. Epub 2022 Feb 17. PMID: **35483789**

Article Published Date : Dec 31, 2021

Authors : Ana L H Garcia, Cristina A Matzenbacher, Solange Soares, Paula Rohr, Juliana da Silva

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosilicic acid induces DNA damage and oxidative stress in bone marrow mesenchymal stem cells.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2021 ;861-862:503297. Epub 2020 Nov 21. PMID: **33551106**

Article Published Date : Dec 31, 2020

Authors : Ana L H Garcia, Juliana Picinini, Maiele D Silveira, Melissa Camassola, Ana P V Visentim, Mirian Salvador, Juliana da Silva

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Genotoxicity of fluoride subacute exposure in rats and selenium intervention.

Pubmed Data : Chemosphere. 2021 Mar ;266:128978. Epub 2020 Nov 17. PMID: **33298328**

Article Published Date : Feb 28, 2021

Authors : Jelena Radovanović, Biljana Antonijević, Stoimir Kolarević, Sanja Milutinović-Smiljanić, Jelena Mandić, Branka Vuković-Gačić, Zorica Bulat, Marijana Ćurčić, Margareta Kračun-Kolarević, Karolina Sunjog, Jovana Kostić-Vuković, Jovana Jovanović Marić, Evica Antonijević-Miljaković, Danijela Đukić-Ćosić, Aleksandra Buha Djordjevic, Dragana Javorac, Katarina Baralić, Zoran Mandinić

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Pharmacological Actions : Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Neurotoxic : CK(2838) : AC(702)

Reduction in fluoride-induced genotoxicity in mouse bone marrow cells after substituting high fluoride-containing water with safe drinking water.

Pubmed Data : J Appl Toxicol. 2011 Oct ;31(7):703-5. Epub 2011 Mar 5. PMID: **21381055**

Article Published Date : Oct 01, 2011

Authors : Santosh Podder, Ansuman Chattopadhyay, Shelley Bhattacharya

Study Type : Animal Study
Additional Links
Diseases : Bone Marrow Suppression : CK(16) : AC(5), DNA damage : CK(2255) : AC(824)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride and rotenone may interact synergistically leading to oxidative damage and neuronal cell loss.

Pubmed Data : Neurol Res. 2023 Nov ;45(11):979-987. Epub 2023 Sep 12. PMID: **37699078**

Article Published Date : Oct 31, 2023

Authors : Yilmaz Kocak, Gokhan Oto, Zubeyir Huyut, Hamit Hakan Alp, Fikret Turkan, Ezgi Onay

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Rotenone : CK(57) : AC(32), Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride exposure exerts toxic effects on porcine oocyte maturation.

Pubmed Data : Sci Rep. 2017 Dec 6 ;7(1):17082. Epub 2017 Dec 6. PMID: **29213094**

Article Published Date : Dec 05, 2017

Authors : Shuang Liang, Zheng-Wen Nie, Minghui Zhao, Ying-Jie Niu, Kyung-Tae Shin, Xiang-Shun Cui

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induces apoptosis in the kidney of rats through caspase-mediated pathways and DNA damage.

Pubmed Data : J Physiol Biochem. 2014 Sep ;70(3):857-68. Epub 2014 Aug 27. PMID: **25158646**

Article Published Date : Aug 31, 2014

Authors : Guo Hua Song, Ji Ping Gao, Chun Fang Wang, Chao Yang Chen, Xiao Yan Yan, Min Guo, Yu Wang, Fu Bing Huang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Renotoxic : CK(56) : AC(20)

Sodium fluoride promotes apoptosis by generation of reactive oxygen species in human lymphocytes.

Pubmed Data : J Toxicol Environ Health A. 2014 ;77(21):1269-80. PMID: **25268553**

Article Published Date : Dec 31, 2013

Authors : Manivannan Jothiramajayam, Sonali Sinha, Manosij Ghosh, Anish Nag, Aditi Jana, Anita Mukherjee

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Genotoxic : CK(545) : AC(184)

The effect of lycopene on DNA damage and repair in fluoride-treated NRK-52E cell line.

Pubmed Data : Biol Trace Elem Res. 2021 May ;199(5):1979-1985. Epub 2020 Aug 8. PMID: **32770329**

Article Published Date : Apr 30, 2021

Authors : Sedat Çetin, Ayşe Usta, Veysel Yüksek

Study Type : In Vitro Study

Additional Links
Substances : Lycopene : CK(1265) : AC(371)
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The effect of vitamin E and selenium combination in repairing fluoride-induced DNA damage to NRK-52E cells.

Pubmed Data : Mol Biol Rep. 2020 Oct ;47(10):7761-7770. Epub 2020 Oct 6. PMID: **33025505**

Article Published Date : Sep 30, 2020

Authors : Veysel Yüksek, Sedat Çetin, Ayşe Usta

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389), Vitamin E : CK(3039) : AC(570)
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Pharmacological Actions : DNA Repair Up-regulation : CK(110) : AC(34), Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Degenerative Joint Disease (AC 1) (CK 2)

Chronic excess fluoride uptake contributes to degenerative joint disease.

Pubmed Data : Ecotoxicol Environ Saf. 2018 Oct 30 ;162:383-390. Epub 2018 Jul 13. PMID: **30015183**

Article Published Date : Oct 29, 2018

Authors : Clare Death, Graeme Coulson, Uwe Kierdorf, Horst Kierdorf, Richard Ploeg, Simon Firestone, Ian Dohoo, Jasmin Hufschmid

Study Type : Animal Study
Additional Links
Diseases : Degenerative Joint Disease : CK(5) : AC(3), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Fluoride : CK(1815) : AC(454)

Dementia (AC 1) (CK 2)

Pharmacological implications of ipriflavone against environmental metal-induced neurodegeneration and dementia.

Pubmed Data : Environ Sci Pollut Res Int. 2021 Jul 7. Epub 2021 Jul 7. PMID: **34235690**

Article Published Date : Jul 06, 2021

Authors : Hend M Hussien, Doaa A Ghareeb, Hany E A Ahmed, Hani S Hafez, Samar R Saleh

Study Type : Animal Study
Additional Links
Substances : Ipriflavone : CK(49) : AC(14)
Diseases : Dementia : CK(2180) : AC(375), Heavy Metal Toxicity : CK(2713) : AC(1019)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)

Problem Substances : Aluminum : CK(1061) : AC(349), Cadmium : CK(562) : AC(265), Fluoride : CK(1815) : AC(454)

Dental Caries (AC 7) (CK 62)

Fluorosis contributes to a more intense course of caries progression.

Pubmed Data : Wiad Lek. 2018;71(2 pt 2):335-338. PMID: **29786582**

Article Published Date : Dec 31, 2017

Authors : Valentina Trufanova, Olha Sheshukova, Vadym Davydenko, Tetiana Polishchuk, Sofia Bauman, Vitalina Dobroskok

Study Type : Human Study
Additional Links
Diseases : Dental Caries : CK(700) : AC(127), Dental Caries : CK(700) : AC(127)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Fluoride : CK(1815) : AC(454)

Green tea mouth rinse resulted in significant reduction of colony number of salivary Streptococcus mutans and Lactobacillus which is comparable with sodium fluoride mouth rinse.

Pubmed Data : Dent Res J (Isfahan). 2011 Dec ;8(Suppl 1):S58-63. PMID: **23372597**

Article Published Date : Nov 30, 2011

Authors : Maryam Hajenorouzali Tehrani, Gholamreza Asghari, Maryam Hajiahmadi

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370)
Diseases : Dental Caries : CK(700) : AC(127), Dental Plaque : CK(355) : AC(42)
Pharmacological Actions : Anti-Bacterial Agents : CK(4114) : AC(1943)
Additional Keywords : Mouthwash : CK(246) : AC(29), Natural Substances Versus Chemicals : CK(61) : AC(7), Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High sugar intakes leads to high levels of caries in adults even in those with widespread water fluoridation and the use of fluoridated toothpastes.

Pubmed Data : BMC Public Health. 2014 ;14:863. Epub 2014 Sep 16. PMID: **25228012**

Article Published Date : Dec 31, 2013

Authors : Aubrey Sheiham, W Philip T James

Study Type : Human Study
Additional Links
Diseases : Dental Caries : CK(700) : AC(127)
Additional Keywords : Dose Response : CK(1769) : AC(700)
Problem Substances : Fluoride : CK(1815) : AC(454), Sugar : CK(13) : AC(4)

Prevention of dental caries by grape seed extract supplementation.

Pubmed Data : Nutr Health. 2019 Nov 24:260106019887890. Epub 2019 Nov 24. PMID: **31760860**

Article Published Date : Nov 23, 2019

Authors : Nicole M Delimont, Brandi N Carlson

Study Type : Review

Additional Links
Diseases : Dental Caries : CK(700) : AC(127)
Pharmacological Actions : Antimicrobial : CK(1531) : AC(781)
Additional Keywords : Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The effectiveness of 0.5% C. sinensis extract was more compared to 0.05% sodium fluoride and 0.2% chlorhexidine gluconate mouth rinses.

Pubmed Data : J Int Soc Prev Community Dent. 2015 May-Jun;5(3):218-26. PMID: **26236682**

Article Published Date : Apr 30, 2015

Authors : Chaitali U Hambire, Rashmi Jawade, Amol Patil, Vaibhav R Wani, Ankur A Kulkarni, Parag B Nehete

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370)
Diseases : Dental Caries : CK(700) : AC(127), Dental Caries: Children : CK(174) : AC(20), Dental Plaque : CK(355) : AC(42), Gingivitis : CK(595) : AC(86)
Pharmacological Actions : Anti-Bacterial Agents : CK(4114) : AC(1943)
Additional Keywords : Natural Substances Versus Drugs : CK(2773) : AC(556), Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Chlorhexidine gluconate : CK(52) : AC(7), Sodium Fluoride : CK(1446) : AC(393)

There is very little contemporary evidence, meeting the review's inclusion criteria, that has evaluated the effectiveness of water fluoridation for the prevention of caries.

Pubmed Data : Cochrane Database Syst Rev. 2015 ;6:CD010856. Epub 2015 Jun 18. PMID: **26092033**

Article Published Date : Dec 31, 2014

Authors : Zipporah Iheozor-Ejiofor, Helen V Worthington, Tanya Walsh, Lucy O'Malley, Jan E Clarkson, Richard Macey, Rahul Alam, Peter Tugwell, Vivian Welch, Anne-Marie Glenny

Study Type : Review
Additional Links
Diseases : Dental Caries : CK(700) : AC(127), Dental Caries: Children : CK(174) : AC(20), Dental Caries: Children : CK(174) : AC(20)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Water fluoridation less effective now than in past.

Pubmed Data : Cochrane Database Syst Rev. 2024 Oct 4 ;10(10):CD010856. Epub 2024 Oct 4. PMID: **39362658**

Article Published Date : Oct 03, 2024

Authors : Zipporah Iheozor-Ejiofor, Tanya Walsh, Sharon R Lewis, Philip Riley, Dwayne Boyers, Janet E Clarkson, Helen V Worthington, Anne-Marie Glenny, Lucy O'Malley

Study Type : Meta Analysis
Additional Links
Diseases : Dental Caries : CK(700) : AC(127), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Dental Caries: Children (AC 2) (CK 11)

The effectiveness of 0.5% C. sinensis extract was more compared to

0.05% sodium fluoride and 0.2% chlorhexidine gluconate mouth rinses.

Pubmed Data : J Int Soc Prev Community Dent. 2015 May-Jun;5(3):218-26. PMID: **26236682**

Article Published Date : Apr 30, 2015

Authors : Chaitali U Hambire, Rashmi Jawade, Amol Patil, Vaibhav R Wani, Ankur A Kulkarni, Parag B Nehete

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370)
Diseases : Dental Caries : CK(700) : AC(127), Dental Caries: Children : CK(174) : AC(20), Dental Plaque : CK(355) : AC(42), Gingivitis : CK(595) : AC(86)
Pharmacological Actions : Anti-Bacterial Agents : CK(4114) : AC(1943)
Additional Keywords : Natural Substances Versus Drugs : CK(2773) : AC(556), Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Chlorhexidine gluconate : CK(52) : AC(7), Sodium Fluoride : CK(1446) : AC(393)

There is very little contemporary evidence, meeting the review's inclusion criteria, that has evaluated the effectiveness of water fluoridation for the prevention of caries.

Pubmed Data : Cochrane Database Syst Rev. 2015 ;6:CD010856. Epub 2015 Jun 18. PMID: **26092033**

Article Published Date : Dec 31, 2014

Authors : Zipporah Iheozor-Ejiofor, Helen V Worthington, Tanya Walsh, Lucy O'Malley, Jan E Clarkson, Richard Macey, Rahul Alam, Peter Tugwell, Vivian Welch, Anne-Marie Glenny

Study Type : Review
Additional Links
Diseases : Dental Caries : CK(700) : AC(127), Dental Caries: Children : CK(174) : AC(20), Dental Caries: Children : CK(174) : AC(20)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Dental Plaque (AC 3) (CK 30)

Green tea mouth rinse resulted in significant reduction of colony number of salivary Streptococcus mutans and Lactobacillus which is comparable with sodium fluoride mouth rinse.

Pubmed Data : Dent Res J (Isfahan). 2011 Dec ;8(Suppl 1):S58-63. PMID: **23372597**

Article Published Date : Nov 30, 2011

Authors : Maryam Hajenorouzali Tehrani, Gholamreza Asghari, Maryam Hajiahmadi

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370)
Diseases : Dental Caries : CK(700) : AC(127), Dental Plaque : CK(355) : AC(42)
Pharmacological Actions : Anti-Bacterial Agents : CK(4114) : AC(1943)
Additional Keywords : Mouthwash : CK(246) : AC(29), Natural Substances Versus Chemicals : CK(61) : AC(7), Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The effectiveness of 0.5% C. sinensis extract was more compared to 0.05% sodium fluoride and 0.2% chlorhexidine gluconate mouth rinses.

Pubmed Data : J Int Soc Prev Community Dent. 2015 May-Jun;5(3):218-26. PMID: **26236682**

Article Published Date : Apr 30, 2015

Authors : Chaitali U Hambire, Rashmi Jawade, Amol Patil, Vaibhav R Wani, Ankur A Kulkarni, Parag B Nehete

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370)
Diseases : Dental Caries : CK(700) : AC(127), Dental Caries: Children : CK(174) : AC(20), Dental Plaque : CK(355) : AC(42), Gingivitis : CK(595) : AC(86)
Pharmacological Actions : Anti-Bacterial Agents : CK(4114) : AC(1943)
Additional Keywords : Natural Substances Versus Drugs : CK(2773) : AC(556), Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Chlorhexidine gluconate : CK(52) : AC(7), Sodium Fluoride : CK(1446) : AC(393)

Two randomized clinical studies to confirm differential plaque removal by sodium bicarbonate.

Pubmed Data : J Clin Dent. 2017 Sep ;28(3):44-48. PMID: **29211950**

Article Published Date : Aug 31, 2017

Authors : Stephen Mason, Ritu Karwal, Mary Lynn Bosma

Study Type : Human Study
Additional Links
Substances : Sodium Bicarbonate : CK(240) : AC(37)
Diseases : Dental Plaque : CK(355) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Depression (AC 2) (CK 4)

Exercise ameliorates fluoride-induced anxiety- and depression-like behavior in mice.

Pubmed Data : Biol Trace Elem Res. 2022 Feb ;200(2):678-688. Epub 2021 Apr 6. PMID: **33825162**

Article Published Date : Jan 31, 2022

Authors : Qiqi Cao, Jixiang Wang, Yanru Hao, Fangye Zhao, Rong Fu, Yanghuan Yu, Jundong Wang, Ruiyan Niu, Shengtai Bian, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Anxiety : CK(4195) : AC(743), Depression : CK(8817) : AC(1715), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride stimulates anxiety and depression-like behaviors.

Pubmed Data : J Agric Food Chem. 2021 Nov 17 ;69(45):13618-13627. Epub 2021 Nov 4. PMID: **34735150**

Article Published Date : Nov 16, 2021

Authors : Guoyu Zhou, Yue Hu, Anqi Wang, Meng Guo, Yuhui Du, Yongxiang Gong, Limin Ding, Zichen Feng, Xiangbo Hou, Kaihong Xu, Fangfang Yu, Zhiyuan Li, Yue Ba

Study Type : Animal Study
Additional Links
Diseases : Anxiety : CK(4195) : AC(743), Depression : CK(8817) : AC(1715), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Developmental Disorder: Children (AC 2) (CK 12)

Excessive lysosomal stress response and consequently impaired autophagy contribute to fluoride-induced developmental neurotoxicity.

Pubmed Data : Biol Trace Elem Res. 2023 Sep ;201(9):4472-4483. Epub 2022 Dec 5. PMID: **36464725**

Article Published Date : Aug 31, 2023

Authors : Wanjing Xu, Zeyu Hu, Yanling Tang, Jingjing Zhang, Shangzhi Xu, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Developmental Disorder: Children : CK(148) : AC(19), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Maternal exposure to drinking water throughout pregnancy fluoridated at the level of 0.7 mg/L was associated with poorer inhibitory control and cognitive flexibility.

Pubmed Data : Sci Total Environ. 2023 Sep 15 ;891:164322. Epub 2023 May 25. PMID: **37236475**

Article Published Date : Sep 14, 2023

Authors : Deborah Dewey, Gillian England-Mason, Henry Ntanda, Andrea J Deane, Mandakini Jain, Nadia Barnieh, Gerald F Giesbrecht, Nicole Letourneau,

Study Type : Human Study
Additional Links
Diseases : Developmental Disorder: Children : CK(148) : AC(19), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Diabetes Mellitus: Type 2 (AC 2) (CK 22)

Community water fluoridation predicts increase in age-adjusted incidence and prevalence of diabetes in 22 states from 2005 and 2010.

Pubmed Data : J Water Health. 2016 Oct ;14(5):864-877. PMID: **27740551**

Article Published Date : Sep 30, 2016

Authors : Kyle Fluegge

Study Type : Human Study
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(11728) : AC(2501), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to fluoride exacerbates the cognitive deficit of diabetic patients living in areas with endemic fluorosis.

Pubmed Data : Sci Total Environ. 2024 Feb 20 ;912:169512. Epub 2023 Dec 23. PMID: **38145685**

Article Published Date : Feb 19, 2024

Authors : Jie Xiang, Xiao-Lan Qi, Kun Cao, Long-Yan Ran, Xiao-Xiao Zeng, Xiao Xiao, Wei Liao, Wen-Wen He, Wei Hong, Yan He, Zhi-Zhong Guan

Study Type : Animal Study, Human Study
Additional Links
Diseases : Diabetes: Cognitive Dysfunction : CK(379) : AC(149), Diabetes Mellitus: Type 2 : CK(11728) : AC(2501), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Diabetes: Cognitive Dysfunction (AC 1) (CK 12)

Exposure to fluoride exacerbates the cognitive deficit of diabetic patients living in areas with endemic fluorosis.

Pubmed Data : Sci Total Environ. 2024 Feb 20 ;912:169512. Epub 2023 Dec 23. PMID: **38145685**

Article Published Date : Feb 19, 2024

Authors : Jie Xiang, Xiao-Lan Qi, Kun Cao, Long-Yan Ran, Xiao-Xiao Zeng, Xiao Xiao, Wei Liao, Wen-Wen He, Wei Hong, Yan He, Zhi-Zhong Guan

Study Type : Animal Study, Human Study
Additional Links
Diseases : Diabetes: Cognitive Dysfunction : CK(379) : AC(149), Diabetes Mellitus: Type 2 : CK(11728) : AC(2501), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Diabetic Complications (AC 1) (CK 2)

Exposure of fluoride with streptozotocin-induced diabetes aggravates testicular damage and spermatozoa parameters in mice.

Pubmed Data : J Toxicol. 2019 ;2019:5269380. Epub 2019 Dec 3. PMID: **31885555**

Article Published Date : Dec 31, 2018

Authors : Manuel Sánchez-Gutiérrez, Evelia Martínez-Loredo, Eduardo Osiris Madrigal-Santillán, Gabriel Betanzos-Cabrera, Araceli Hernández-Zavala, María Angélica Mojica-Villegas, Jeannett Alejandra Izquierdo-Vega

Study Type : Animal Study
Additional Links
Diseases : Diabetic Complications : CK(4283) : AC(1544), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Drug-Induced Nutrient Depletion: Riboflavin (B-2) (AC 1) (CK 2)

Fluoride induces immunotoxicity by regulating riboflavin transport and metabolism partly through IL-17A in the spleen.

Pubmed Data : J Hazard Mater. 2024 Sep 5 ;476:135085. Epub 2024 Jul 2. PMID: **38968825**

Article Published Date : Sep 05, 2024

Authors : Yurou Qiao, Yukun Cui, Yanjia Tan, Cuicui Zhuang, Xiang Li, Yufei Yong, Xinying Zhang, Xuting Ren, Miaomiao Cai, Jie Yang, Yilin Lang, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Drug-Induced Nutrient Depletion: Riboflavin (B-2) : CK(2) : AC(1), Low Immune Function: Chemically-Induced : CK(4) : AC(2), Mitochondrial Dysfunction : CK(618) : AC(262), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Dysbiosis (AC 3) (CK 6)

Alleviation of fluoride-induced colitis by tea polysaccharides.

Pubmed Data : J Hazard Mater. 2024 Sep 5 ;476:134858. Epub 2024 Jun 7. PMID: **38905983**

Article Published Date : Sep 05, 2024

Authors : Chenjun Zhao, Guijie Chen, Ying Huang, Yuxuan Zhang, Sichen Li, Zhiliang Jiang, Huihui Peng, Juan Wang, Daxiang Li, Ruyan Hou, Chuanyi Peng, Xiaochun Wan, Huimei Cai

Study Type : Animal Study
Additional Links
Substances : Tea : CK(4517) : AC(940)
Diseases : Colitis : CK(1495) : AC(715), Dysbiosis : CK(2010) : AC(579)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Dysbiotic : CK(2) : AC(1)

Effect of fluoride in drinking water on fecal microbial community.

Pubmed Data : Biol Trace Elem Res. 2022 Jan ;200(1):238-246. Epub 2021 Feb 12. PMID: **33576944**

Article Published Date : Dec 31, 2021

Authors : Nan Zhong, Yongzheng Ma, Xinyue Meng, Alphonse Sowanou, Liaowei Wu, Wei Huang, Yanhui Gao, Junrui Pei

Study Type : Animal Study
Additional Links
Diseases : Dysbiosis : CK(2010) : AC(579), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure cause colon microbiota dysbiosis by destroyed microenvironment and disturbed antimicrobial peptides expression in colon.

Pubmed Data : Environ Pollut. 2022 Jan 1 ;292(Pt B):118381. Epub 2021 Oct 18. PMID: **34673156**

Article Published Date : Dec 31, 2021

Authors : Shi-Quan Zhu, Jing Liu, Bo Han, Wen-Peng Zhao, Bian-Hua Zhou, Jing Zhao, Hong-Wei Wang

Study Type : Animal Study
Additional Links
Diseases : Dysbiosis : CK(2010) : AC(579), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

Dyslipidemias (AC 1) (CK 2)

Treatment with rutin against sodium fluoride intoxication has a significant role in protecting F-induced cardiotoxicity, blood toxicity and dyslipidemia in rats.

Pubmed Data : Toxicol Mech Methods. 2015 Feb ;25(2):143-9. Epub 2015 Feb 11. PMID: **25560802**

Article Published Date : Jan 31, 2015

Authors : V Umarani, Sudhakar Muvvala, A Ramesh, B V S Lakshmi, N Sravanthi

Study Type : Animal Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Dyslipidemias : CK(1583) : AC(326), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Cardioprotective : CK(8685) : AC(2877), Hypolipidemic : CK(8317) : AC(1985)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Ectopic Calcification (AC 3) (CK 22)

Effect of water fluoridation on the development of medial vascular calcification in uremic rats.

Pubmed Data : Toxicology. 2014 Apr 6 ;318:40-50. Epub 2014 Feb 18. PMID: **24561004**

Article Published Date : Apr 06, 2014

Authors : Ana Martín-Pardillos, Cecilia Sosa, Ángel Millán, Víctor Sorribas

Study Type : Animal Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Atheroma : CK(17) : AC(5), Atherosclerosis : CK(1964) : AC(771), Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Fluoride deposits in the pineal gland with age and is associated with enhanced gland calcification.

Pubmed Data : Caries Res. 2001 Mar-Apr;35(2):125-8. PMID: **11275672**

Article Published Date : Mar 01, 2001

Authors : J Luke

Study Type : Human Study
Additional Links
Diseases : Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376), Pineal Gland Calcification : CK(233) : AC(31), Pineal Gland Diseases : CK(23) : AC(5)
Problem Substances : Fluoride : CK(1815) : AC(454)

There is an association of vascular fluoride uptake with vascular calcification and coronary artery disease.

Pubmed Data : Nucl Med Commun. 2012 Jan ;33(1):14-20. PMID: **21946616**

Article Published Date : Jan 01, 2012

Authors : Yuxin Li, Gholam R Berenji, Wisam F Shaba, Bashir Tafti, Ella Yevdayev, Simin Dadparvar

Study Type : Human Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Ectopic Calcification : CK(1125) : AC(185), Vascular Calcification : CK(443) : AC(82)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Endothelial Dysfunction (AC 1) (CK 1)

This study explored the possible mechanism of fluoride induced endothelial cell injury.

Pubmed Data : Toxicology. 2023 Jun 15 ;492:153530. Epub 2023 Apr 28. PMID: **37121536**

Article Published Date : Jun 14, 2023

Authors : Chao Zhang, Yue Wang, Fengya Huang, Yaoyuan Zhang, Yunzhu Liu, Qingbo Wang, Xiaodi Zhang, Bingyun Li, Linet Angwa, Yuting Jiang, Yanhui Gao

Study Type : In Vitro Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826), Endothelial Dysfunction : CK(2710) : AC(571), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Enterococcus Infections (AC 1) (CK 1)

Theobromine though nonfluoridated toothpaste showed greater zones of inhibition than other commercially available fluoridated kid's toothpastes.

Pubmed Data : Dent Res J (Isfahan). 2019 Mar-Apr;16(2):76-80. PMID: **30820200**

Article Published Date : Feb 28, 2019

Authors : Arthi Lakshmi, C Vishnurekha, Parisa Norouzi Baghkomeh

Study Type : In Vitro Study
Additional Links
Substances : Cocoa : CK(1608) : AC(214)
Diseases : Enterococcus Infections : CK(76) : AC(62), Steptococcus Mutans Infections : CK(467) : AC(157)

Pharmacological Actions : Antimicrobial : CK(1531) : AC(781)
Additional Keywords : Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Estrogen Deficiency (AC 1) (CK 2)

Estrogen deficiency aggravates fluoride-induced small intestinal mucosa damage.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Nov ;246:114181. Epub 2022 Oct 14. PMID: **36252517**
Article Published Date : Oct 31, 2022
Authors : Ye Jin, Xiao-Ying Gao, Jing Zhao, Wei-Shun Tian, Yu-Ling Zhang, Er-Jie Tian, Bian-Hua Zhou, Hong-Wei Wang
Study Type : Animal Study
Additional Links
Diseases : Estrogen Deficiency : CK(61) : AC(21), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Female Reproductive Development Abnormalities (AC 1) (CK 2)

The administration of high concentrations of fluoride to female mice results in ovarian damage and significantly reduces the number and the fertilization potential of mature oocytes.

Pubmed Data : PLoS One. 2015 ;10(6):e0129594. Epub 2015 Jun 8. PMID: **26053026**
Article Published Date : Dec 31, 2014
Authors : Songna Yin, Chao Song, Haibo Wu, Xin Chen, Yong Zhang
Study Type : Animal Study
Additional Links
Diseases : Female Reproductive Development Abnormalities : CK(86) : AC(31), Infertility: Female : CK(741) : AC(180)
Additional Keywords : Gene Expression : CK(282) : AC(104)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fetal Origin of Adult Disease (AC 2) (CK 3)

Fluoride exposure in early life as the possible root cause of disease in later life.

Pubmed Data : J Clin Pediatr Dent. 2018 ;42(5):325-330. Epub 2018 May 15. PMID: **29763350**

Article Published Date : Dec 31, 2017

Authors : Tetsuo Nakamoto, H Ralph Rawls

Study Type : Review
Additional Links
Diseases : Fetal Origin of Adult Disease : CK(249) : AC(62), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Fluoride : CK(1815) : AC(454)

Sodium fluoride may disrupt key genetic markers in developing embryos, potentially affecting normal growth.

Pubmed Data : Arch Toxicol. 2014 Feb ;88(2):241-8. Epub 2013 Sep 13. PMID: **24030355**

Article Published Date : Feb 01, 2014

Authors : Jia-Qiao Zhu, Yang-Jun Si, Lai-Yang Cheng, Bao-Zeng Xu, Qi-Wen Wang, Xiao Zhang, Heng Wang, Zong-Ping Liu

Study Type : Animal Study
Additional Links
Diseases : Fetal Origin of Adult Disease : CK(249) : AC(62)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

Fluoride Toxicity (AC 340) (CK 1310)

A comparative evaluation of the fluoride content in commercially available infant formulae in India.

Pubmed Data : J Indian Soc Pedod Prev Dent. 2023 Oct 1 ;41(4):328-334. Epub 2024 Jan 18. PMID: **38235820**

Article Published Date : Sep 30, 2023

Authors : Asha Supriya Satti, Radhika Muppa, Ravichandra Sekhar Kotha, Srikanth Koya, Mrudhula J N Kantipudi, Ch Deepthi Siva Harika

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Infant Formula : CK(659) : AC(97), Sodium Fluoride : CK(1446) : AC(393)

A mini review of fluoride-induced apoptotic pathways.

Pubmed Data : Environ Sci Pollut Res Int. 2018 Dec ;25(34):33926-33935. Epub 2018 Oct 18. PMID: **30338467**

Article Published Date : Nov 30, 2018

Authors : Qin Wei, Huidan Deng, Hengmin Cui, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

A new insight into fluoride induces cardiotoxicity.

Pubmed Data : Toxicology. 2024 Jan ;501:153688. Epub 2023 Nov 28. PMID: **38036095**

Article Published Date : Dec 31, 2023

Authors : Lulu Hou, Haiyan Dong, Enyu Zhang, Hongmin Lu, Yue Zhang, Hongjing Zhao, Mingwei Xing

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

A relationship was identified between drinking fluoridated water from wells and the prevalence of fluorosis in individuals up to 18 years old.

Pubmed Data : Acta Odontol Latinoam. 2023 Dec 31 ;36(3):169-176. PMID: **38345279**

Article Published Date : Dec 30, 2023

Authors : Francineudo Oliveira Chagas, Lidia A Rocha Voladas, Ana Sorazabal, Adeyinka Dayo, Jhereza Cf Botelho Dantas, Aldo Squassi

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

A review of the effects of chronic fluorosis on the brain.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Oct 1 ;244:114021. Epub 2022 Aug 29. PMID: **36049331**

Article Published Date : Sep 30, 2022

Authors : Chao Ren, Hui-Hua Li, Cai-Yi Zhang, Xi-Cheng Song

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

A significant inverse relationship was found between the fluoride concentration in drinking water and IQ.

Pubmed Data : J Int Soc Prev Community Dent. 2016 Dec ;6(Suppl 3):S237-S242. PMID: **28217543**

Article Published Date : Nov 30, 2016

Authors : A Aravind, R S Dhanya, Ajay Narayan, George Sam, V J Adarsh, M Kiran

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Abnormal spermatogenesis following sodium fluoride exposure is associated with the downregulation of CREM and ACT in the mouse testis.

Pubmed Data : Toxicol Ind Health. 2018 Apr ;34(4):219-227. Epub 2018 Mar 12. PMID: **29529942**

Article Published Date : Mar 31, 2018

Authors : Chong Wang, Yan Chen, Ram Kumar Manthari, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Administration of resveratrol along with aluminum + fluoride showed significant reversal of oxidative stress and neuronal damage.

Pubmed Data : Interdiscip Toxicol. 2016 Jun ;9(2):78-82. Epub 2017 May 17. PMID: **28652849**

Article Published Date : May 31, 2016

Authors : Chandra Shakar Reddy Nalagoni, Pratap Reddy Karnati

Study Type : Animal Study
Additional Links
Substances : Resveratrol : CK(3081) : AC(1505)
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Aloe vera protects against fluoride-induced teratogenic effects during pre- and postnatal development in mice.

Pubmed Data : Environ Sci Pollut Res Int. 2022 Sep ;29(42):63577-63587. Epub 2022 Apr 23. PMID: **35460489**

Article Published Date : Aug 31, 2022

Authors : Priyanka Mathur, Shilpa Choudhary, Pradeep Bhatnagar

Study Type : Animal Study
Additional Links
Substances : Aloe Vera : CK(878) : AC(253)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Teratogenic : CK(325) : AC(66)

Alpha-lipoic acid plays a protective role in fluoride-induced reproductive lesion.

Pubmed Data : Zhonghua Yi Xue Za Zhi. 2020 Dec 15 ;100(46):3706-3711. PMID: **33342149**

Article Published Date : Dec 14, 2020

Authors : Y Yang, H Huang, L X Cui, F Q Li

Study Type : Animal Study
Additional Links
Substances : Alpha-Lipoic Acid : CK(1499) : AC(365)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Malondialdehyde Down-regulation : CK(2826) : AC(965)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Alpha-lipoic acidas a potential preventive and palliative agent for fluoride-induced hepatotoxic injury.

Pubmed Data : Chem Biol Interact. 2023 Nov 1 ;385:110719. Epub 2023 Sep 20. PMID: **37739047**

Article Published Date : Oct 31, 2023

Authors : Yanghuan Yu, Jipeng Xu, Hao Li, Jia Lv, Yaqin Zhang, Ruiyan Niu, Jundong Wang, Yangfei Zhao, Zilong Sun

Study Type : Animal Study
Additional Links
Substances : Alpha-Lipoic Acid : CK(1499) : AC(365)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Aluminium, fluoride and a combination of aluminium-fluoride treatments caused an increase in brain lipid peroxidation products and reactive oxygen species formation.

Pubmed Data : Pathophysiology. 2015 Mar ;22(1):39-48. Epub 2014 Dec 13. PMID: **25577494**

Article Published Date : Feb 28, 2015

Authors : Ibukun Dorcas Akinrinade, Adejoke Elizabeth Memudu, Olalekan Michael Ogundele, Olanrewaju Ibrahim Ajetunmobi

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Increased Risk : CK(8492) : AC(1109), Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Ameliorative effects of nano Moringa on fluoride-induced testicular damage via down regulation of the StAR gene and altered steroid hormones.

Pubmed Data : Reprod Biol. 2022 Dec 21 ;23(1):100724. Epub 2022 Dec 21. PMID: **36563520**

Article Published Date : Dec 21, 2022

Authors : Entsar R Abd-Allah, Heba Ali Abd El-Rahman

Study Type : Animal Study
Additional Links
Substances : Moringa oleifera : CK(748) : AC(377)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Low Testosterone : CK(852) : AC(140), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Fluoride : CK(1815) : AC(454)

Amla exhibits antihyperglycemic and hepato-renal protective properties in fluoride induced toxicity.

Pubmed Data : J Pharm Bioallied Sci. 2012 Jul ;4(3):250-4. PMID: **22923969**

Article Published Date : Jul 01, 2012

Authors : Rupal A Vasant, A V R L Narasimhacharya

Study Type : Animal Study
Additional Links
Substances : Amla Fruit : CK(265) : AC(94)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Hepatoprotective : CK(8320) : AC(3765), Hypoglycemic Agents : CK(8194) : AC(2019), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Fluoride : CK(1815) : AC(454)

An intervention with safe drinking water for 5 years in intervention group-mitigated clinical and subclinical symptoms of fluorosis.

Pubmed Data : Environ Monit Assess. 2018 Feb 2 ;190(3):110. Epub 2018 Feb 2. PMID: **29396763**

Article Published Date : Feb 01, 2018

Authors : Arjun L Khandare, Vakdevi Validandi, Shankar Rao Gourineni, Viswanathan Gopalan, Balakrishna Nagalla

Study Type : Human Study
Additional Links
Substances : Water : CK(209) : AC(47)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

An interventional clinical trial investigating the effects of Spirulina platensis on dental fluorosis and antioxidant system.

Pubmed Data : Sci Rep. 2023 Oct 6 ;13(1):16858. Epub 2023 Oct 6. PMID: **37803131**

Article Published Date : Oct 05, 2023

Authors : Abdellatif Rahim, Mounia Sibaoueih, Adekhalid Essamadi, Bouchra El Amiri

Study Type : Animal Study
Additional Links
Substances : Spirulina : CK(1017) : AC(292)
Diseases : Spirulina : CK(1017) : AC(292), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Apoptosis and inflammation involved with fluoride-induced bone injuries.

Pubmed Data : Nutrients. 2024 Jul 31 ;16(15). Epub 2024 Jul 31. PMID: **39125380**

Article Published Date : Jul 30, 2024

Authors : Miao Wang, Kangting Luo, Tongtong Sha, Qian Li, Zaichao Dong, Yanjie Dou, Huanxia Zhang, Guoyu Zhou, Yue Ba, Fangfang Yu

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Arsenic and fluoride co-exposure affects the expression of apoptotic and inflammatory genes and proteins in mononuclear cells from children.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2014 Feb ;761:27-34. Epub 2014 Jan 21. PMID: **24456662**

Article Published Date : Jan 31, 2014

Authors : B L Estrada-Capetillo, M D Ortiz-Pérez, M Salgado-Bustamante, E Calderón-Aranda, C J Rodríguez-Pinal, E Reynaga-Hernández, N E Corral-Fernández, R González-Amaro, D P Portales-Pérez

Study Type : Human In Vitro, Human Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Arsenic and fluoride exposure in drinking water caused human health risk in coastal groundwater aquifers.

Pubmed Data : Environ Res. 2023 Dec 1 ;238(Pt 2):117257. Epub 2023 Sep 28. PMID: **37775015**

Article Published Date : Nov 30, 2023

Authors : Tanmoy Biswas, Subodh Chandra Pal, Asish Saha, Dipankar Ruidas

Study Type : Environmental
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Arsenic-fluoride co-exposure induced endoplasmic reticulum stress resulting in apoptosis in rat heart and H9c2 cells.

Pubmed Data : Chemosphere. 2022 Feb ;288(Pt 2):132518. Epub 2021 Oct 9. PMID: **34637859**

Article Published Date : Jan 31, 2022

Authors : Meng Li, Jing Feng, Ying Cheng, Nisha Dong, Xiaolin Tian, Penghui Liu, Yannan Zhao, Yulan Qiu, Fengjie Tian, Yi Lyu, Qian Zhao, Cailing Wei, Meng Wang, Jiyu Yuan, Xiaodong Ying, Xuefeng Ren, Xiaoyan Yan

Study Type : In Vitro Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209)

Association between dental fluorosis prevalence and inflammation levels in school-aged children with low-to-moderate fluoride exposure.

Pubmed Data : Environ Pollut. 2023 Mar 1 ;320:120995. Epub 2023 Jan 2. PMID: **36603756**

Article Published Date : Feb 28, 2023

Authors : Huayang Tang, Mengru Wang, Gaochun Li, Mengwei Wang, Chen Luo, Guoyu Zhou, Qian Zhao, Lixin Dong, Hongliang Liu, Yushan Cui, Li Liu, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : C-Reactive Protein : CK(3920) : AC(389), C-Reactive Protein : CK(3920) : AC(389), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Association between low fluoride exposure and children's intelligence.

Pubmed Data : Public Health. 2023 Jun ;219:73-84. Epub 2023 Apr 28. PMID: **37120936**

Article Published Date : May 31, 2023

Authors : Jayanth V Kumar, Mark E Moss, Honghu Liu, Susan Fisher-Owens

Study Type : Meta Analysis
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Astaxanthin decreases spatial memory and glutamate transport impairment induced by fluoride.

Pubmed Data : Iran J Pharm Res. 2021 ;20(4):238-254. PMID: **35194443**

Article Published Date : Dec 31, 2020

Authors : Farzaneh Mirsaeed-Ghazi, Mohammad Sharifzadeh, Mohammad Reza Ashrafi-Kooshk, Saeed Karima, Sogol Meknatkhah, Gholamhossein Riazi, Farzad Mokhtari

Study Type : In Vitro Study
Additional Links
Substances : Astaxanthin : CK(1627) : AC(648)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Fluoride : CK(1815) : AC(454)

Autophagy may be involved in fluoride-induced learning impairment in rats.

Pubmed Data : Biol Trace Elem Res. 2020 Feb ;193(2):502-507. Epub 2019 May 20. PMID: **31111310**

Article Published Date : Jan 31, 2020

Authors : Chengzhi Zhang, Simeng Huo, Yumei Fan, Yanhui Gao, Yanmei Yang, Dianjun Sun

Study Type : Animal Study

Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Blackberry juice and quercetin together significantly reduced sodium fluoride induced oxidative and histological changes in rats.

Pubmed Data : J Basic Clin Physiol Pharmacol. 2015 May 1 ;26(3):237-51. PMID: **25918918**

Article Published Date : Apr 30, 2015

Authors : Reham Z Hamza, Nahla S El-Shenawy, Hayat A A Ismail

Study Type : Animal Study
Additional Links
Substances : Blackberry : CK(120) : AC(64), Quercetin : CK(1864) : AC(847)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Cytoprotective : CK(797) : AC(393), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Natural Substance Synergy : CK(1339) : AC(657)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Caffeic acid supplementation has a protective effect against fluoride induced hepatotoxicity in rats.

Pubmed Data : Biofactors. 2015 Mar-Apr;41(2):90-100. Epub 2015 Apr 2. PMID: **25845575**

Article Published Date : Feb 28, 2015

Authors : Vishnu Vignesh Kanagaraj, Lakshmikanthan Panneerselvam, Vimal Govindarajan, Jaishabanu Ameeramja, Ekambaram Perumal

Study Type : Animal Study
Additional Links
Substances : Caffeic Acid : CK(136) : AC(87), Coffee : CK(1649) : AC(207)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Calcium alleviates fluoride-induced kidney damage.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Dec 15 ;226:112851. Epub 2021 Oct 4. PMID: **34619480**

Article Published Date : Dec 14, 2021

Authors : Haojie Li, Junjiang Fan, Yangfei Zhao, Jiarong Yang, Huimiao Xu, Ram Kumar Manthari, Xiaofang Cheng, Jundong Wang, Jinming Wang

Study Type : Animal Study
Additional Links
Substances : Calcium : CK(444) : AC(68)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Renoprotective : CK(4133) : AC(1932), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Calcium and vitamin D supplementation effectively alleviates dental and skeletal fluorosis and retain elemental homeostasis in mice.

Pubmed Data : Biol Trace Elem Res. 2021 Aug ;199(8):3035-3044. Epub 2020 Oct 14. PMID: **33057951**

Article Published Date : Jul 31, 2021

Authors : Arpan Dey Bhowmik, Pallab Shaw, Paritosh Mondal, Anindita Chakraborty, Muthammal Sudarshan, Ansuman Chattopadhyay

Study Type : Animal Study

Additional Links
Substances : Calcium : CK(444) : AC(68), Vitamin D : CK(11555) : AC(1679)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Calcium supplementation attenuates fluoride-induced bone injury.

Pubmed Data : J Hazard Mater. 2024 Mar 5 ;465:133411. Epub 2024 Jan 2. PMID: **38181596**

Article Published Date : Mar 04, 2024

Authors : Yingjun Hu, Yuanyuan Li, Meng Li, Tianrui Zhao, Wenhui Zhang, Yinghui Wang, Yang He, Hui Zhao, Haojie Li, Tianyu Wang, Yangfei Zhao, Jundong Wang, Jinming Wang

Study Type : Animal Study
Additional Links
Substances : Calcium : CK(444) : AC(68)
Diseases : Bone Diseases : CK(325) : AC(101), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Osteogenic : CK(171) : AC(67)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Cell cycle arrest and gene expression profiling of testis in mice exposed to fluoride.

Pubmed Data : Environ Toxicol. 2017 May ;32(5):1558-1565. Epub 2016 Nov 14. PMID: **27862939**

Article Published Date : Apr 30, 2017

Authors : Kai Su, Zilong Sun, Ruiyan Niu, Ying Lei, Jing Cheng, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Children in endemic areas of fluorosis are at risk for impaired development of intelligence.

Pubmed Data : J Neurosci Rural Pract. 2012 May ;3(2):144-9. PMID: **22865964**

Article Published Date : Apr 30, 2012

Authors : Sudhanshu Saxena, Anjali Sahay, Pankaj Goel

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Children residing in areas with higher than normal water fluoride levels demonstrated more impaired development of intelligence.

Pubmed Data : J Dent (Tehran). 2012 ;9(3):221-9. Epub 2012 Sep 30. PMID: **23119131**

Article Published Date : Dec 31, 2011

Authors : B Seraj, M Shahrabi, M Shadfar, R Ahmadi, M Fallahzadeh, H Farrokh Eslamlu, M J Kharazifard

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children with a low BMI may be more vulnerable to dental fluorosis.

Pubmed Data : Front Oral Health. 2023 ;4:1187463. Epub 2023 Jun 12. PMID: **37377524**

Article Published Date : Dec 31, 2022

Authors : Maria Esther Irigoyen-Camacho, Nora Perez-Perez, Marco Antonio Zepeda-Zepeda, Maria Consuelo Velazquez-Alva, Antonio Castaño-Seiquer, Ignacio Barbero-Navarro, Leonor Sanchez-Perez

Study Type : Human Study
Additional Links
Diseases : , Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Children with fluorosis in coal-burning areas had impaired IQ and obviously had impaired verbal intelligence quotient.

Pubmed Data : Biol Trace Elem Res. 2021 Feb ;199(2):482-489. Epub 2020 May 3. PMID: **32363519**

Article Published Date : Jan 31, 2021

Authors : Didong Lou, Yan Luo, Jing Liu, Dan Zheng, Rongrong Ma, Fangping Chen, Yanni Yu, Zhizhong Guan

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic excess fluoride uptake contributes to degenerative joint disease.

Pubmed Data : Ecotoxicol Environ Saf. 2018 Oct 30 ;162:383-390. Epub 2018 Jul 13. PMID: **30015183**

Article Published Date : Oct 29, 2018

Authors : Clare Death, Graeme Coulson, Uwe Kierdorf, Horst Kierdorf, Richard Ploeg, Simon Firestone, Ian Dohoo, Jasmin Hufschmid

Study Type : Animal Study
Additional Links
Diseases : Degenerative Joint Disease : CK(5) : AC(3), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Fluoride : CK(1815) : AC(454)

Chronic exposure to high levels of fluoride in water was observed to be associated with lower intelligence quotient.

Pubmed Data : Iran J Public Health. 2013 Aug ;42(8):813-8. PMID: **26056634**

Article Published Date : Jul 31, 2013

Authors : Ramesh Nagarajappa, Piyush Pujara, Archana J Sharda, Kailash Asawa, Mridula Tak, Pankaj Aapaliya, Nikhil Bhanushali

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic fluoride exposure induces neuronal apoptosis and impairs neurogenesis and synaptic plasticity.

Pubmed Data : Chemosphere. 2019 Jan ;214:430-435. Epub 2018 Sep 17. PMID: **30273876**

Article Published Date : Dec 31, 2018

Authors : Pei Jiang, Gongying Li, Xueyuan Zhou, Changshui Wang, Yi Qiao, Dehua Liao, Dongmei Shi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Chronic fluoride exposure induces ovarian dysfunction and potential association with premature ovarian failure.

Pubmed Data : Biol Trace Elem Res. 2023 Oct 13. Epub 2023 Oct 13. PMID: **37828391**

Article Published Date : Oct 12, 2023

Authors : Xiaoke Tang, Hongjuan Li, Yali Wang, Li Zeng, Ling Long, Yajun Qu, Hui Yang, Xiaolin Zhang, Yanmin Li, Yanni Yu, Qi Zhou, Man Luo

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Ovarian Diseases : CK(33) : AC(16)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Circulating levels of autophagy markers were low in children with higher fluoride body burden and lower intelligence quotient scores.

Pubmed Data : Toxicol Appl Pharmacol. 2019 Sep 1 ;378:114608. Epub 2019 Jun 5. PMID: **31173788**

Article Published Date : Aug 31, 2019

Authors : Guoyu Zhou, Sha Tang, Lu Yang, Qiang Niu, Jingwen Chen, Tao Xia, Sumei Wang, Mengwei Wang, Qian Zhao, Ling Liu, Pei Li, Lixin Dong, Kedi Yang, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Co-exposure to arsenic-fluoride results in endoplasmic reticulum stress-induced apoptosis through the PERK signaling pathway in the liver of offspring rats.

Pubmed Data : Biol Trace Elem Res. 2020 Sep ;197(1):192-201. Epub 2019 Nov 25. PMID: **31768761**

Article Published Date : Aug 31, 2020

Authors : Nisha Dong, Jing Feng, Jiaxin Xie, Xiaolin Tian, Meng Li, Penghui Liu, Yannan Zhao, Cailing Wei, Yi Gao, Ben Li, Yulan Qiu, Xiaoyan Yan

Study Type : Animal Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Cognitive alterations in children born from exposed mothers to F could start in early prenatal stages of life.

Pubmed Data : Neurotoxicology. 2017 Mar ;59:65-70. Epub 2017 Jan 8. PMID: **28077305**

Article Published Date : Feb 28, 2017

Authors : L Valdez Jiménez, O D López Guzmán, M Cervantes Flores, R Costilla-Salazar, J Calderón Hernández, Y Alcaraz Contreras, D O Rocha-Amador

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Cognitive decline of rats with chronic fluorosis is associated with

alterations in hippocampal calpain signaling.

Pubmed Data : Biol Trace Elem Res. 2020 Oct ;197(2):495-506. Epub 2019 Dec 3. PMID: **31797207**

Article Published Date : Sep 30, 2020

Authors : Olga V Nadei, Irina A Khvorova, Natalia I Agalakova

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Combination of fluoride and SO2 induce DNA damage and morphological alterations in male rat kidney.

Pubmed Data : Cell Physiol Biochem. 2018 ;50(2):734-744. Epub 2018 Oct 11. PMID: **30308495**

Article Published Date : Dec 31, 2017

Authors : Yan Gao, Chen Liang, Jianhai Zhang, Junjie Ma, Jinming Wang, Ruiyan Niu, Chiranjeevi Tikka, Yewei Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Air Pollution Linked Toxicity : CK(4951) : AC(731), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Combined effect of arsenic and fluoride at environmentally relevant concentrations in zebrafish (Danio rerio) brain.

Pubmed Data : Chemosphere. 2021 Apr ;269:128678. Epub 2020 Oct 21. PMID: **33127104**

Article Published Date : Mar 31, 2021

Authors : Paritosh Mondal, Pallab Shaw, Arpan Dey Bhowmik, Arindam Bandyopadhyay, Muthammal Sudarshan, Anindita Chakraborty, Ansuman Chattopadhyay

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Combined effects of fluoride and arsenic on mitochondrial function in the liver.

Pubmed Data : Appl Biochem Biotechnol. 2023 Mar 22. Epub 2023 Mar 22. PMID: **36947368**

Article Published Date : Mar 21, 2023

Authors : Huma Khan, Yeshvandra Verma, S V S Rana

Study Type : Animal Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Community water fluoridation and rate of pediatric fractures.

Pubmed Data : J Am Acad Orthop Surg Glob Res Rev. 2023 Oct 1 ;7(10). Epub 2023 Oct 5. PMID: **37796978**

Article Published Date : Sep 30, 2023

Authors : Sarah E Lindsay, Spencer Smith, Scott Yang, Jung Yoo

Study Type : Human Study
Additional Links
Diseases : Bone Fractures : CK(697) : AC(121), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Community water fluoridation predicts increase in age-adjusted incidence and prevalence of diabetes in 22 states from 2005 and 2010.

Pubmed Data : J Water Health. 2016 Oct ;14(5):864-877. PMID: **27740551**

Article Published Date : Sep 30, 2016

Authors : Kyle Fluegge

Study Type : Human Study
Additional Links
Diseases : Diabetes Mellitus: Type 2 : CK(11728) : AC(2501), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Concentration of Fluoride in the ingested water was significantly associated with the IQ of children.

Pubmed Data : J Int Soc Prev Community Dent. 2017 ;7(5):252-258. Epub 2017 Sep 18. PMID: **29026697**

Article Published Date : Dec 31, 2016

Authors : Priyanka Razdan, Basavaraj Patthi, Jishnu Krishna Kumar, Nikhil Agnihotri, Prajakta Chaudhari, Monika Prasad

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Curcumin attenuates neurotoxicity induced by fluoride: An in vivo evidence.

Pubmed Data : Pharmacogn Mag. 2014 Jan ;10(37):61-5. PMID: **24696547**

Article Published Date : Dec 31, 2013

Authors : Chhavi Sharma, Pooja Suhalka, Piyu Sukhwal, Neha Jaiswal, Maheep Bhatnagar

Study Type : Animal Study
Additional Links
Substances : Curcumin : CK(6902) : AC(3215)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Curcumin showed significant nephroprotective effects against Sodium Fluoride induced toxicity upon kidneys.

Pubmed Data : Biol Trace Elem Res. 2012 Mar ;145(3):369-74. Epub 2011 Sep 7. PMID: **21901432**

Article Published Date : Mar 01, 2012

Authors : Seyed Fazel Nabavi, Akbar Hajizadeh Moghaddam, Shahram Eslami, Seyed Mohammad Nabavi

Study Type : Animal Study
Additional Links
Substances : Curcumin : CK(6902) : AC(3215), Vitamin C : CK(6030) : AC(1400)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Antioxidant : CK(17) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Decreased learning ability and low hippocampus glutamate in offspring rats exposed to fluoride and lead.

Pubmed Data : Environ Toxicol Pharmacol. 2009 Sep ;28(2):254-8. Epub 2009 May 4. PMID: **21784012**

Article Published Date : Aug 31, 2009

Authors : Ruiyan Niu, Zilong Sun, Zhantao Cheng, Zhigang Li, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Lead : CK(684) : AC(227), Sodium Fluoride : CK(1446) : AC(393)

Dental fluorosis and urinary fluoride concentration as a reflection of fluoride exposure and its impact on IQ level and BMI of children.

Pubmed Data : Environ Monit Assess. 2016 Apr ;188(4):218. Epub 2016 Mar 9. PMID: **26960765**

Article Published Date : Mar 31, 2016

Authors : Kousik Das, Naba Kumar Mondal

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Detrimental effects of sodium fluoride on the expression of insulin receptor in the olfactory bulb and hippocampus of male mice.

Pubmed Data : Biol Trace Elem Res. 2020 Nov ;198(1):216-223. Epub 2020 Feb 3. PMID: **32016826**

Article Published Date : Oct 31, 2020

Authors : Jianqin Yuan, Qi Li, Mohammad Mehdi Ommati, Ruiyan Niu, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Development of nonverbal abilities in males may be more vulnerable to prenatal fluoride exposure than language or motor abilities, even at levels within the recommended intake range.

Pubmed Data : Neurotoxicology. 2021 Dec ;87:86-93. Epub 2021 Aug 31. PMID: **34478773**

Article Published Date : Nov 30, 2021

Authors : Alejandra Cantoral, Martha M Téllez-Rojo, Ashley J Malin, Lourdes Schnaas, Erika Osorio-Valencia, Adriana Mercado, EÁngeles Martínez-Mier, Robert O Wright, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Developmental fluoride neurotoxicity: an updated review.

Pubmed Data : Environ Health. 2019 Dec 19 ;18(1):110. Epub 2019 Dec 19. PMID: **31856837**

Article Published Date : Dec 18, 2019

Authors : Philippe Grandjean

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Different effects of fluoride exposure on the three major bone cell types.

Pubmed Data : Biol Trace Elem Res. 2020 Jan ;193(1):226-233. Epub 2019 Mar 14. PMID: **30877522**

Article Published Date : Dec 31, 2019

Authors : Ningning Jiang, Fengyang Guo, Boyao Sun, Xiuyun Zhang, Hui Xu

Study Type : In Vitro Study
Additional Links
Diseases : Bone Diseases : CK(325) : AC(101), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Does fluoride exposure impact on the human microbiome?

Pubmed Data : Toxicol Lett. 2023 Apr 15 ;379:11-19. Epub 2023 Mar 4. PMID: **36871794**

Article Published Date : Apr 14, 2023

Authors : Gary P Moran, Lina Zgaga, Blánaid Daly, Mairead Harding, Therese Montgomery

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

Domain-specific effects of prenatal fluoride exposure on child IQ at 4, 5, and 6-12 years.

Pubmed Data : Environ Res. 2022 Aug ;211:112993. Epub 2022 Mar 9. PMID: **35276192**

Article Published Date : Jul 31, 2022

Authors : Carly V Goodman, Morteza Bashash, Rivka Green, Peter Song, Karen E Peterson, Lourdes Schnaas, Adriana Mercado-García, Sandra Martínez-Medina, Mauricio Hernández-Avila, Angeles Martinez-Mier, Martha M Téllez-Rojo, Howard Hu, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodevelopmental Disorders : CK(470) : AC(85), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Dopamine receptor D2 gene polymorphism, urine fluoride, and intelligence impairment of children in China.

Pubmed Data : Ecotoxicol Environ Saf. 2018 Dec 15 ;165:270-277. Epub 2018 Sep 8. PMID: **30205328**

Article Published Date : Dec 14, 2018

Authors : Yushan Cui, Bin Zhang, Jing Ma, Yang Wang, Liang Zhao, Changchun Hou, Jingwen Yu, Yang Zhao, Zushan Zhang, Junyan Nie, Tongning Gao, Guoli Zhou, Hongliang Liu

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Dopamine relative genes may modify the association between fluoride and intelligence,

Pubmed Data : Ecotoxicol Environ Saf. 2021 Feb ;209:111826. Epub 2020 Dec 24. PMID: **33360592**

Article Published Date : Jan 31, 2021

Authors : Liang Zhao, Canqing Yu, Jun Lv, Yushan Cui, Yang Wang, Changchun Hou, Jingwen Yu, Baihui Guo, Hongliang Liu, Liming Li

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Genomic Variation : CK(302) : AC(38)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Dose and time-dependent effects of sodium fluoride on sperm motility.

Pubmed Data : Toxicol Ind Health. 2018 Dec ;34(12):813-818. Epub 2018 Oct 25. PMID: **30360691**

Article Published Date : Nov 30, 2018

Authors : Basavalingappa Chaithra, Halugudde Nagaraja Sarjan, Shivabasavaiah

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Due to the ability of fluoride to inhibit the production of thyroid hormones, a transition to low exposure may result in hyperthyroidism associated psychosis.

Pubmed Data : Med Hypotheses. 2009 May;72(5):501-3. Epub 2009 Feb 7. PMID: **19201548**

Article Published Date : May 01, 2009

Authors : Karl Erik Zachariassen, Trond Peder Flaten

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148)
Problem Substances : Fluoride : CK(1815) : AC(454)

EGb-761 could attenuate the anti-proliferative activity of fluoride via DDK1 in PC-12 cells.

Pubmed Data : Neurochem Res. 2017 Feb ;42(2):606-614. Epub 2016 Nov 25. PMID: **27885578**

Article Published Date : Jan 31, 2017

Authors : Cai-Yi Zhang, Rui Chen, Fen Wang, Chao Ren, Peng Zhang, Qian Li, Hui-Hua Li, Ke-Tai Guo, De-Qin Geng, Chun-Feng Liu

Study Type : In Vitro Study
Additional Links
Substances : Ginkgo biloba : CK(2025) : AC(644)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Additional Keywords : Plant Extracts : CK(18030) : AC(6728)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Early exposure to fluoride may have neurotoxic effects on neurodevelopment affecting behavioral, cognitive and psychosomatic symptoms related to ADHD diagnosis.

Pubmed Data : Medicina (Kaunas). 2023 Apr 19 ;59(4). Epub 2023 Apr 19. PMID: **37109754**

Article Published Date : Apr 18, 2023

Authors : Gianluca Fiore, Federica Veneri, Rosaria Di Lorenzo, Luigi Generali, Marco Vinceti, Tommaso Filippini

Study Type : Review
Additional Links
Diseases : Attention Deficit Disorder with Hyperactivity : CK(633) : AC(84), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effect of fluoride exposure on different immune parameters in humans.

Pubmed Data : Immunopharmacol Immunotoxicol. 2011 Mar ;33(1):169-77. Epub 2010 Jun 10. PMID: **20536340**

Article Published Date : Feb 28, 2011

Authors : Berenice Hernández-Castro, Mónica Vigna-Pérez, Lesly Doníz-Padilla, María D Ortiz-Pérez, Esther Jiménez-Capdeville, Roberto González-Amaro, Lourdes Baranda

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Effect of fluoride exposure on mRNA expression of cav1.2 and calcium signal pathway apoptosis regulators in PC12 cells.

Pubmed Data : Environ Toxicol Pharmacol. 2017 Sep ;54:74-79. Epub 2017 Jun 30. PMID: **28697452**

Article Published Date : Aug 31, 2017

Authors : Qiuxia Liao, Rui Zhang, Xiaoyu Wang, Weiwei Nian, Lulu Ke, Wei Ouyang, Zigui Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Effect of fluoride in drinking water on fecal microbial community.

Pubmed Data : Biol Trace Elem Res. 2022 Jan ;200(1):238-246. Epub 2021 Feb 12. PMID: **33576944**

Article Published Date : Dec 31, 2021

Authors : Nan Zhong, Yongzheng Ma, Xinyue Meng, Alphonse Sowanou, Liaowei Wu, Wei Huang, Yanhui Gao, Junrui Pei

Study Type : Animal Study
Additional Links
Diseases : Dysbiosis : CK(2010) : AC(579), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effect of fluoride on bone and growth plate cartilage.

Pubmed Data : J Environ Sci Health C Toxicol Carcinog. 2021 ;39(4):388-399. Epub 2021 Aug 23. PMID: **35895945**

Article Published Date : Dec 31, 2020

Authors : Mercedes Lombarte, Brenda L Fina, Lucas R Brun, Stella Maris Roma, Alfredo Rigalli, Di Loreto V E

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effect of fluoride on cytotoxicity involved in mitochondrial dysfunction.

Pubmed Data : Front Vet Sci. 2022 ;9:850771. Epub 2022 Apr 19. PMID: **35518640**

Article Published Date : Dec 31, 2021

Authors : Mingbang Wei, Yourong Ye, Muhammad Muddassir Ali, Yangzom Chamba, Jia Tang, Peng Shang

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effect of fluoride on endocrine tissues and their secretory functions.

Pubmed Data : Chemosphere. 2020 Dec ;260:127565. Epub 2020 Jul 9. PMID: **32758781**

Article Published Date : Nov 30, 2020

Authors : Marta Skórka-Majewicz, Marta Goschorska, Wojciech Żwierełło, Irena Baranowska-Bosiacka, Daniel Styburski, Patrycja Kapczuk, Izabela Gutowska

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Endocrine Disruptors : CK(24) : AC(15), Sodium Fluoride : CK(1446) : AC(393)

Effect of hesperidin on fluoride-induced neurobehavioral and biochemical changes in rats.

Pubmed Data : J Biochem Mol Toxicol. 2020 Nov ;34(11):e22575. Epub 2020 Jul 5. PMID: **32627286**

Article Published Date : Oct 31, 2020

Authors : Pawan Jaiswal, Mukesh Mandal, Awanish Mishra

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effect of sodium fluoride on reproductive function through regulating reproductive hormone level.

Pubmed Data : Biol Trace Elem Res. 2023 Apr ;201(4):1825-1836. Epub 2022 May 10. PMID: **35538195**

Article Published Date : Mar 31, 2023

Authors : Siyuan Dong, Yanni Yang, Biqi He, Zhao Xu, Zhaoqiang Zhou, Jinhai Wang, Chen Chen, Qun Chen

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effect of sodium fluoride on the murine splenic immune response to Porphyromonas gingivalis in vitro.

Pubmed Data : Immunopharmacol Immunotoxicol. 2003 Feb ;25(1):123-7. PMID: **12675204**

Article Published Date : Jan 31, 2003

Authors : Wihaskoro Sosroseno

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Porphyromonas gingivalis : CK(46) : AC(41)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effect of water fluoridation on the development of medial vascular calcification in uremic rats.

Pubmed Data : Toxicology. 2014 Apr 6 ;318:40-50. Epub 2014 Feb 18. PMID: **24561004**

Article Published Date : Apr 06, 2014

Authors : Ana Martín-Pardillos, Cecilia Sosa, Ángel Millán, Víctor Sorribas

Study Type : Animal Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Atheroma : CK(17) : AC(5), Atherosclerosis : CK(1964) : AC(771), Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Effects of fluoride exposure on mitochondrial function: Energy metabolism, dynamics, biogenesis and mitophagy.

Pubmed Data : Environ Toxicol Pharmacol. 2022 Aug ;94:103916. Epub 2022 Jun 20. PMID: **35738460**

Article Published Date : Jul 31, 2022

Authors : Sabino Hazael Avila-Rojas, Omar Emiliano Aparicio-Trejo, Marco Antonio Sanchez-Guerra, Olivier Christophe Barbier

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effects of fluoride on DNA damage and caspase-mediated apoptosis in the liver of rats.

Pubmed Data : Biol Trace Elem Res. 2015 Aug ;166(2):173-82. Epub 2015 Feb 20. PMID: **25693680**

Article Published Date : Jul 31, 2015

Authors : Guo Hua Song, Fu Bing Huang, Ji Ping Gao, Mao Lin Liu, Wen Biao Pang, Wei bin Li, Xiao Yan Yan, Mei Jun Huo, Xia Yang

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Effects of fluoride on PIWI-interacting RNA expression profiling in testis of mice.

Pubmed Data : Chemosphere. 2021 Apr ;269:128727. Epub 2020 Oct 24. PMID: **33213873**

Article Published Date : Mar 31, 2021

Authors : Yanyan Li, Min Cheng, Yangfei Zhao, Jinming Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effects of fluoride on synapse morphology and myelin damage in mouse hippocampus.

Pubmed Data : Chemosphere. 2018 Mar ;194:628-633. Epub 2017 Dec 6. PMID: **29241138**

Article Published Date : Feb 28, 2018

Authors : Ruiyan Niu, Huijuan Chen, Ram Kumar Manthari, Zilong Sun, Jinming Wang, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effects of fluoride toxicity on female reproductive system of mammals.

Pubmed Data : Biol Trace Elem Res. 2024 May 6. Epub 2024 May 6. PMID: **38709367**

Article Published Date : May 05, 2024

Authors : Aditi Fishta, Ruhi Thakur, Krishan Chander Sharma, Neha Thakur, Bhavna Patial

Study Type : Meta Analysis
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effects of prolonged fluoride exposure on innate immunity, intestinal mechanical, and immune barriers in mice.

Pubmed Data : Res Vet Sci. 2023 Nov ;164:105019. Epub 2023 Sep 14. PMID: **37729784**

Article Published Date : Oct 31, 2023

Authors : Yan Wang, Jing Xu, Hang Chen, Yuanbin Shu, Weiqi Peng, Chunxiao Lai, Ruiyang Kong, Ruiyang Lan, Lijing Huang, Jinge Xin, Ning Sun, Xueqin Ni, Yang Bai, Bangyuan Wu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Effects of water fluoridation on early embryonic development of zebrafish.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Jan 15 ;270:115907. Epub 2024 Jan 4. PMID: **38176185**

Article Published Date : Jan 14, 2024

Authors : Ya-Lan Wei, Xin-Chen Lin, Ying-Ying Liu, Yu-Qing Lei, Xu-Dong Zhuang, Hai-Tao Zhang, Xin-Rui Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Embryotoxic : CK(20) : AC(11)

Elevated serum fluoride levels in perimenopausal women are related to the components of metabolic syndrome.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2021 Sep ;25(17):5474-5482. PMID: **34533791**

Article Published Date : Aug 31, 2021

Authors : D Schneider-Matyka, I Gutowska, M Panczyk, E Grochans, M Szkup

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypertension : CK(8603) : AC(1329), Metabolic Diseases : CK(1252) : AC(263)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Emodin protected against synaptic impairment and oxidative stress induced by fluoride in SH-SY5Y cells.

Pubmed Data : Environ Toxicol. 2020 Sep ;35(9):922-929. Epub 2020 Apr 15. PMID: **32293791**

Article Published Date : Aug 31, 2020

Authors : Chencen Lai, Qian Chen, Yuanting Ding, Heng Liu, Zhi Tang

Study Type : In Vitro Study
Additional Links
Substances : Emodin : CK(405) : AC(258)
Diseases : Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Estrogen deficiency aggravates fluoride-induced small intestinal mucosa damage.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Nov ;246:114181. Epub 2022 Oct 14. PMID: **36252517**

Article Published Date : Oct 31, 2022

Authors : Ye Jin, Xiao-Ying Gao, Jing Zhao, Wei-Shun Tian, Yu-Ling Zhang, Er-Jie Tian, Bian-Hua Zhou, Hong-Wei Wang

Study Type : Animal Study
Additional Links
Diseases : Estrogen Deficiency : CK(61) : AC(21), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Evaluation of kidney injury biomarkers in an adult Mexican population environmentally exposed to fluoride and low arsenic levels.

Pubmed Data : Toxicol Appl Pharmacol. 2018 Aug 1 ;352:97-106. Epub 2018 May 22. PMID: **29800643**

Article Published Date : Jul 31, 2018

Authors : Monica I Jiménez-Córdova, Mariana Cárdenas-González, Guadalupe Aguilar-Madrid, Luz C Sanchez-Peña, Ángel Barrera-Hernández, Iván A Domínguez-Guerrero, Carmen González-Horta, Olivier C Barbier, Luz M Del Razo

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Renotoxic : CK(56) : AC(20)

Excess fluoride in drinking water and in the locally grown food in the affected areas might lead to chronic kidney diseases.

Pubmed Data : Environ Health Prev Med. 2015 Jul ;20(4):237-42. Epub 2015 Apr 28. PMID: **25916575**

Article Published Date : Jun 30, 2015

Authors : Ranjith W Dharmaratne

Study Type : Commentary
Additional Links
Diseases : Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage : CK(780) : AC(347)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Excessive amounts of fluoride cause autophagy of HAT-7 cells, indicating that autophagy is involved in dental fluorosis.

Pubmed Data : Cells Tissues Organs. 2015 Nov 13 ;200(6):405-412. Epub 2015 Nov 13. PMID: **26562167**

Article Published Date : Nov 12, 2015

Authors : Shuang Lei, Ying Zhang, Kaiqiang Zhang, Jian Li, Lu Liu

Study Type : In Vitro Study
Additional Links

Diseases : , Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Excessive exposure of water fluoride may increase osteoarthritis risk.

Pubmed Data : Biol Trace Elem Res. 2022 Jul ;200(7):3107-3116. Epub 2021 Sep 28. PMID: **34581970**

Article Published Date : Jun 30, 2022

Authors : Alphonse Sowanou, Xinyue Meng, Nan Zhong, Yongzheng Ma, Ailin Li, Jian Wang, Hanying Li, Junrui Pei, Yanhui Gao

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Osteoarthritis : CK(1971) : AC(607)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Excessive fluoride exposure may have adverse effects on children's intelligence.

Pubmed Data : Chin Med J (Engl). 2022 Aug 5 ;135(15):1846-1854. Epub 2022 Aug 5. PMID: **35838408**

Article Published Date : Aug 04, 2022

Authors : Zichen Feng, Ning An, Fangfang Yu, Jun Ma, Na Li, Yuhui Du, Meng Guo, Kaihong Xu, Xiangbo Hou, Zhiyuan Li, Guoyu Zhou, Yue Ba

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Excessive fluoride induces ovarian function impairment.

Pubmed Data : Reprod Toxicol. 2024 Feb 9:108556. Epub 2024 Feb 9. PMID: **38342390**

Article Published Date : Feb 08, 2024

Authors : Nan Geng, Siyuan Dong, Pengpeng Xie, Yi Zhang, Rong Shi, Chen Chen, Zhao Xu, Qun Chen

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Ovarian Diseases : CK(33) : AC(16)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Excessive-fluoride intake can induce thyroid injury.

Pubmed Data : Zhonghua Yu Fang Yi Xue Za Zhi. 2018 Nov 6 ;52(11):1182-1187. PMID: **30419706**

Article Published Date : Nov 05, 2018

Authors : L Y Yu, Y S Cui, H L Liu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Exercise alleviates fluoride-induced learning and memory impairment.

Pubmed Data : Biol Trace Elem Res. 2024 Jan 20. Epub 2024 Jan 20. PMID: **38244175**

Article Published Date : Jan 19, 2024

Authors : Lei Chai, Qiqi Cao, Ke Liu, Run Zhu, Hao Li, Yanghuan Yu, Jixiang Wang, Ruiyan Niu, Ding Zhang, Bo Yang, Mohammad Mehdi Ommati, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)

Therapeutic Actions : Exercise : CK(6247) : AC(999)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exercise ameliorates fluoride-induced anxiety- and depression-like behavior in mice.

Pubmed Data : Biol Trace Elem Res. 2022 Feb ;200(2):678-688. Epub 2021 Apr 6. PMID: **33825162**

Article Published Date : Jan 31, 2022

Authors : Qiqi Cao, Jixiang Wang, Yanru Hao, Fangye Zhao, Rong Fu, Yanghuan Yu, Jundong Wang, Ruiyan Niu, Shengtai Bian, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Anxiety : CK(4195) : AC(743), Depression : CK(8817) : AC(1715), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exercise improved intestinal morphological structure damage in fluoride-exposed mice.

Pubmed Data : Chemosphere. 2022 Feb ;288(Pt 3):132658. Epub 2021 Oct 25. PMID: **34710452**

Article Published Date : Jan 31, 2022

Authors : Rong Fu, Ruiyan Niu, Fangye Zhao, Jixiang Wang, Qiqi Cao, Yanghuan Yu, Ci Liu, Ding Zhang, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Therapeutic Actions : Exercise : CK(6247) : AC(999)
Pharmacological Actions : Gastrointestinal Agents : CK(6875) : AC(2212), Gastroprotective : CK(1653) : AC(686)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure of fluoride with streptozotocin-induced diabetes aggravates testicular damage and spermatozoa parameters in mice.

Pubmed Data : J Toxicol. 2019 ;2019:5269380. Epub 2019 Dec 3. PMID: **31885555**

Article Published Date : Dec 31, 2018

Authors : Manuel Sánchez-Gutiérrez, Evelia Martínez-Loredo, Eduardo Osiris Madrigal-Santillán, Gabriel Betanzos-Cabrera, Araceli Hernández-Zavala, María Angélica Mojica-Villegas, Jeannett Alejandra Izquierdo-Vega

Study Type : Animal Study
Additional Links
Diseases : Diabetic Complications : CK(4283) : AC(1544), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to fluoride exacerbates the cognitive deficit of diabetic patients living in areas with endemic fluorosis.

Pubmed Data : Sci Total Environ. 2024 Feb 20 ;912:169512. Epub 2023 Dec 23. PMID: **38145685**

Article Published Date : Feb 19, 2024

Authors : Jie Xiang, Xiao-Lan Qi, Kun Cao, Long-Yan Ran, Xiao-Xiao Zeng, Xiao Xiao, Wei Liao, Wen-Wen He, Wei Hong, Yan He, Zhi-Zhong Guan

Study Type : Animal Study, Human Study
Additional Links
Diseases : Diabetes: Cognitive Dysfunction : CK(379) : AC(149), Diabetes Mellitus: Type 2 : CK(11728) : AC(2501), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to fluoride in the prenatal and neonatal period result in the increase in COX2 activity and increase in PGE2 concentration in rats brain.

Pubmed Data : Neurotoxicology. 2019 Sep ;74:81-90. Epub 2019 Jun 5. PMID: **31175943**

Article Published Date : Aug 31, 2019

Authors : Karolina Dec, Agnieszka Łukomska, Karolina Skonieczna-Żydecka, Agnieszka Kolasa-Wołosiuk, Maciej Tarnowski, Irena Baranowska-Bosiacka, Izabela Gutowska

Study Type : Animal Study
Additional Links
Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Exposure to fluoride induces apoptosis in the liver, kidney, and heart of Xenopus laevis.

Pubmed Data : Acta Histochem. 2023 Apr ;125(3):151999. Epub 2023 Mar 9. PMID: **36905872**

Article Published Date : Mar 31, 2023

Authors : Siting Wang, Hongmei Ning, Liushuai Hua, Fei Ren, Lingli Chen, Zhisheng Ma, Rongbo Li, Yaming Ge, Zhihong Yin

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124), Renotoxic : CK(56) : AC(20)

Exposure to high levels of fluoride may adversely influence children's intelligence development.

Pubmed Data : Zhongguo Dang Dai Er Ke Za Zhi. 2008 Dec;10(6):723-5. PMID: **19102839**

Article Published Date : Dec 01, 2008

Authors : Ming Liu, Cong Qian

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to high-fluoride drinking water appears to non-linearly affect thyroid function and increase TSH release in children.

Pubmed Data : Environ Res. 2024 Feb 1 ;242:117759. Epub 2023 Nov 28. PMID: **38029816**

Article Published Date : Jan 31, 2024

Authors : Inga Iamandii, Lisa De Pasquale, Maria Edvige Giannone, Federica Veneri, Luigi Generali, Ugo Consolo, Linda S Birnbaum, Jacqueline Castenmiller, Thorhallur I Halldorsson, Tommaso Filippini, Marco Vinceti

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Goiter: Exophthalmic : CK(32) : AC(3), Hypothyroidism : CK(847) : AC(148), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to high-fluoride resulted in lower body weight and exercise capacity in mice.

Pubmed Data : Sci Rep. 2018 Feb 16 ;8(1):3211. Epub 2018 Feb 16. PMID: **29453343**

Article Published Date : Feb 15, 2018

Authors : Sandra L Amaral, Liane B Azevedo, Marilia A R Buzalaf, Mayara F Fabricio, Mileni S Fernandes, Ruth A Valentine, Anne Maguire, Fatemeh V Zohoori

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to higher levels of fluoride in tap water is associated with an increased risk of ADHD symptoms and diagnosis of ADHD.

Pubmed Data : Environ Int. 2019 Dec ;133(Pt B):105190. Epub 2019 Oct 22. PMID: **31654913**

Article Published Date : Nov 30, 2019

Authors : Julia K Riddell, Ashley J Malin, David Flora, Hugh McCague, Christine Till

Study Type : Human Study
Additional Links
Diseases : Attention Deficit Disorder with Hyperactivity : CK(633) : AC(84), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to increasing levels of fluoride in tap water was associated with diminished non-verbal intellectual abilities.

Pubmed Data : Environ Int. 2020 Jan ;134:105315. Epub 2019 Nov 16. PMID: **31743803**

Article Published Date : Dec 31, 2019

Authors : Christine Till, Rivka Green, David Flora, Richard Hornung, E Angeles Martinez-Mier, Maddy Blazer, Linda Farmus, Pierre Ayotte, Gina Muckle, Bruce Lanphear

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Infant Formula : CK(659) : AC(97), Sodium Fluoride : CK(1446) : AC(393)

Expression of SDF-1/CXCR4 and related inflammatory factors in sodium fluoride-treated hepatocytes.

Pubmed Data : PLoS One. 2024 ;19(6):e0302530. Epub 2024 Jun 21. PMID: **38905184**

Article Published Date : Dec 31, 2023

Authors : Rui Yang, Hongting Shen, Mingjun Wang, Yaqian Zhao, Shiling Zhu, Hong Jiang, Yanan Li, Guanglan Pu, Xun Chen, Ping Chen, Qing Lu, Jing Ma, Qiang Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Interleukin-1 up-regulation : CK(8) : AC(3), Interleukin-6 up-regulation : CK(41) : AC(10), Tumor necrosis factorα (TNFα) up-regulation : CK(65) : AC(11)

Extract of Ginkgo biloba leaves attenuates neurotoxic damages from high levels of fluoride.

Pubmed Data : J Trace Elem Med Biol. 2022 Sep 30 ;75:127088. Epub 2022 Sep 30. PMID: **36265321**

Article Published Date : Sep 29, 2022

Authors : Jie Xiang, Yan-Lin Ma, Jian Zou, Xiao-Xiao Zeng, Xiao Xiao, Yan-Long Yu, Yang-Ting Dong, Long-Yan Ran, Xiao-Lan Qi, Wei Hong, Yan-Hui Gao, Zhi-Zhong Guan

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Ginkgo biloba : CK(2025) : AC(644)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fermented rooibos tea ameliorates sodium fluoride-induced cardiorenal toxicity, oxidative stress, and inflammation.

Pubmed Data : Cardiovasc Toxicol. 2024 Feb 5. Epub 2024 Feb 5. PMID: **38315346**

Article Published Date : Feb 04, 2024

Authors : Olawale Razaq Ajuwon, Toyosi Abiodun Adeleke, Basiru Olaitan Ajiboye, Akeem Olalekan Lawal, Ibukun Folorunso, Bartholomew Brai, Fisayo Abraham Bamisaye, John Adeolu Falode, Ikenna Maximillian Odoh, Kabirat Iyabode Adegbite, Oluwasayo Bosede Adegoke

Study Type : Animal Study
Additional Links
Substances : Rooibos : CK(161) : AC(76)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fisetin attenuates arsenic and fluoride subacute co-exposure induced neurotoxicity.

Pubmed Data : Neurotoxicology. 2023 Jul ;97:133-149. Epub 2023 Jun 16. PMID: **37331635**

Article Published Date : Jun 30, 2023

Authors : Vitthal V Gopnar, Debarati Rakshit, Mounisha Bandakinda, Uttam Kulhari, Bidya Dhar Sahu, Awanish Mishra

Study Type : Animal Study
Additional Links
Substances : Fisetin : CK(441) : AC(275)
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Fluoridated tap water was associated with an increased risk of hepatic failure.

Pubmed Data : World J Pediatr. 2024 Oct ;20(10):1029-1042. Epub 2024 Jun 27. PMID: **38937407**

Article Published Date : Sep 30, 2024

Authors : Won Seok Lee, Ju Hee Kim, Boeun Han, Gi Chun Lee, Hye Ri Jung, Ye Jin Shin, Eun Kyo Ha, Eun Lee, Soonchul Lee, Man Yong Han

Study Type : Human Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Fluoride and arsenic exposure affects spatial memory and activates the ERK/CREB signaling pathway in offspring rats.

Pubmed Data : Neurotoxicology. 2017 Mar ;59:56-64. Epub 2017 Jan 15. PMID: **28099871**

Article Published Date : Feb 28, 2017

Authors : Yu-Peng Zhu, Shu-Hua Xi, Ming-Yan Li, Ting-Ting Ding, Nan Liu, Fu-Yuan Cao, Yang Zeng, Xiao-Jing Liu, Jun-Wang Tong, Shou-Fang Jiang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Fluoride and arsenic exposure impairs learning and memory and decreases mGluR5 expression in the hippocampus and cortex in rats.

Pubmed Data : PLoS One. 2014 ;9(4):e96041. Epub 2014 Apr 23. PMID: **24759735**

Article Published Date : Dec 31, 2013

Authors : Shoufang Jiang, Jing Su, Sanqiao Yao, Yanshu Zhang, Fuyuan Cao, Fei Wang, Huihui Wang, Jun Li, Shuhua Xi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride can damage the spleen of mice by perturbing Th1/Th2 cell balance.

Pubmed Data : Biol Trace Elem Res. 2021 Apr ;199(4):1493-1500. Epub 2020 Jul 24. PMID: **32710348**

Article Published Date : Mar 31, 2021

Authors : Yanyan Li, Xiaoping Du, Yangfei Zhao, Jinming Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Fluoride can suppress the activation of p38MAPK pathway in mice spleen lymphocytes and further influences the function of the immune system.

Pubmed Data : Biol Trace Elem Res. 2016 Oct ;173(2):333-8. Epub 2016 Feb 23. PMID: **26906276**

Article Published Date : Sep 30, 2016

Authors : Zeyu Shi, Yaqi Zhan, Junxing Zhao, Jinming Wang, Haili Ma

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Fluoride concentration in ground water and prevalence of dental fluorosis in Ethiopian Rift Valley.

Pubmed Data : BMC Public Health. 2019 Oct 16 ;19(1):1298. Epub 2019 Oct 16. PMID: **31619212**

Article Published Date : Oct 15, 2019

Authors : Habtamu Demelash, Abebe Beyene, Zewdu Abebe, Addisu Melese

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride content in bottled drinking waters, carbonated soft drinks and fruit juices in Davangere city, India.

Pubmed Data : Indian J Dent Res. 2010 ;21(4):528-30. PMID: **21187619**

Article Published Date : Dec 31, 2009

Authors : H M Thippeswamy, Nanditha Kumar, S R Anand, G M Prashant, G N Chandu

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Bottled Water : CK(22) : AC(19)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393), Sugar Sweetened Beverages : CK(1467) : AC(153)

Fluoride content in bottled waters, juices and carbonated soft drinks in Mexico City, Mexico.

Pubmed Data : Int J Paediatr Dent. 2004 Jul ;14(4):260-6. PMID: **15242382**

Article Published Date : Jun 30, 2004

Authors : M D Jimenez-Farfan, J C Hernandez-Guerrero, J P Loyola-Rodriguez, C Ledesma-Montes

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Bottled Water : CK(22) : AC(19)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393), Sugar Sweetened Beverages : CK(1467) : AC(153)

Fluoride could pose a great threat to thyroid endocrine system.

Pubmed Data : Aquat Toxicol. 2016 Feb ;171:48-58. Epub 2015 Dec 24. PMID: **26748264**

Article Published Date : Jan 31, 2016

Authors : Chen Jianjie, Xue Wenjuan, Cao Jinling, Song Jie, Jia Ruhui, Li Meiyan

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(139) : AC(34)

Fluoride depletes acidogenic taxa in oral but not gut microbial communities in mice.

Pubmed Data : mSystems. 2017 Jul-Aug;2(4). Epub 2017 Aug 8. PMID: **28808691**

Article Published Date : Jun 30, 2017

Authors : Koji Yasuda, Tiffany Hsu, Carey A Gallini, Lauren J McIver, Emma Schwager, Andy Shi, Casey R DuLong, Randall N Schwager, Galeb S Abu-Ali, Eric A Franzosa, Wendy S Garrett, Curtis Huttenhower, Xochitl C Morgan

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride deposits in the pineal gland with age and is associated with enhanced gland calcification.

Pubmed Data : Caries Res. 2001 Mar-Apr;35(2):125-8. PMID: **11275672**

Article Published Date : Mar 01, 2001

Authors : J Luke

Study Type : Human Study
Additional Links
Diseases : Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376), Pineal Gland Calcification : CK(233) : AC(31), Pineal Gland Diseases : CK(23) : AC(5)
Problem Substances : Fluoride : CK(1815) : AC(454)

Fluoride effects on cell viability and ENaC expression in kidney epithelial cells.

Pubmed Data : Toxicol Mech Methods. 2021 Oct ;31(8):566-571. Epub 2021 Jun 21. PMID: **34151709**

Article Published Date : Sep 30, 2021

Authors : Mariana R Santesso, Flávia A Oliveira, Cintia K Tokuhara, Gabriela S N Oliveira, Flávia M Levy, Lígia S Antonio, Marília A R Buzalaf, Rodrigo C Oliveira

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride enhances polystyrene nanoparticles cytotoxicity in colonocytes in vitro model.

Pubmed Data : Chem Biol Interact. 2022 Nov 1 ;367:110169. Epub 2022 Sep 20. PMID: **36165825**

Article Published Date : Oct 31, 2022

Authors : Karol P Steckiewicz, Anna Adamska, Magdalena Narajczyk, Elżbieta Megiel, Iwona Inkielewicz-Stepniak

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Microplastic Toxicity : CK(714) : AC(342)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Nano Plastic-and Micro-Particles : CK(198) : AC(91), Polystyrene nanoparticles : CK(427) : AC(212), Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure alters the ultra-structure of sperm flagellum via reducing key protein expressions in testis.

Pubmed Data : Chemosphere. 2020 May ;246:125772. Epub 2019 Dec 30. PMID: **31901658**

Article Published Date : Apr 30, 2020

Authors : Chen Liang, Yuyang He, Yu Liu, Yan Gao, Yongli Han, Xiang Li, Yangfei Zhao, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sperm Quality: Low : CK(611) : AC(121), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure and cognitive neurodevelopment.

Pubmed Data : Environ Res. 2023 Mar 15 ;221:115239. Epub 2023 Jan 10. PMID: **36639015**

Article Published Date : Mar 14, 2023

Authors : Federica Veneri, Marco Vinceti, Luigi Generali, Maria Edvige Giannone, Elena Mazzoleni, Linda S Birnbaum, Ugo Consolo, Tommaso Filippini

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure and indicators of thyroid functioning in the Canadian population.

Pubmed Data : J Epidemiol Community Health. 2017 Oct ;71(10):1019-1025. Epub 2017 Aug 24. PMID: **28839078**

Article Published Date : Sep 30, 2017

Authors : Amanda M Barberio, F Shaun Hosein, Carlos Quiñonez, Lindsay McLaren

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure and prevalence of osteochondroma in drinking water Endemic fluorosis areas of Heilongjiang Province, China.

Pubmed Data : Int J Environ Health Res. 2023 Nov 3:1-14. Epub 2023 Nov 3. PMID: **37921081**

Article Published Date : Nov 02, 2023

Authors : Yongzheng Ma, Yang Liu, Xiaona Liu, Mang Li, Jing Cui, Zhizhong Guan, Junrui Pei, Yanhui Gao

Study Type : Human Study
Additional Links
Diseases : Bone Diseases : CK(325) : AC(101), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure arrests the acrosome formation during spermatogenesis.

Pubmed Data : Chemosphere. 2019 Jul ;226:874-882. Epub 2019 Apr 5. PMID: **31509916**

Article Published Date : Jun 30, 2019

Authors : Shanshan Jiang, Chen Liang, Yan Gao, Yu Liu, Yongli Han, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure cause colon microbiota dysbiosis by destroyed microenvironment and disturbed antimicrobial peptides expression in colon.

Pubmed Data : Environ Pollut. 2022 Jan 1 ;292(Pt B):118381. Epub 2021 Oct 18. PMID: **34673156**

Article Published Date : Dec 31, 2021

Authors : Shi-Quan Zhu, Jing Liu, Bo Han, Wen-Peng Zhao, Bian-Hua Zhou, Jing Zhao, Hong-Wei Wang

Study Type : Animal Study
Additional Links
Diseases : Dysbiosis : CK(2010) : AC(579), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

Fluoride exposure changed the structure and the expressions of Y chromosome related genes in testes.

Pubmed Data : Chemosphere. 2016 Oct ;161:292-299. Epub 2016 Jul 18. PMID: **27441988**

Article Published Date : Sep 30, 2016

Authors : Jinling Cao, Yan Chen, Jianjie Chen, Hanghang Yan, Meiyan Li, Jundong Wang

Study Type : Animal Study

Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure could lead to impaired iodine absorption and iodine deficiency.

Pubmed Data : Int J Environ Res Public Health. 2019 03 26 ;16(6). Epub 2019 Mar 26. PMID: **30917615**

Article Published Date : Jan 25, 2019

Authors : Declan Timothy Waugh

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Iodine Deficiency : CK(110) : AC(18)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure decreased neurite formation on cerebral cortical neurons of SD rats in vitro.

Pubmed Data : Environ Sci Pollut Res Int. 2021 Oct ;28(37):50975-50982. Epub 2021 May 11. PMID: **33977427**

Article Published Date : Sep 30, 2021

Authors : Hongmei Ning, Chong Li, Zhihong Yin, Dongfang Hu, Yaming Ge, Lingli Chen

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride exposure disrupts the cytoskeletal arrangement and ATP synthesis of HT-22 cell.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Apr 1 ;254:114718. Epub 2023 Mar 10. PMID: **36950989**

Article Published Date : Mar 31, 2023

Authors : Lingli Chen, Penghuan Jia, Yuye Liu, Rui Wang, Zhihong Yin, Dongfang Hu, Hongmei Ning, Yaming Ge

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride exposure during development affects both cognition and emotion in mice.

Pubmed Data : Physiol Behav. 2014 Jan 30 ;124:1-7. Epub 2013 Oct 30. PMID: **24184405**

Article Published Date : Jan 29, 2014

Authors : Fei Liu, Jing Ma, Hui Zhang, Peng Liu, You-Ping Liu, Bo Xing, Yong-Hui Dang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure during pregnancy and lactation triggers oxidative stress and molecular changes in hippocampus of offspring rats.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Jan 15 ;208:111437. Epub 2020 Oct 20. PMID: **33096359**

Article Published Date : Jan 14, 2021

Authors : Maria Karolina Martins Ferreira, Walessa Alana Bragança Aragão, Leonardo Oliveira Bittencourt, Bruna Puty, Aline Dionizio, Michel Platini Caldas de Souza, Marilia Afonso Rabelo Buzalaf, Edivaldo Herculano de Oliveira, Maria Elena Crespo-Lopez, Rafael Rodrigues Lima

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure in early life as the possible root cause of disease in later life.

Pubmed Data : J Clin Pediatr Dent. 2018 ;42(5):325-330. Epub 2018 May 15. PMID: **29763350**

Article Published Date : Dec 31, 2017

Authors : Tetsuo Nakamoto, H Ralph Rawls

Study Type : Review
Additional Links
Diseases : Fetal Origin of Adult Disease : CK(249) : AC(62), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Fluoride : CK(1815) : AC(454)

Fluoride exposure induces mitochondrial damage and mitophagy via activation of the IL-17A pathway in hepatocytes.

Pubmed Data : Sci Total Environ. 2022 Jan 15 ;804:150184. Epub 2021 Sep 8. PMID: **34517333**

Article Published Date : Jan 14, 2022

Authors : Yangfei Zhao, Jinming Wang, Jianhai Zhang, Zilong Sun, Ruiyan Niu, Ram Kumar Manthari, Mohammad Mehdi Ommati, Shaolin Wang, Jundong Wang

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Fluoride exposure may contribute to changes in sleep cycle regulation and sleep behaviors among older adolescents in the US.

Pubmed Data : Environ Health. 2019 Dec 9 ;18(1):106. Epub 2019 Dec 9. PMID: **31818308**

Article Published Date : Dec 08, 2019

Authors : Ashley J Malin, Sonali Bose, Stefanie A Busgang, Chris Gennings, Michael Thorpy, Robert O Wright, Rosalind J Wright, Manish Arora

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sleep Disorders : CK(1811) : AC(256)
Problem Substances : Fluoride : CK(1815) : AC(454)

Fluoride exposure may contribute to sleeping less than the recommended duration among older adolescents and adults in Canada.

Pubmed Data : Environ Health. 2021 Feb 18 ;20(1):16. Epub 2021 Feb 18. PMID: **33602214**

Article Published Date : Feb 17, 2021

Authors : Jasmyn E A Cunningham, Hugh McCague, Ashley J Malin, David Flora, Christine Till

Study Type : Human Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sleep Disorders : CK(1811) : AC(256)
Problem Substances : Fluoride : CK(1815) : AC(454)

Fluoride exposure over several generations results in adverse histopathological and biochemical changes in lung tissue.

Pubmed Data : J Appl Toxicol. 2003 Nov-Dec;23(6):437-46. PMID: **14635268**

Article Published Date : Nov 01, 2003

Authors : Gülsen Aydin, Ekrem Ciçek, Mehmet Akdoğan, Osman Gökalp

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Teratogenic : CK(325) : AC(66)

Fluoride exposure provokes mitochondria-mediated apoptosis and increases mitophagy in osteocytes.

Pubmed Data : Biol Trace Elem Res. 2023 Aug ;201(8):3994-4007. Epub 2022 Oct 18. PMID: **36255553**

Article Published Date : Jul 31, 2023

Authors : Yun Zhang, Fanhe Dong, Zihan Wang, Bingbing Xu, Tao Zhang, Qiqi Wang, Qiao Lin

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride exposure was associated with alterations in maternal thyroid hormone levels.

Pubmed Data : Environ Int. 2024 Jan 12 ;184:108442. Epub 2024 Jan 12. PMID: **38237505**

Article Published Date : Jan 11, 2024

Authors : Meaghan Hall, Rick Hornung, Jonathan Chevrier, Pierre Ayotte, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride has impacts on TSH, T3 hormones even in the standard concentration of less than 0.5 mg/L.

Pubmed Data : Sci Rep. 2018 Feb 8 ;8(1):2674. Epub 2018 Feb 8. PMID: **29422493**

Article Published Date : Feb 07, 2018

Authors : Zohreh Kheradpisheh, Masoud Mirzaei, Amir Hossein Mahvi, Mehdi Mokhtari, Reyhane Azizi, Hossein Fallahzadeh, Mohammad Hassan Ehrampoush

Study Type : Human: Case Report
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride impairs mitochondrial translation by targeting miR-221-3p/c-Fos/RMND1 axis contributing to neurodevelopment defects.

Pubmed Data : Sci Total Environ. 2023 Apr 15 ;869:161738. Epub 2023 Jan 21. PMID: **36690096**

Article Published Date : Apr 14, 2023

Authors : Dongjie Li, Qian Zhao, Li Xie, Chenxi Wang, Zhiyuan Tian, Huayang Tang, Tao Xia, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride impairs ovary development by affecting oogenesis and inducing oxidative stress and apoptosis in female zebrafish.

Pubmed Data : Chemosphere. 2020 Oct ;256:127105. Epub 2020 May 17. PMID: **32450357**

Article Published Date : Sep 30, 2020

Authors : Meiyan Li, Jinling Cao, Yangfei Zhao, Panhong Wu, Xuehua Li, Forouzan Khodaei, Yongli Han, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride in drinking water and skeletal fluorosis: a review of the global impact.

Pubmed Data : Curr Environ Health Rep. 2020 Jun ;7(2):140-146. PMID: **32207100**

Article Published Date : May 31, 2020

Authors : Sakshi Srivastava, S J S Flora

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride in drinking water may produce developmental neurotoxicity

Pubmed Data : Neurotoxicol Teratol. 2015 ;47:96-101. Epub 2014 Nov 8. PMID: **25446012**

Article Published Date : Dec 31, 2014

Authors : Anna L Choi, Ying Zhang, Guifan Sun, David C Bellinger, Kanglin Wang, Xiao Jing Yang, Jin Shu Li, Quanmei Zheng, Yuanli Fu, Philippe Grandjean

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodevelopmental Disorders : CK(470) : AC(85)
Additional Keywords : Dose Response : CK(1769) : AC(700)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride in drinking water was associated with increased risk of hypothyroidism in pregnant women.

Pubmed Data : Sci Total Environ. 2023 Apr 15 ;869:161149. Epub 2023 Feb 9. PMID: **36764861**

Article Published Date : Apr 14, 2023

Authors : Meaghan Hall, Bruce Lanphear, Jonathan Chevrier, Rick Hornung, Rivka Green, Carly Goodman, Pierre Ayotte, Esperanza Angeles Martinez-Mier, R Thomas Zoeller, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride in drinking water was associated with reduced visual acuity and alterations in cardiac autonomic function in infancy.

Pubmed Data : Environ Int. 2024 Jan ;183:108336. Epub 2023 Nov 27. PMID: **38064923**

Article Published Date : Dec 31, 2023

Authors : John E Krzeczkowski, Meaghan Hall, Dave Saint-Amour, Youssef Oulhote, Taylor McGuckin, Carly V Goodman, Rivka Green, Gina Muckle, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride in drinking water was negatively associated with cognitive function.

Pubmed Data : Neurotoxicol Teratol. 2023 ;100:107293. Epub 2023 Sep 9. PMID: **37690675**

Article Published Date : Dec 31, 2022

Authors : Tewodros Rango Godebo, Marc Jeuland, Redda Tekle-Haimanot, Biniyam Alemayehu, Arti Shankar, Amy Wolfe, Nati Phan

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride increases the susceptibility of developmental dysplasia of the hip.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Apr 1 ;234:113408. Epub 2022 Mar 14. PMID: **35298972**

Article Published Date : Mar 31, 2022

Authors : Weizheng Zhou, Wenting Luo, Dan Liu, Federico Canavese, Lianyong Li, Qun Zhao

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hip Dysplasia: Congenital : CK(3) : AC(1), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induced leaky gut and bloom of Erysipelatoclostridium ramosum mediate the exacerbation of obesity.

Pubmed Data : J Adv Res. 2023 Aug ;50:35-54. Epub 2022 Oct 29. PMID: **36341987**

Article Published Date : Jul 31, 2023

Authors : Guijie Chen, Yujia Peng, Yujie Huang, Minhao Xie, Zhuqing Dai, Huimei Cai, Wei Dong, Weiqi Xu, Zhiyong Xie, Dan Chen, Xia Fan, Wangting Zhou, Xuhui Kan, Tingting Yang, Chunxu Chen, Yi Sun, Xiaoxiong Zeng, Zhonghua Liu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Obesity : CK(9664) : AC(2579)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induced neurobehavioral impairments in experimental animals.

Pubmed Data : Biol Trace Elem Res. 2023 Mar ;201(3):1214-1236. Epub 2022 Apr 30. PMID: **35488996**

Article Published Date : Feb 28, 2023

Authors : Harsheema Ottappilakkil, Srija Babu, Satheeswaran Balasubramanian, Suryaa Manoharan, Ekambaram

Perumal

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride induced testicular toxicities in adult Wistar rats.

Pubmed Data : Toxicol Mech Methods. 2021 Jun ;31(5):383-392. Epub 2021 Feb 28. PMID: **33641618**

Article Published Date : May 31, 2021

Authors : Priyankar Pal, Prabir Kumar Mukhopadhyay

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induced tissue hypercalcemia, IL-17 mediated inflammation and apoptosis lead to cardiomyopathy.

Pubmed Data : Toxicology. 2018 Aug 1 ;406-407:44-57. Epub 2018 May 22. PMID: **29800585**

Article Published Date : Jul 31, 2018

Authors : Javed Ahsan Quadri, Saba Sarwar, Pinky, Parmita Kar, Seema Singh, Saumya Ranjan Mallick, Sudheer Arava, Tapash Chand Nag, Tara Sankar Roy, A Shariff

Study Type : Animal Study
Additional Links
Diseases : Cardiomyopathy : CK(358) : AC(160), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Fluoride induces apoptosis and alters collagen I expression in rat osteoblasts.

Pubmed Data : Toxicol Lett. 2011 Feb 5 ;200(3):133-8. Epub 2010 Nov 18. PMID: **21093551**

Article Published Date : Feb 04, 2011

Authors : Xiaoyan Yan, Xiaoting Yan, Alex Morrison, Tianlong Han, Qinglin Chen, Ji Li, Jundong Wang

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride induces apoptosis in mammalian cells.

Pubmed Data : Anticancer Res. 2017 Sep ;37(9):4767-4777. PMID: **28870895**

Article Published Date : Aug 31, 2017

Authors : Daniel Araki Ribeiro, Caroline Margonato Cardoso, Veronica Quispe Yujra, Milena DE Barros Viana, Odair Aguiar, Luciana Pellegrini Pisani, Celina Tizuko Fujiyama Oshima

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride induces autoimmune orchitis involved with enhanced IL-17A secretion in mice testis.

Pubmed Data : J Agric Food Chem. 2019 Nov 8. Epub 2019 Nov 8. PMID: **31703480**

Article Published Date : Nov 07, 2019

Authors : Panhong Wu, Zilong Sun, Xiaoqian Lv, Xuejing Pei, Ram Kumar Manthari, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(11878) : AC(2631), Fluoride Toxicity : CK(1389) : AC(376), Orchitis : CK(19) : AC(5)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induces neutrophil extracellular traps and aggravates brain inflammation by disrupting neutrophil calcium homeostasis and causing ferroptosis.

Pubmed Data : Environ Pollut. 2023 Aug 15 ;331(Pt 1):121847. Epub 2023 May 18. PMID: **37209896**

Article Published Date : Aug 14, 2023

Authors : Dongxu Wang, Kai Yin, Yue Zhang, Hongmin Lu, Lulu Hou, Hongjing Zhao, Mingwei Xing

Study Type : In Vitro Study
Additional Links
Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induces oxidative damage and SIRT1/autophagy through ROS-mediated JNK signaling.

Pubmed Data : Free Radic Biol Med. 2015 Dec ;89:369-78. Epub 2015 Sep 30. PMID: **26431905**

Article Published Date : Nov 30, 2015

Authors : Maiko Suzuki, Cheryl Bandoski, John D Bartlett

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induces pyroptosis via IL-17A-mediated caspase-1/11-dependent pathways and Bifidobacterium intervention in testis.

Pubmed Data : Sci Total Environ. 2024 May 20 ;926:172036. Epub 2024 Mar 28. PMID: **38554964**

Article Published Date : May 19, 2024

Authors : Ao Cheng, Huifeng Luo, Bingchao Fan, Qing Xiang, Zhaochen Nie, Shuang Feng, Yurou Qiao, Yue Wu, Qianlong Zhu, Rongxiu Liu, Xiaochao Song, Xiang Li, Jianhai Zhang

Study Type : Animal Study
Additional Links
Substances : Bifidobacterium : CK(1540) : AC(254)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Interleukin-17 downregulation : CK(484) : AC(187)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride induces thyroid dysfunction in rats, which may be attenuated

by protein and calcium supplementation.

Pubmed Data : Toxicol Ind Health. 2009 Feb;25(1):49-57. PMID: **19318504**

Article Published Date : Feb 01, 2009

Authors : H Wang, Z Yang, B Zhou, H Gao, X Yan, J Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

Fluoride inhibits longitudinal bone growth by acting directly at the growth plate in cultured neonatal rat metatarsal bones.

Pubmed Data : Biol Trace Elem Res. 2020 Oct ;197(2):522-532. Epub 2019 Dec 14. PMID: **31838736**

Article Published Date : Sep 30, 2020

Authors : Rui Ma, Shuang Liu, Tingting Qiao, Demin Li, Ruixue Zhang, Xiaoying Guo

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride interferes with the sperm fertilizing ability.

Pubmed Data : J Agric Food Chem. 2019 May 8 ;67(18):5240-5249. Epub 2019 Apr 29. PMID: **31008594**

Article Published Date : May 07, 2019

Authors : Yu Liu, Chen Liang, Yan Gao, Shanshan Jiang, Yuyang He, Yongli Han, Ali Olfati, Ram Kumar Manthari, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride is inversely associated with intelligence.

Pubmed Data : Environ Int. 2021 Oct ;155:106681. Epub 2021 Jun 4. PMID: **34098334**

Article Published Date : Sep 30, 2021

Authors : Xingchen Yu, Lu Xia, Shun Zhang, Guoyu Zhou, Yonggang Li, Hongliang Liu, Changchun Hou, Qian Zhao, Lixin Dong, Yushan Cui, Qiang Zeng, Aiguo Wang, Li Liu

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride levels in the 100-200 ppm range results in neurotoxicity in rats.

Pubmed Data : Biol Trace Elem Res. 2010 Jul 24. Epub 2010 Jul 24. PMID: **20658207**

Article Published Date : Jul 24, 2010

Authors : P Mahaboob Basha, Puja Rai, Shabana Begum

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Multi-Generational Effects : CK(4) : AC(2)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride produces can decrease trabecular bone strength by changing the elasticity of the trabecular bone.

Pubmed Data : Biol Trace Elem Res. 2018 Feb 2. Epub 2018 Feb 2. PMID: **29396777**

Article Published Date : Feb 01, 2018

Authors : Brenda Lorena Fina, Maela Lupo, Eugenia Rocío Da Ros, Mercedes Lombarte, Alfredo Rigalli

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride promotes the secretion of inflammatory factors in microglia.

Pubmed Data : Environ Sci Pollut Res Int. 2024 Mar ;31(13):19844-19855. Epub 2024 Feb 17. PMID: **38367109**

Article Published Date : Feb 29, 2024

Authors : Qiuyi Zhang, Tao Li, Ruili Shi, Ruifang Qi, Xiaoqiong Hao, Baohui Ma

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Fluoride showed potent neuronal toxicity as evidenced by alterations of various molecular markers.

Pubmed Data : J Trace Elem Med Biol. 2024 Aug 23 ;86:127511. Epub 2024 Aug 23. PMID: **39216433**

Article Published Date : Aug 22, 2024

Authors : Sachindra Kumar, Ravindra Shantakumar Swamy, Rashmi Bhushan, Vishal Chhabra, Smita Shenoy, Krishna Murti, Shubhankar Kumar Singh, Nitesh Kumar

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride stimulates anxiety and depression-like behaviors.

Pubmed Data : J Agric Food Chem. 2021 Nov 17 ;69(45):13618-13627. Epub 2021 Nov 4. PMID: **34735150**

Article Published Date : Nov 16, 2021

Authors : Guoyu Zhou, Yue Hu, Anqi Wang, Meng Guo, Yuhui Du, Yongxiang Gong, Limin Ding, Zichen Feng, Xiangbo Hou, Kaihong Xu, Fangfang Yu, Zhiyuan Li, Yue Ba

Study Type : Animal Study
Additional Links
Diseases : Anxiety : CK(4195) : AC(743), Depression : CK(8817) : AC(1715), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-elicited developmental testicular toxicity in rats: roles of endoplasmic reticulum stress and inflammatory response.

Pubmed Data : Toxicol Appl Pharmacol. 2013 Sep 1 ;271(2):206-15. Epub 2013 May 22. PMID: **23707774**

Article Published Date : Aug 31, 2013

Authors : Shun Zhang, Chunyang Jiang, Hongliang Liu, Zhizhong Guan, Qiang Zeng, Cheng Zhang, Rongrong Lei, Tao Xia, Hui Gao, Lu Yang, Yihu Chen, Xue Wu, Xiaofei Zhang, Yushan Cui, Linyu Yu, Zhenglun Wang, Aiguo Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Inflammation : CK(15536) : AC(5279)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced alterations of synapse-related proteins in the cerebral cortex of ICR offspring mouse brain.

Pubmed Data : Chemosphere. 2018 Jun ;201:874-883. Epub 2018 Feb 27. PMID: **29567471**

Article Published Date : May 31, 2018

Authors : Yaming Ge, Lingli Chen, Zhihong Yin, Xiaochao Song, Tao Ruan, Liushuai Hua, Junwei Liu, Jundong Wang, Hongmei Ning

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride-induced apoptosis in non-skeletal tissues of experimental animals.

Pubmed Data : Heliyon. 2023 Aug ;9(8):e18646. Epub 2023 Jul 29. PMID: **37560699**

Article Published Date : Jul 31, 2023

Authors : Linet Musungu Angwa, Sylvester Dodzi Nyadanu, Anne Murugi Kanyugo, Timothy Adampah, Gavin Pereira

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride-induced cortical toxicity in rats: the role of excessive endoplasmic reticulum stress and its mediated defective autophagy.

Pubmed Data : Biol Trace Elem Res. 2023 Aug ;201(8):3850-3860. Epub 2022 Nov 3. PMID: **36327065**

Article Published Date : Jul 31, 2023

Authors : Jingjing Zhang, Yanling Tang, Wanjing Xu, Zeyu Hu, Shangzhi Xu, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride-induced hepatic and cardio-renal toxicity in a concentration-dependent manner.

Pubmed Data : Biol Trace Elem Res. 2023 Jan ;201(1):229-241. Epub 2022 Jan 12. PMID: **35023047**

Article Published Date : Dec 31, 2022

Authors : Priyanka Sharma, Pawan Kumar Verma, Shilpa Sood, Maninder Singh, Deepika Verma

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced mitochondrial dysfunction.

Pubmed Data : Biol Trace Elem Res. 2024 Mar ;202(3):835-849. Epub 2023 Jun 10. PMID: **37300595**

Article Published Date : Feb 29, 2024

Authors : Sachindra Kumar, Smita Shenoy, Ravindra Shantakumar Swamy, V Ravichandiran, Nitesh Kumar

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Diseases : CK(607) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced neuron apoptosis and expressions of inflammatory factors by activating microglia in rat brain.

Pubmed Data : Mol Neurobiol. 2016 Sep ;53(7):4449-60. Epub 2015 Aug 8. PMID: **26253724**

Article Published Date : Aug 31, 2016

Authors : Nan Yan, Yan Liu, Shengnan Liu, Siqi Cao, Fei Wang, Zhengdong Wang, Shuhua Xi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169), Neurotoxic : CK(2838) : AC(702)

Fluoride-induced testicular degeneration and sperm quality deteriorations.

Pubmed Data : Rev Int Androl. 2020 Jul 20. Epub 2020 Jul 20. PMID: **32703668**

Article Published Date : Jul 19, 2020

Authors : Sunday Aderemi Adelakun, Olalekan Wasiu Akintunde, Babatunde Ogunlade

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosilicic acid and cotinine, separately and in combination, induce genotoxicity and telomeric reduction in human osteoblast cell line MG63.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2022 ;876-877:503474. Epub 2022 Feb 17. PMID: **35483789**

Article Published Date : Dec 31, 2021

Authors : Ana L H Garcia, Cristina A Matzenbacher, Solange Soares, Paula Rohr, Juliana da Silva

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosilicic acid induces DNA damage and oxidative stress in bone marrow mesenchymal stem cells.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2021 ;861-862:503297. Epub 2020 Nov 21. PMID: **33551106**

Article Published Date : Dec 31, 2020

Authors : Ana L H Garcia, Juliana Picinini, Maiele D Silveira, Melissa Camassola, Ana P V Visentim, Mirian Salvador, Juliana da Silva

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosis is associated with impaired cognition in children.

Pubmed Data : Ann Indian Acad Neurol. 2021 ;24(5):715-720. Epub 2020 Nov 6. PMID: **35002129**

Article Published Date : Dec 31, 2020

Authors : Anjana Prabhakar, Kabeer Abdulkhayarkutty, Shaji Velayudhan Cheruvallil, Prasanth Sudhakaran

Study Type : Human Study
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Folic acid ameliorates the declining quality of sodium fluoride-exposed mouse oocytes.

Pubmed Data : Aging Dis. 2022 Oct 1 ;13(5):1471-1487. Epub 2022 Oct 1. PMID: **36186127**

Article Published Date : Sep 30, 2022

Authors : Xiaoyuan Lin, Beibei Fu, Yan Xiong, Shiyao Xu, Jin Liu, Mohamed Y Zaky, Dan Qiu, Haibo Wu

Study Type : Animal Study
Additional Links
Substances : Folic Acid : CK(1317) : AC(206)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fruits of A. carambola are useful as a dietary supplement in regulation of fluoride induced hyperglycemia, hyperlipemia and oxidative stress.

Pubmed Data : Interdiscip Toxicol. 2014 Jun ;7(2):103-10. Epub 2014 Nov 15. PMID: **26109886**

Article Published Date : May 31, 2014

Authors : Rupal A Vasant, A V R L Narasimhacharya

Study Type : Animal Study
Additional Links
Substances : Star Fruit : CK(17) : AC(5)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hyperglycemia : CK(2107) : AC(692), Hyperlipidemia : CK(2133) : AC(550), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hypoglycemic Agents : CK(8194) : AC(2019), Hypolipidemic : CK(8317) : AC(1985)
Additional Keywords : Supplementation : CK(413) : AC(60)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Gene expression and alterations of antioxidant enzymes in spleen of rats exposed to fluoride.

Pubmed Data : J Trace Elem Med Biol. 2022 Jul ;72:126966. Epub 2022 Mar 9. PMID: **35286942**

Article Published Date : Jun 30, 2022

Authors : A Shashi, Sukanya Thakur

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Genotoxicity of fluoride subacute exposure in rats and selenium intervention.

Pubmed Data : Chemosphere. 2021 Mar ;266:128978. Epub 2020 Nov 17. PMID: **33298328**

Article Published Date : Feb 28, 2021

Authors : Jelena Radovanović, Biljana Antonijević, Stoimir Kolarević, Sanja Milutinović-Smiljanić, Jelena Mandić, Branka Vuković-Gačić, Zorica Bulat, Marijana Ćurčić, Margareta Kračun-Kolarević, Karolina Sunjog, Jovana Kostić-Vuković, Jovana Jovanović Marić, Evica Antonijević-Miljaković, Danijela Đukić-Ćosić, Aleksandra Buha Djordjevic, Dragana Javorac, Katarina Baralić, Zoran Mandinić

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Pharmacological Actions : Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Neurotoxic : CK(2838) : AC(702)

Gestational exposure to fluoride impairs cognition in C57 BL/6 J male offspring mice.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Jul 1 ;239:113682. Epub 2022 May 25. PMID: **35643027**

Article Published Date : Jun 30, 2022

Authors : Weisheng Li, Likui Lu, Dan Zhu, Jingliu Liu, Yajun Shi, Hongtao Zeng, Xi Yu, Jun Guo, Bin Wei, Yongle Cai, Miao Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Grape seed proanthocyanidin extract as a naturally occurring prophylactic treatment for fluoride-induced hepatotoxicity associated with iron overload.

Pubmed Data : J Toxicol Sci. 2018 ;43(5):311-319. PMID: **29743442**

Article Published Date : Dec 31, 2017

Authors : Qiang Niu, Ping He, Shangzhi Xu, Ruling Ma, Yusong Ding, Lati Mu, Shugang Li

Study Type : Animal Study
Additional Links
Substances : Grape Seed Extract : CK(1047) : AC(329)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Iron Overload : CK(218) : AC(78)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Grape seed proanthocyanins protect fluoride-induced hepatotoxicity.

Pubmed Data : Toxicol Res (Camb). 2024 Apr ;13(2):tfae039. Epub 2024 Mar 15. PMID: **38500515**

Article Published Date : Mar 31, 2024

Authors : Ran Wei, Guan Fang Ping, Zhe Tao Lang, Er Hui Wang

Study Type : In Vitro Study
Additional Links
Substances : Grape Seed Extract : CK(1047) : AC(329)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Grape seed procyanidin extract attenuate sodium fluoride-induced oxidative damage and apoptosis in rat kidneys.

Pubmed Data : Biomed Environ Sci. 2020 Jun 20 ;33(6):454-457. PMID: **32641209**

Article Published Date : Jun 19, 2020

Authors : Er Hui Wang, Zeng Li Yu, Guan Fang Ping, De Sheng Zhai

Study Type : Animal Study
Additional Links
Substances : Grape Seed Extract : CK(1047) : AC(329)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Proanthocyanidins : CK(494) : AC(157)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Health effects of groundwater fluoride contamination.

Pubmed Data : Clin Toxicol (Phila). 2009 Apr ;47(4):292-5. PMID: **19274500**

Article Published Date : Mar 31, 2009

Authors : Bishwajit Nayak, Madan Mohan Roy, Bhaskar Das, Arup Pal, Mrinal Kumar Sengupta, Shankar Prasad De, Dipankar Chakraborti

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluorosis : CK(262) : AC(42), Sodium Fluoride : CK(1446) : AC(393)

Health impact of supplying safe drinking water containing fluoride below permissible level on flourosis patients in a fluoride-endemic rural area of West Bengal.

Pubmed Data : Indian J Public Health. 2011 ;55(4):303-8. PMID: **22298140**

Article Published Date : Dec 31, 2010

Authors : Kunal Kanti Majumdar

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hesperidin attenuates oxidative stress, inflammation, apoptosis, and cardiac dysfunction in sodium fluoride-induced cardiotoxicity.

Pubmed Data : Cardiovasc Toxicol. 2022 Aug ;22(8):727-735. Epub 2022 May 23. PMID: **35606666**

Article Published Date : Jul 31, 2022

Authors : Behçet Varışlı, Ekrem Darendelioğlu, Cuneyt Caglayan, Fatih Mehmet Kandemir, Adnan Ayna, Aydın Genç, Özge Kandemir

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Bcl-2 protein down-regulation : CK(687) : AC(522), NF-kappaB Inhibitor : CK(5541) : AC(3374), Superoxide Dismutase Up-regulation : CK(2327) : AC(896), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670), Tumor Suppressor Protein p53 Upregulation : CK(748) : AC(549)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hesperidin/chitosan nanogel mitigates apoptosis and endoplasmic reticulum stress in fluoride and aluminum-induced testicular injury.

Pubmed Data : Biol Trace Elem Res. 2023 Dec 13. Epub 2023 Dec 13. PMID: **38087036**

Article Published Date : Dec 12, 2023

Authors : Nora S Deiab, Ahmad S Kodous, Mohamed K Mahfouz, Alshaimaa M Said, Mohamed Mohamady Ghobashy, Omayma A R Abozaid

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Aluminum Toxicity : CK(685) : AC(308), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

High concentration of sodium fluoride in drinking water induce hypertrophy versus atrophy in mouse skeletal muscle.

Pubmed Data : J Hazard Mater. 2022 Jun 15 ;432:128654. Epub 2022 Mar 9. PMID: **35286933**

Article Published Date : Jun 14, 2022

Authors : Apoorva H Nagendra, Mohd Altaf Najar, Bipasha Bose, P Sudheer Shenoy

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High fluoride exposure has multigenerational and cumulative adverse effects on thyroid status, brain health and learning memory in rats.

Pubmed Data : Biol Trace Elem Res. 2011 Jul 14. Epub 2011 Jul 14. PMID: **21755305**

Article Published Date : Jul 14, 2011

Authors : Piler Mahaboob Basha, Puja Rai, Shabana Begum

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148), Prenatal Chemical Exposures : CK(2428) : AC(530), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

High fluoride ingestion impairs bone fracture healing.

Pubmed Data : Front Bioeng Biotechnol. 2022 ;10:791433. Epub 2022 May 20. PMID: **35669059**

Article Published Date : Dec 31, 2021

Authors : Chengcheng Du, Pengcheng Xiao, Shengqiang Gao, Shengwen Chen, Bowen Chen, Wei Huang, Chen Zhao

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fractures: Bone : CK(255) : AC(34)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

High prevalence of dental fluorosis among schoolchildren in three villages in Sri Lanka.

Pubmed Data : Ceylon Med J. 2017 12 26 ;62(4):218-221. PMID: **29390597**

Article Published Date : Jan 25, 2017

Authors : P S Rajapakse, W M Jayawardhane, A Lokubandara, R Gamage, A P Dasanayake, C Goonaratna

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Human cultured IMR-32 neuronal-like and U87 glial-like cells have different patterns of toxicity under fluoride exposure.

Pubmed Data : PLoS One. 2021 ;16(6):e0251200. Epub 2021 Jun 17. PMID: **34138870**

Article Published Date : Dec 31, 2020

Authors : Bruna Puty, Leonardo Oliveira Bittencourt, Iago Cesar Nogueira, Marília Afonso Rabelo Buzalaf, Edivaldo Herculano Oliveira, Rafael Rodrigues Lima

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Impacts of fluoride neurotoxicity and mitochondrial dysfunction on cognition and mental health.

Pubmed Data : Int J Environ Res Public Health. 2021 Dec 7 ;18(24). Epub 2021 Dec 7. PMID: **34948493**

Article Published Date : Dec 06, 2021

Authors : Emily A Adkins, Kelly J Brunst

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Impairment of learning and memory in mouse offspring induced by perinatal fluoride exposure may partly result from the enhanced miR-124 and miR-132.

Pubmed Data : Chemosphere. 2018 Jan 8 ;197:117-122. Epub 2018 Jan 8. PMID: **29334651**

Article Published Date : Jan 07, 2018

Authors : Jixiang Wang, Yuliang Zhang, Zhenzhen Guo, Rui Li, Xingchen Xue, Zilong Sun, Ruiyan Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

In silico prediction of microRNAs on fluoride induced sperm toxicity in mice.

Pubmed Data : Food Chem Toxicol. 2016 Dec ;98(Pt A):34-49. Epub 2016 Mar 21. PMID: **27012587**

Article Published Date : Nov 30, 2016

Authors : Azhwar Raghunath, Dhivyalakshmi Jeyabaskar, Kiruthika Sundarraj, Lakshmikanthan Panneerselvam, Ekambaram Perumal

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Infant formula consumption may be associated with an increased risk of developing at least some detectable level of enamel fluorosis.

Pubmed Data : Evid Based Dent. 2009;10(3):73. PMID: **19820737**

Article Published Date : Jan 01, 2009

Authors : Maura Edwards

Study Type : Meta Analysis
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Infant Formula : CK(659) : AC(97)

Infants fully formula-fed on formulae prepared with optimally fluoridated water (0.7-1.0 mg/L) have a high probability of exceeding the upper limit for fluoride and are at increased risk of dental fluorosis.

Pubmed Data : J Public Health Dent. 2010 Jun 2. Epub 2010 Jun 2. PMID: **20545827**

Article Published Date : Jun 02, 2010

Authors : Peter Cressey

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Infant Formula : CK(659) : AC(97), Public Drinking Water : CK(49) : AC(16)

Inferring the fluoride hydrogeochemistry and effect of consuming fluoride-contaminated drinking water on human health.

Pubmed Data : Environ Geochem Health. 2016 Apr ;38(2):557-76. Epub 2015 Jul 12. PMID: **26164468**

Article Published Date : Mar 31, 2016

Authors : D Mondal, G Dutta, S Gupta

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Inorganic fluoride and functions of brain.

Pubmed Data : Crit Rev Toxicol. 2020 Jan ;50(1):28-46. Epub 2020 Feb 19. PMID: **32073339**

Article Published Date : Dec 31, 2019

Authors : N I Agalakova, O V Nadei

Study Type : Review
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Iodine status modifies the association between fluoride exposure in pregnancy and preschool boys' intelligence.

Pubmed Data : Nutrients. 2022 Jul 16 ;14(14). Epub 2022 Jul 16. PMID: **35889877**

Article Published Date : Jul 15, 2022

Authors : Carly V Goodman, Meaghan Hall, Rivka Green, Jonathan Chevrier, Pierre Ayotte, Esperanza Angeles Martinez-Mier, Taylor McGuckin, John Krzeczkowski, David Flora, Richard Hornung, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Substances : Iodine : CK(182) : AC(32)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Iodine Deficiency : CK(110) : AC(18), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Lactobacillus johnsonii BS15 improves intestinal environment against fluoride-induced memory impairment.

Pubmed Data : PeerJ. 2020 ;8:e10125. Epub 2020 Oct 7. PMID: **33083147**

Article Published Date : Dec 31, 2019

Authors : Jinge Xin, Dong Zeng, Hesong Wang, Ning Sun, Abdul Khalique, Ying Zhao, Liqian Wu, Kangcheng Pan, Bo Jing, Xueqin Ni

Study Type : Animal Study
Additional Links
Substances : Lactobacillus probiotics : CK(5310) : AC(1187)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Pharmacological Actions : Gastrointestinal Agents : CK(6875) : AC(2212), Neuroprotective Agents : CK(17667) : AC(7641)
Additional Keywords : Gut-brain Axis : CK(675) : AC(281)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Lead enhances fluoride influence on apoptotic processes in the HepG2 liver cell line.

Pubmed Data : Toxicol Ind Health. 2016 Mar ;32(3):517-25. Epub 2013 Nov 5. PMID: **24193047**

Article Published Date : Feb 29, 2016

Authors : Izabela Gutowska, Irena Baranowska-Bosiacka, Ewa Siwiec, Małgorzata Szczuko, Agnieszka Kolasa, Anna Kondarewicz, Marta Rybicka, Małgorzata Dunaj-Stańczyk, Ireneusz Wiernicki, Dariusz Chlubek, Ewa Stachowska

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Lead Poisoning : CK(479) : AC(180)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Fluoride : CK(1815) : AC(454), Lead : CK(684) : AC(227), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Low glucose utilization and neurodegenerative changes caused by sodium fluoride exposure in rat's developmental brain.

Pubmed Data : Neuromolecular Med. 2014 Mar ;16(1):94-105. Epub 2013 Aug 28. PMID: **23982469**

Article Published Date : Feb 28, 2014

Authors : Chunyang Jiang, Shun Zhang, Hongliang Liu, Zhizhong Guan, Qiang Zeng, Cheng Zhang, Rongrong Lei, Tao Xia, Zhenglun Wang, Lu Yang, Yihu Chen, Xue Wu, Xiaofei Zhang, Yushan Cui, Linyu Yu, Aiguo Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Low levels of fluoride exposure in drinking water had negative effects on children's intelligence.

Pubmed Data : J Hazard Mater. 2011 Feb 28 ;186(2-3):1942-6. Epub 2010 Dec 25. PMID: **21237562**

Article Published Date : Feb 27, 2011

Authors : Yunpeng Ding, YanhuiGao, Huixin Sun, Hepeng Han, Wei Wang, Xiaohong Ji, Xuehui Liu, Dianjun Sun

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Low-moderate fluoride exposure is associated with alterations in

childhood thyroid function.

Pubmed Data : Environ Int. 2020 Jan ;134:105229. Epub 2019 Nov 4. PMID: **31698198**

Article Published Date : Dec 31, 2019

Authors : Mengwei Wang, Ling Liu, Huijun Li, Yonggang Li, Hongliang Liu, Changchun Hou, Qiang Zeng, Pei Li, Qian Zhao, Lixin Dong, Guoyu Zhou, Xingchen Yu, Li Liu, Qing Guan, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Low-to-moderate fluoride exposure was associated with dysfunction of cholinergic system for children.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Nov 20 ;228:112959. Epub 2021 Nov 20. PMID: **34808511**

Article Published Date : Nov 19, 2021

Authors : Sumei Wang, Qian Zhao, Gaochun Li, Mengwei Wang, Hongliang Liu, Xingchen Yu, Jingwen Chen, Pei Li, Lixin Dong, Guoyu Zhou, Yushan Cui, Mengru Wang, Li Liu, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Luteolin may be a promising lead for the treatment of drug-induced gastroenteropathy.

Pubmed Data : Drug Chem Toxicol. 2020 Aug 5:1-13. Epub 2020 Aug 5. PMID: **32757682**

Article Published Date : Aug 04, 2020

Authors : Akinleye S Akinrinde, Kehinde O Soetan, Monsuru O Tijani

Study Type : Animal Study
Additional Links
Substances : Luteolin : CK(707) : AC(390)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Gastroprotective : CK(1653) : AC(686)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Diclofenac : CK(231) : AC(52), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

Luteolin-mediated Kim-1/NF-kB/Nrf2 signaling pathways protects sodium fluoride-induced hypertension and cardiovascular complications.

Pubmed Data : Biofactors. 2018 Nov ;44(6):518-531. Epub 2018 Nov 26. PMID: **30474894**

Article Published Date : Oct 31, 2018

Authors : Ademola Adetokunbo Oyagbemi, Temidayo Olutayo Omobowale, Olufunke Eunice Ola-Davies, Ebunoluwa Racheal Asenuga, Temitayo Olabisi Ajibade, Olumuyiwa Abiola Adejumobi, Jeremiah Moyinoluwa Afolabi, Blessing Seun Ogunpolu, Olufunke Olubunmi Falayi, Adebowale Bernard Saba, Adeolu Alex Adedapo, Momoh Audu Yakubu

Study Type : Animal Study
Additional Links
Substances : Luteolin : CK(707) : AC(390)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypertension : CK(8603) : AC(1329), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antihypertensive Agents : CK(6936) : AC(1007), Malondialdehyde Down-regulation : CK(2826) : AC(965), Nrf2 activation : CK(2908) : AC(1762), Superoxide Dismutase Up-regulation : CK(2327) : AC(896)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Lycopene significantly combated sodium fluoride induced ameloblasts apoptosis and dental fluorosis.

Pubmed Data : Chem Biol Interact. 2016 Nov 18 ;261:27-34. Epub 2016 Nov 18. PMID: **27871895**

Article Published Date : Nov 17, 2016

Authors : Weishan Li, Binghua Jiang, Xianglin Cao, Yongjiang Xie, Ting Huang

Study Type : Animal Study
Additional Links
Substances : Lycopene : CK(1265) : AC(371)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Superoxide Dismutase Up-regulation : CK(2327) : AC(896)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Maternal exposure to drinking water throughout pregnancy fluoridated at the level of 0.7 mg/L was associated with poorer inhibitory control and cognitive flexibility.

Pubmed Data : Sci Total Environ. 2023 Sep 15 ;891:164322. Epub 2023 May 25. PMID: **37236475**

Article Published Date : Sep 14, 2023

Authors : Deborah Dewey, Gillian England-Mason, Henry Ntanda, Andrea J Deane, Mandakini Jain, Nadia Barnieh, Gerald F Giesbrecht, Nicole Letourneau,

Study Type : Human Study
Additional Links
Diseases : Developmental Disorder: Children : CK(148) : AC(19), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Maternal exposure to higher levels of fluoride during pregnancy was associated with lower IQ scores in children aged 3 to 4 years.

Pubmed Data : JAMA Pediatr. 2019 Oct 1 ;173(10):940-948. PMID: **31424532**

Article Published Date : Sep 30, 2019

Authors : Rivka Green, Bruce Lanphear, Richard Hornung, David Flora, E Angeles Martinez-Mier, Raichel Neufeld, Pierre Ayotte, Gina Muckle, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Maternal fluoride exposure during gestation and lactation decreased learning and memory ability of mouse pups.

Pubmed Data : Hum Exp Toxicol. 2018 Jan ;37(1):87-93. Epub 2017 Feb 13. PMID: **29187078**

Article Published Date : Dec 31, 2017

Authors : Z Sun, Y Zhang, X Xue, R Niu, J Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Melatonin alleviated fluoride-induced impairment of spermatogenesis

and sperm maturation process.

Pubmed Data : Food Chem Toxicol. 2023 Aug ;178:113867. Epub 2023 Jun 1. PMID: **37269891**

Article Published Date : Jul 31, 2023

Authors : Huifeng Luo, Rongxiu Liu, Yilin Lang, Jinhui Zhao, Cuicui Zhuang, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(2743) : AC(904)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Pharmacological Actions : Fertility Agents: Male : CK(369) : AC(101)
Additional Keywords : Gene Expression Regulation : CK(1399) : AC(621)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Memory impairment induced by sodium fluoride is associated with changes in brain monoamine levels.

Pubmed Data : Neurotox Res. 2011 Jan ;19(1):55-62. Epub 2009 Dec 3. PMID: **19957215**

Article Published Date : Dec 31, 2010

Authors : Marcela Pereira, Patrícia A Dombrowski, Estela M Losso, Lea R Chioca, Cláudio Da Cunha, Roberto Andreatini

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Mitigation of honokiol on fluoride-induced mitochondrial oxidative stress, mitochondrial dysfunction, and cognitive deficits.

Pubmed Data : J Hazard Mater. 2022 09 5 ;437:129381. Epub 2022 Jun 16. PMID: **35752048**

Article Published Date : Jan 04, 2022

Authors : Dongmei Wang, Luyang Cao, Xiang Zhou, Gang Wang, Yilu Ma, Xueqin Hao, Hua Fan

Study Type : Animal Study
Additional Links
Substances : Honokiol : CK(435) : AC(271)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Mitochondrial respiratory chain dysfunction mediated by ROS is a primary point of fluoride-induced damage in Hepa1-6 cells.

Pubmed Data : Environ Pollut. 2019 Dec ;255(Pt 3):113359. Epub 2019 Oct 7. PMID: **31614248**

Article Published Date : Nov 30, 2019

Authors : Hong-Wei Wang, Yan Zhang, Pan-Pan Tan, Liu-Shu Jia, Yu Chen, Bian-Hua Zhou

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Modifying effect of COMT gene polymorphism and a predictive role for proteomics analysis in children's intelligence in endemic fluorosis area in Tianjin, China.

Pubmed Data : Toxicol Sci. 2015 Apr ;144(2):238-45. Epub 2015 Jan 1. PMID: **25556215**

Article Published Date : Mar 31, 2015

Authors : Shun Zhang, Xiaofei Zhang, Hongliang Liu, Weidong Qu, Zhizhong Guan, Qiang Zeng, Chunyang Jiang, Hui Gao, Cheng Zhang, Rongrong Lei, Tao Xia, Zhenglun Wang, Lu Yang, Yihu Chen, Xue Wu, Yushan Cui, Linyu Yu, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Genomic Variation : CK(302) : AC(38)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Modulation of the Nrf-2 and HO-1 signalling axis is associated with Betaine's abatement of fluoride-induced hepatorenal toxicities in rats.

Pubmed Data : Naunyn Schmiedebergs Arch Pharmacol. 2024 Oct ;397(10):7725-7745. Epub 2024 May 7. PMID: **38713257**

Article Published Date : Sep 30, 2024

Authors : Solomon Owumi, Harieme Agbarogi, Bayode J Oluwawibe, Moses T Otunla, Mayowa M Anifowose, Uche O Arunsi

Study Type : Animal Study
Additional Links
Substances : Betaine : CK(134) : AC(35)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Heme oxygenase-1 up-regulation : CK(1225) : AC(756), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Morphological changes and mitochondrial alterations on cardiomyocytes exposed to fluoride.

Pubmed Data : P R Health Sci J. 2023 Jun ;42(2):132-138. PMID: **37352535**

Article Published Date : May 31, 2023

Authors : Areli Limon-Rojas, Amaury Pozos-Guillén, Roberto Salgado-Delgado, Margarita Rodríguez Y Domínguez, Diana María Escobar-García

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)
Additional Keywords : Dose Response : CK(1769) : AC(700)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Multiple myeloma patients with high 18F-sodium fluoride metabolic active volume had shorter overall survival.

Pubmed Data : Am J Nucl Med Mol Imaging. 2020 ;10(4):151-160. Epub 2020 Aug 25. PMID: **32929393**

Article Published Date : Dec 31, 2019

Authors : Mahdi Zirakchian Zadeh, Siavash Mehdizadeh Seraj, Brian Østergaard, Stephanie Mimms, William Y Raynor, Mahmoud Aly, Austin J Borja, Leila S Arani, Oke Gerke, Thomas J Werner, Hongming Zhuang, Mona-Elisabeth Revheim, Niels Abildgaard, Poul Flemming Høilund-Carlsen, Abass Alavi

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Multiple Myeloma : CK(414) : AC(159)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

N-acetylcysteine alleviates fluoride-induced testicular apoptosis by modulating IRE1α/JNK signaling and nuclear Nrf2 activation.

Pubmed Data : Reprod Toxicol. 2019 03 ;84:98-107. Epub 2019 Jan 8. PMID: **30633982**

Article Published Date : Dec 31, 2018

Authors : Yazhen Hu, Yawei Wang, Ting Yan, Demin Feng, Yue Ba, Huizhen Zhang, Jingyuan Zhu, Xuemin Cheng, Liuxin Cui, Hui Huang

Study Type : Animal Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(1429) : AC(366)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

N-acetylcysteine and thymoquinone have renoprotective effects of against the toxicity of fluoride via multiple mechanisms.

Pubmed Data : Biomed Res Int. 2018 ;2018:5614803. Epub 2018 Jun 28. PMID: **30050936**

Article Published Date : Dec 31, 2017

Authors : Ahlam M Alhusaini, Laila M Faddah, Naglaa F El Orabi, Iman H Hasan

Study Type : Animal Study
Additional Links
Substances : Cysteine (see N-Acetylcysteine) : CK(111) : AC(33), Thymoquinone : CK(1178) : AC(692)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Glutathione Upregulation : CK(357) : AC(109), Nrf2 activation : CK(2908) : AC(1762), Renoprotective : CK(4133) : AC(1932), Superoxide Dismutase Up-regulation : CK(2327) : AC(896), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

NaF-induced gut microbiota alteration mediates severe intestinal cell injury.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Sep 15 ;283:116816. Epub 2024 Aug 2. PMID: **39096685**

Article Published Date : Sep 14, 2024

Authors : Haonan Huang, Yu Lin, Jinge Xin, Ning Sun, Zhifang Zhao, Hesong Wang, Lixiao Duan, Yanxi Zhou, Xingmei Liu, Jing Fang, Bo Jing, Kangcheng Pan, Yan Zeng, Dong Zeng, Hao Li, Hailin Ma, Yang Bai, Limin Wei, Xueqin Ni

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Antibiotics : CK(847) : AC(171), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

NaF-induced neurotoxicity via activation of the IL-1β/JNK signaling pathway.

Pubmed Data : Toxicology. 2022 Mar 15 ;469:153132. Epub 2022 Feb 13. PMID: **35172196**

Article Published Date : Mar 14, 2022

Authors : Chengzhi Zhang, Yanmei Yang, Yanhui Gao, Dianjun Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Naringin alleviates fluoride-induced neurological impairment.

Pubmed Data : Sci Total Environ. 2024 Oct 22:177073. Epub 2024 Oct 22. PMID: **39447898**

Article Published Date : Oct 21, 2024

Authors : Yuhui Du, Guoqing Wang, Bin Liu, Meng Guo, Xi Yan, Ming Dou, Fangfang Yu, Yue Ba, Guoyu Zhou

Study Type : Animal Study
Additional Links
Substances : Citrus naringin : CK(440) : AC(245)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Naringin can be a useful treatment to avoid the neurological effects of fluoride.

Pubmed Data : Biomed Rep. 2024 Jun ;20(6):97. Epub 2024 Apr 29. PMID: **38765862**

Article Published Date : May 31, 2024

Authors : Ravindra Shantakumar Swamy, Nitesh Kumar, Smita Shenoy, Naveen Kumar, Vanishree Rao

Study Type : Animal Study
Additional Links
Substances : Citrus naringin : CK(440) : AC(245)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Nigella sativa oil restores hormonal levels, and endocrine signals among thyroid, ovarian, and uterine tissues.

Pubmed Data : Biomed Pharmacother. 2023 Dec 25 ;170:116080. Epub 2023 Dec 25. PMID: **38147737**

Article Published Date : Dec 24, 2023

Authors : Mona M Elghareeb, Gehad E Elshopakey, Shaymaa Rezk, Ahmed Ateya, Eman S El-Ashry, Mustafa Shukry, Heba I Ghamry, Badriyah S Alotaibi, Nada M A Hashem

Study Type : Animal Study
Additional Links
Substances : Nigella sativa (aka Black Seed) : CK(1911) : AC(493)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Novel pathways of fluoride-induced hepatotoxicity: P53-dependent ferroptosis induced by the SIRT1/FOXOs pathway and Nrf2/HO-1 pathway.

Pubmed Data : Comp Biochem Physiol C Toxicol Pharmacol. 2023 Feb ;264:109526. Epub 2022 Nov 29. PMID: **36455829**

Article Published Date : Jan 31, 2023

Authors : Dongxu Wang, Kai Yin, Yue Zhang, Hongmin Lu, Lulu Hou, Hongjing Zhao, Mingwei Xing

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

PRKAA1 induces aberrant mitophagy in a PINK1/Parkin-dependent manner, contributing to fluoride-induced developmental neurotoxicity.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Apr 15 ;255:114772. Epub 2023 Mar 14. PMID: **36924562**

Article Published Date : Apr 14, 2023

Authors : Yanling Tang, Jingjing Zhang, Zeyu Hu, Wanjing Xu, Panpan Xu, Yue Ma, Hengrui Xing, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162),

Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Physiologic conditions affect toxicity of ingested industrial fluoride.

Pubmed Data : J Environ Public Health. 2013 ;2013:439490. Epub 2013 Jun 6. PMID: **23840230**

Article Published Date : Jan 01, 2013

Authors : Richard Sauerheber

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Public Drinking Water : CK(37) : AC(7)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Pomegranate juice could protect against sodium fluoride induced oxidative injury.

Pubmed Data : Can J Physiol Pharmacol. 2016 Feb 12:1-10. Epub 2016 Feb 12. PMID: **27124270**

Article Published Date : Feb 11, 2016

Authors : Asma Bouasla, Ihcène Bouasla, Amel Boumendjel, Cherif Abdennour, Abdelfattah El Feki, Mahfoud Messarah

Study Type : Animal Study
Additional Links
Substances : Pomegranate : CK(1779) : AC(570)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Prophylactic Agents : CK(1334) : AC(313)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Potential ameliorative effect of Artemisia absinthium supplement against sodium fluoride-induced prostatic toxicity.

Pubmed Data : Arch Razi Inst. 2022 04 ;77(2):907-913. Epub 2022 Apr 30. PMID: **36284952**

Article Published Date : Dec 31, 2021

Authors : H Shakir Saleh, S Yahya Kraidi, W Ali Mahdi

Study Type : Animal Study
Additional Links
Substances : Wormwood : CK(102) : AC(47)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Cytoprotective : CK(797) : AC(393)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Potential risk of dental fluorosis associated with different baby formulas and water brands marketed in Spain.

Pubmed Data : J Clin Pediatr Dent. 2024 Jan ;48(1):111-119. Epub 2024 Jan 3. PMID: **38239163**

Article Published Date : Dec 31, 2023

Authors : Sandra M Gallego-Reyes, Jaime A Cury, Amparo Pérez-Silva, Clara Serna-Muñoz, Icíar Fernández-Pizarro, Yolanda Martínez-Beneyto, Antonio J Ortiz-Ruiz

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Infant Formula : CK(659) : AC(97), Sodium Fluoride : CK(1446) : AC(393)

Potential role of fluoride in the etiopathogenesis of Alzheimer's disease.

Pubmed Data : Int J Mol Sci. 2018 Dec 9 ;19(12). Epub 2018 Dec 9. PMID: **30544885**

Article Published Date : Dec 08, 2018

Authors : Marta Goschorska, Irena Baranowska-Bosiacka, Izabela Gutowska, Emilia Metryka, Marta Skórka-Majewicz, Dariusz Chlubek

Study Type : Review
Additional Links
Diseases : Alzheimer's Disease : CK(4948) : AC(2148), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Prenatal fluoride exposure and attention deficit hyperactivity disorder (ADHD) symptoms in children.

Pubmed Data : Environ Int. 2018 Dec ;121(Pt 1):658-666. Epub 2018 Oct 10. PMID: **30316181**

Article Published Date : Nov 30, 2018

Authors : Morteza Bashash, Maelle Marchand, Howard Hu, Christine Till, E Angeles Martinez-Mier, Brisa N Sanchez, Niladri Basu, Karen E Peterson, Rivka Green, Lourdes Schnaas, Adriana Mercado-García, Mauricio Hernández-Avila, Martha María Téllez-Rojo

Study Type : Human Study
Additional Links
Diseases : Attention Deficit Disorder with Hyperactivity : CK(633) : AC(84), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prenatal fluoride exposure and cognitive outcomes in children at 4 and 6-12 years of age in Mexico.

Pubmed Data : Environ Health Perspect. 2017 Sep 19 ;125(9):097017. Epub 2017 Sep 19. PMID: **28937959**

Article Published Date : Sep 18, 2017

Authors : Morteza Bashash, Deena Thomas, Howard Hu, E Angeles Martinez-Mier, Brisa N Sanchez, Niladri Basu, Karen E Peterson, Adrienne S Ettinger, Robert Wright, Zhenzhen Zhang, Yun Liu, Lourdes Schnaas, Adriana Mercado-García, Martha María Téllez-Rojo, Mauricio Hernández-Avila

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Probiotic alleviate fluoride-induced memory impairment by reconstructing gut microbiota in mice.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Jun 1 ;215:112108. Epub 2021 Mar 30. PMID: **33799132**

Article Published Date : May 31, 2021

Authors : Jinge Xin, Hesong Wang, Ning Sun, Shamsuddin Bughio, Dong Zeng, Lianxin Li, Yanyan Wang, Abdul Khalique, Yan Zeng, Kangcheng Pan, Bo Jing, Hailin Ma, Yang Bai, Xueqin Ni

Study Type : Animal Study
Additional Links
Substances : Probiotics : CK(9684) : AC(1696)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Pharmacological Actions : Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prolonged fluoride exposure alters neurotransmission and oxidative stress in the zebrafish brain.

Pubmed Data : Neurotoxicology. 2022 Mar ;89:92-98. Epub 2022 Jan 20. PMID: **35065950**

Article Published Date : Feb 28, 2022

Authors : Eduardo Ronconi Dondossola, Suzielen Damin Pacheco, Sulingue Casagrande Visentin, Niuany Viel Mendes, Samira Leila Baldin, Henrique Teza Bernardo, Rahisa Scussel, Eduardo Pacheco Rico

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Prolonged fluoride exposure induces spatial-memory deficit and hippocampal dysfunction by inhibiting small heat shock protein 22 in mice.

Pubmed Data : J Hazard Mater. 2023 Aug 15 ;456:131595. Epub 2023 May 7. PMID: **37224709**

Article Published Date : Aug 14, 2023

Authors : Jinge Xin, Bin Zhu, Hesong Wang, Yong Zhang, Ning Sun, Xi Cao, Liqin Zheng, Yanxi Zhou, Jing Fang, Bo Jing, Kangcheng Pan, Yan Zeng, Dong Zeng, Fali Li, Yang Xia, Peng Xu, Xueqin Ni

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prolonged ingestion of fluoride through drinking water, particularly with high doses, induced significant histopathological and biochemical changes leading to myocardial tissue damage.

Pubmed Data : Hum Exp Toxicol. 2005 Feb;24(2):79-87. PMID: **15850282**

Article Published Date : Feb 01, 2005

Authors : Ekrem Cicek, Gulsen Aydin, Mehmet Akdogan, Huseyin Okutan

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Protective effect of curcumin on hippocampal and behaviour changes in rats exposed to fluoride during pre- and post-natal period.

Pubmed Data : Basic Clin Neurosci. 2020 May-Jun;11(3):289-299. Epub 2020 May 1. PMID: **32963722**

Article Published Date : Apr 30, 2020

Authors : Nagapuri Kiran Kumar, Mesram Nageshwar, Karnati Pratap Reddy

Study Type : Animal Study
Additional Links
Substances : Curcumin : CK(6902) : AC(3215)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Protective effect of quercetin and ginger extract against dimethoate potentiated fluoride-induced nephrotoxicity.

Pubmed Data : Foods. 2023 May 5 ;12(9). Epub 2023 May 5. PMID: **37174437**

Article Published Date : May 04, 2023

Authors : Priyanka Sharma, Pawan Kumar Verma, Shilpa Sood, Rasia Yousuf, Amit Kumar, Rajinder Raina, Muhammad Asim Shabbir, Zuhaib F Bhat

Study Type : Animal Study
Additional Links
Substances : Ginger : CK(1591) : AC(477), Quercetin : CK(1864) : AC(847)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Purple corn anthocyanins protect against fluoride-induced oxidative damage of liver and kidney in rats.

Pubmed Data : Int J Environ Res Public Health. 2014 Jan 13 ;11(1):1020-33. Epub 2014 Jan 13. PMID: **24419046**

Article Published Date : Jan 12, 2014

Authors : Zhuo Zhang, Bo Zhou, Hiaohong Wang, Fei Wang, Yingli Song, Shengnan Liu, Shuhua Xi

Study Type : Animal Study
Additional Links
Substances : Corn: Purple : CK(32) : AC(18)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Quercetin has a protective effect against sodium fluoride induced oxidative stress in rat's heart.

Pubmed Data : Food Funct. 2012 Feb 8. Epub 2012 Feb 8. PMID: **22314573**

Article Published Date : Feb 08, 2012

Authors : Seyed Fazel Nabavi, Seyed Mohammad Nabavi, Morteza Mirzaei, Akbar Hajizadeh Moghaddam

Study Type : Animal Study
Additional Links
Substances : Quercetin : CK(1864) : AC(847)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Cardioprotective : CK(8685) : AC(2877)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Oxidant : CK(646) : AC(246)

Relation between dental fluorosis and intelligence quotient in school children of Bagalkot district.

Pubmed Data : J Indian Soc Pedod Prev Dent. 2011 ;29(2):117-20. PMID: **21911949**

Article Published Date : Dec 31, 2010

Authors : P K Shivaprakash, Kushagra Ohri, Hina Noorani

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Relationship between dental fluorosis and intelligence quotient of school going children.

Pubmed Data : J Clin Diagn Res. 2015 Nov ;9(11):ZC10-5. Epub 2015 Nov 1. PMID: **26673535**

Article Published Date : Oct 31, 2015

Authors : Suleman Abbas Khan, Rahul Kumar Singh, Saumya Navit, Dheera Chadha, Nikita Johri, Pragati Navit, Anshul Sharma, Rachana Bahuguna

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Relatively low fluoride in drinking water increases risk of knee osteoarthritis.

Pubmed Data : Environ Geochem Health. 2023 Nov ;45(11):8735-8747. Epub 2023 Sep 16. PMID: **37715839**

Article Published Date : Oct 31, 2023

Authors : Xinyue Meng, Jian Wang, Yang Liu, Mang Li, Zhizhong Guan, Alphonse Sowanoua, Dan Yang, Junrui Pei, Yanhui Gao

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Osteoarthritis: Knee : CK(2278) : AC(267)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Riboflavin alleviates fluoride-induced ferroptosis by IL-17A-independent system Xc-/GPX4 pathway and iron metabolism in testicular Leydig cells.

Pubmed Data : Environ Pollut. 2024 Jan 8 ;344:123332. Epub 2024 Jan 8. PMID: **38199481**

Article Published Date : Jan 07, 2024

Authors : Xiang Li, Jie Yang, Erbao Shi, Yiguang Lu, Xiaochao Song, Huifeng Luo, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Substances : Riboflavin (Vitamin B-2) : CK(409) : AC(71)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Risk assessment of fluoride intake from tea in the republic of Ireland and its implications for public health and water fluoridation.

Pubmed Data : Int J Environ Res Public Health. 2016 Feb 26 ;13(3). Epub 2016 Feb 26. PMID: **26927146**

Article Published Date : Feb 25, 2016

Authors : Declan T Waugh, William Potter, Hardy Limeback, Michael Godfrey

Study Type : In Vitro Study
Additional Links
Substances : Black Tea : CK(1050) : AC(265)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Role of Spirulina in mitigating hemato-toxicity in Swiss albino mice exposed to aluminum and aluminum fluoride.

Pubmed Data : Environ Sci Pollut Res Int. 2016 Dec ;23(24):25280-25287. Epub 2016 Sep 29. PMID: **27687764**

Article Published Date : Nov 30, 2016

Authors : Shweta Sharma, K P Sharma, Subhasini Sharma

Study Type : Animal Study
Additional Links
Substances : Spirulina : CK(1017) : AC(292)
Diseases : Aluminum Toxicity : CK(685) : AC(308), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Cytoprotective : CK(797) : AC(393)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Role of fluoride induced histone trimethylation in development of skeletal fluorosis.

Pubmed Data : Environ Toxicol Pharmacol. 2018 Jan ;57:159-165. Epub 2017 Dec 17. PMID: **29275289**

Article Published Date : Dec 31, 2017

Authors : Atul P Daiwile, Saravanadevi Sivanesan, Prashant Tarale, Pravin K Naoghare, Amit Bafana, Devendra Parmar, Krishnamurthi Kannan

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Royal jelly reduces fluoride induced testicular damage and infertility.

Pubmed Data : Reprod Sci. 2023 May 12. Epub 2023 May 12. PMID: **37171774**

Article Published Date : May 11, 2023

Authors : Gozde Parlak, Abdullah Aslan, Gaffari Turk, Tuncay Kuloglu, Merve Kavak Balgetir, Ozlem Gok, Seda Beyaz, Akif Evren Parlak, Serap Dayan Cinkara

Study Type : Animal Study
Additional Links
Substances : Royal Jelly : CK(634) : AC(234)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Fluoride : CK(1815) : AC(454)

Royal jelly regulates the caspase, Bax and COX-2, TNF-α protein pathways in the fluoride exposed lung damage in rats.

Pubmed Data : Tissue Cell. 2022 Feb 7 ;76:101754. Epub 2022 Feb 7. PMID: **35158127**

Article Published Date : Feb 06, 2022

Authors : Abdullah Aslan, Ozlem Gok, Seda Beyaz, Muhammed Ismail Can, Gozde Parlak, Ramazan Gundogdu, Ibrahim Hanifi Ozercan, Serpil Baspinar

Study Type : Animal Study
Additional Links
Substances : Royal Jelly : CK(634) : AC(234)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lung Damage : CK(390) : AC(167)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Cyclooxygenase 2 Inhibitors : CK(2067) : AC(1279), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

School children residing in area with higher than normal water fluoride level demonstrated more impaired development of intelligence.

Pubmed Data : J Indian Soc Pedod Prev Dent. 2015 ;33(4):307-11. PMID: **26381633**

Article Published Date : Dec 31, 2014

Authors : Shibu Thomas Sebastian, S Sunitha

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Selenium attenuates apoptosis and p-AMPK expressions in fluoride-induced NRK-52E cells.

Pubmed Data : Environ Sci Pollut Res Int. 2019 May ;26(15):15685-15697. Epub 2019 Apr 4. PMID: **30949948**

Article Published Date : Apr 30, 2019

Authors : Jiping Gao, Yu Wang, Guoqiang Xu, Jianing Wei, Kai Chang, Xiaolin Tian, Maolin Liu, Xiaoyan Yan, Meijun Huo, Guohua Song

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Selenium exerts protective effects against fluoride-induced apoptosis and oxidative stress.

Pubmed Data : Biol Trace Elem Res. 2020 Jul 1. Epub 2020 Jul 1. PMID: **32613488**

Article Published Date : Jun 30, 2020

Authors : Jiping Gao, Xiaolin Tian, Xiaoru Yan, Yu Wang, Jianing Wei, Xiaotang Wang, Xiaoyan Yan, Guohua Song

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sesamin alleviated fluoride - induced thyroid endocrine disruption.

Pubmed Data : Aquat Toxicol. 2023 Aug ;261:106625. Epub 2023 Jul 4. PMID: **37407302**

Article Published Date : Jul 31, 2023

Authors : Tianyu Wang, Shanshan Wu, Jianjie Chen, Lijuan Li, Jinling Cao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Thyroid Diseases : CK(348) : AC(52)
Pharmacological Actions : Cytoprotective : CK(797) : AC(393)
Additional Keywords : Gene Expression Regulation : CK(1399) : AC(621)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sesamin plays an important role in maintaining hepatic health and preventing liver from toxic damage caused by fluoride.

Pubmed Data : Fish Shellfish Immunol. 2020 Nov ;106:715-723. Epub 2020 Aug 26. PMID: **32860904**

Article Published Date : Oct 31, 2020

Authors : Jinling Cao, Cuiping Feng, Lingtian Xie, Lijuan Li, Jianjie Chen, Shaojun Yun, Wenjing Guo, Tianyu Wang, Yijie Wu, Rui Meng, Guodong Wang, Xinjing He, Yongju Luo

Study Type : Animal Study
Additional Links
Substances : Sesamin : CK(207) : AC(94)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Fluoride : CK(1815) : AC(454)

Sodium flouride exposure during pregnancy may interfere with normal development and increase the risk of neurological and psychiatric disorders in adulthood.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2010 Jun;14(6):507-12. PMID: **20712257**

Article Published Date : Jun 01, 2010

Authors : P Flace, V Benagiano, D Vermesan, R Sabatini, A M Inchingolo, A Inchingolo, P Auteri, G Ambrosi, A Tarullo, R Cagiano

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Huntington Disease : CK(222) : AC(103), Obsessive-Compulsive Disorder : CK(421) : AC(77), Prenatal Chemical Exposures : CK(2428) : AC(530), Schizophrenia : CK(1080) : AC(191), Tourette Syndrome : CK(207) : AC(30)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Teratogenic : CK(325) : AC(66)

Sodium fluoride (NaF) causes toxic effects on splenic development in mice.

Pubmed Data : Oncotarget. 2017 Jan 17 ;8(3):4703-4717. PMID: **28002795**

Article Published Date : Jan 16, 2017

Authors : Ping Kuang, Huidan Deng, Hengmin Cui, Lian Chen, Jing Fang, Zhicai Zuo, Junliang Deng, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride activates ERK and JNK via induction of oxidative stress to promote apoptosis and impairs ovarian function in rats.

Pubmed Data : J Hazard Mater. 2014 May 15 ;272:75-82. Epub 2014 Mar 18. PMID: **24681588**

Article Published Date : May 14, 2014

Authors : Yanqing Geng, Yiwen Qiu, Xueqing Liu, Xuemei Chen, Yubin Ding, Shangjing Liu, Yi Zhao, Rufei Gao, Yingxiong Wang, Junlin He

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride administrated in drinking water of 2, 4, and 6 ppm concentration for 6 months to male rats adversely affected their fertility and reproductive system.

Pubmed Data : Toxicol Ind Health. 2007 Oct;23(9):507-13. PMID: **18681235**

Article Published Date : Oct 01, 2007

Authors : R S Gupta, T I Khan, D Agrawal, J B S Kachhawa

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride adversely affects ovarian development and reproduction in Drosophila melanogaster.

Pubmed Data : Chemosphere. 2017 Jul 29 ;186:51-61. Epub 2017 Jul 29. PMID: **28763637**

Article Published Date : Jul 28, 2017

Authors : Salma Khatun, Prem Rajak, Moumita Dutta, Sumedha Roy

Study Type : In Vitro Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride and fluoride contaminated ground water induced altered reproductive performances in male rats.

Pubmed Data : Biol Trace Elem Res. 2020 Jun ;195(2):544-550. Epub 2019 Aug 28. PMID: **31463763**

Article Published Date : May 31, 2020

Authors : B Chaithra, H N Sarjan, Shivabasavaiah

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride caused hepatic inflammatory responses and significantly inhibited the production of anti-inflammatory mediators.

Pubmed Data : Biol Trace Elem Res. 2018 Jul 30. Epub 2018 Jul 30. PMID: **30062462**

Article Published Date : Jul 29, 2018

Authors : Linlin Chen, Ping Kuang, Huan Liu, Qin Wei, Hengmin Cui, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Sodium fluoride causes oxidative stress and apoptosis in cementoblasts.

Pubmed Data : Chem Biol Interact. 2018 Aug 18 ;294:34-39. Epub 2018 Aug 18. PMID: **30130527**

Article Published Date : Aug 17, 2018

Authors : Jing Ni, Yiming Li, Wu Zhang, Rong Shu, Zhe Zhong

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Gingivitis : CK(595) : AC(86)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Sodium fluoride causes oxidative stress and apoptosis in the mouse liver.

Pubmed Data : Aging (Albany NY). 2017 Jun 27 ;9(6):1623-1639. PMID: **28657544**

Article Published Date : Jun 26, 2017

Authors : Yujiao Lu, Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Sodium fluoride could induce apoptosis in splenic lymphocytes.

Pubmed Data : Oncotarget. 2016 Sep 16. Epub 2016 Sep 16. PMID: **27655720**

Article Published Date : Sep 15, 2016

Authors : Huidan Deng, Ping Kuang, Hengmin Cui, Lian Chen, Jing Fang, Zhicai Zuo, Junliang Deng, Xun Wang, Ling Zhao

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride disrupts testosterone biosynthesis by affecting the steroidogenic pathway in TM3 Leydig cells.

Pubmed Data : Chemosphere. 2018 Dec ;212:447-455. Epub 2018 Aug 22. PMID: **30165274**

Article Published Date : Nov 30, 2018

Authors : Banu Orta Yilmaz, Ahu Korkut, Melike Erkan

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Low Testosterone : CK(852) : AC(140), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride disturbs DNA methylation of NNAT and declines oocyte quality by impairing glucose transport in porcine oocytes.

Pubmed Data : Environ Mol Mutagen. 2017 Dec 29. Epub 2017 Dec 29. PMID: **29285797**

Article Published Date : Dec 28, 2017

Authors : Xiaoyan Liu, Zheng-Wen Nie, Ying-Ying Gao, Li Chen, Shu-Yuan Yin, Xia Zhang, Cuifang Hao, Yi-Liang Miao

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride during gestation and lactation increased mandibular area and bone volume of pups.

Pubmed Data : Biol Trace Elem Res. 2018 Feb 6. Epub 2018 Feb 6. PMID: **29411324**

Article Published Date : Feb 05, 2018

Authors : Victoria Interlandi, Pablo A Fontanetti, Rubén H Ponce, Raquel V Gallará, Viviana A Centeno

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride exposure changed histological structure and ultrastructure of hypothalamus–pituitary–testicular axis and significantly increased the malformation ratio of sperm.

Pubmed Data : Chemosphere. 2015 Sep ;135:297-303. Epub 2015 May 15. PMID: **25966048**

Article Published Date : Aug 31, 2015

Authors : Haijun Han, Zilong Sun, Guangying Luo, Chong Wang, Ruifen Wei, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride exposure exerts toxic effects on porcine oocyte maturation.

Pubmed Data : Sci Rep. 2017 Dec 6 ;7(1):17082. Epub 2017 Dec 6. PMID: **29213094**

Article Published Date : Dec 05, 2017

Authors : Shuang Liang, Zheng-Wen Nie, Minghui Zhao, Ying-Jie Niu, Kyung-Tae Shin, Xiang-Shun Cui

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride impairs splenic innate immunity via inactivation of TLR2/MyD88 signaling pathway in mice.

Pubmed Data : Chemosphere. 2019 Dec ;237:124437. Epub 2019 Jul 23. PMID: **31356994**

Article Published Date : Nov 30, 2019

Authors : Ping Kuang, Hongrui Guo, Huidan Deng, Hengmin Cui, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induced skeletal muscle changes: Degradation of proteins and signaling mechanism.

Pubmed Data : Environ Pollut. 2019 Jan ;244:534-548. Epub 2018 Oct 10. PMID: **30384060**

Article Published Date : Dec 31, 2018

Authors : P Sudheer Shenoy, Utsav Sen, Saketh Kapoor, Anu V Ranade, Chitta R Chowdhury, Bipasha Bose

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induces apoptosis in H9c2 cardiomyocytes.

Pubmed Data : Biol Trace Elem Res. 2015 Aug ;166(2):210-5. Epub 2015 Feb 25. PMID: **25707396**

Article Published Date : Jul 31, 2015

Authors : Xiaoyan Yan, Xia Yang, Xianhui Hao, Qiurong Ren, Jiping Gao, Yu Wang, Na Chang, Yulan Qiu, Guohua Song

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209)

Sodium fluoride induces apoptosis in mouse embryonic stem cells through ROS-dependent and caspase- and JNK-mediated pathways.

Pubmed Data : Toxicol Appl Pharmacol. 2012 Mar 15 ;259(3):329-37. Epub 2012 Jan 21. PMID: **22285274**

Article Published Date : Mar 14, 2012

Authors : Tam Dan Nguyen Ngoc, Young-Ok Son, Shin-Saeng Lim, Xianglin Shi, Jong-Ghee Kim, Jung Sun Heo, Youngji Choe, Young-Mi Jeon, Jeong-Chae Lee

Study Type : In Vitro Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Sodium fluoride induces apoptosis in mouse splenocytes by activating ROS-dependent NF-κB signaling.

Pubmed Data : Oncotarget. 2017 Dec 29 ;8(70):114428-114441. Epub 2017 Dec 1. PMID: **29383091**

Article Published Date : Dec 28, 2017

Authors : Huidan Deng, Ping Kuang, Hengmin Cui, Qin Luo, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Immunotoxic : CK(507) : AC(127)

Sodium fluoride induces apoptosis in the kidney of rats through caspase-mediated pathways and DNA damage.

Pubmed Data : J Physiol Biochem. 2014 Sep ;70(3):857-68. Epub 2014 Aug 27. PMID: **25158646**

Article Published Date : Aug 31, 2014

Authors : Guo Hua Song, Ji Ping Gao, Chun Fang Wang, Chao Yang Chen, Xiao Yan Yan, Min Guo, Yu Wang, Fu Bing Huang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Renotoxic : CK(56) : AC(20)

Sodium fluoride induces hypertension and cardiac complications in animals.

Pubmed Data : Environ Toxicol. 2016 Jul 5. Epub 2016 Jul 5. PMID: **27378751**

Article Published Date : Jul 04, 2016

Authors : Ademola Adetokunbo Oyagbemi, Temidayo Olutayo Omobowale, Ebunoluwa Racheal Asenuga, Abiola Olumuyiwa Adejumobi, Temitayo Olabisi Ajibade, Temitope Moses Ige, Blessing Seun Ogunpolu, Adeolu Alex Adedapo, Momoh Audu Yakubu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Hypertensive : CK(266) : AC(30), Inflammatory : CK(541) : AC(169)

Sodium fluoride induces nephrotoxicity via oxidative stress-regulated mitochondrial SIRT3 signaling pathway.

Pubmed Data : Sci Rep. 2017 Apr 6 ;7(1):672. Epub 2017 Apr 6. PMID: **28386112**

Article Published Date : Apr 05, 2017

Authors : Chao Song, Beibei Fu, Jingcheng Zhang, Jiamin Zhao, Mengke Yuan, Wei Peng, Yong Zhang, Haibo Wu

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Renotoxic : CK(56) : AC(20)

Sodium fluoride induces renal inflammatory responses and reduces anti-inflammatory cytokine expression in mice.

Pubmed Data : Oncotarget. 2017 Oct 6 ;8(46):80192-80207. Epub 2017 Jul 5. PMID: **29113295**

Article Published Date : Oct 05, 2017

Authors : Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induces skeletal muscle atrophy.

Pubmed Data : PLoS One. 2022 ;17(12):e0279261. Epub 2022 Dec 22. PMID: **36548359**

Article Published Date : Dec 31, 2021

Authors : Apoorva H Nagendra, Animikh Ray, Debajit Chaudhury, Akash Mitra, Anu Vinod Ranade, Bipasha Bose, Sudheer Shenoy P

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Muscle Atrophy : CK(287) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induces the splenic apoptosis.

Pubmed Data : Aging (Albany NY). 2016 Dec 27 ;8(12):3552-3567. PMID: **28039491**

Article Published Date : Dec 26, 2016

Authors : Huidan Deng, Ping Kuang, Hengmin Cui, Lian Chen, Qin Luo, Jing Fang, Zhicai Zuo, Junliang Deng, Xun Wang, Ling Zhao

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Sodium fluoride may adversely affect early embryonic development by disrupting the methylation of H19 and Peg3 through downregulation of DNMT1.

Pubmed Data : Cytogenet Genome Res. 2015 Dec 4. Epub 2015 Dec 4. PMID: **26633825**

Article Published Date : Dec 03, 2015

Authors : Lei Zhao, Sheng Zhang, Xinglan An, Wentao Tan, Bo Tang, Xueming Zhang, Ziyi Li

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Methylation Downregulation : CK(5) : AC(3), Transgenerational Epigenetic Modification : CK(241) : AC(91)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride promotes apoptosis by generation of reactive oxygen species in human lymphocytes.

Pubmed Data : J Toxicol Environ Health A. 2014 ;77(21):1269-80. PMID: **25268553**

Article Published Date : Dec 31, 2013

Authors : Manivannan Jothiramajayam, Sonali Sinha, Manosij Ghosh, Anish Nag, Aditi Jana, Anita Mukherjee

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Genotoxic : CK(545) : AC(184)

Sodium fluoride suppresses spleen development through MAPK/ERK signaling pathway in mice.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Aug ;241:113764. Epub 2022 Jun 13. PMID: **35709673**

Article Published Date : Jul 31, 2022

Authors : Ping Kuang, Hengmin Cui, Li Yu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Soft drinks as a dietary source of fluoride exposure.

Pubmed Data : Biol Trace Elem Res. 2024 Aug ;202(8):3816-3828. Epub 2023 Nov 3. PMID: **37922070**

Article Published Date : Jul 31, 2024

Authors : Samuel Alejandro-Vega, Arturo Hardisson, Carmen Rubio, Ángel J Gutiérrez, Juan R Jaudenes-Marrero, Soraya Paz-Montelongo

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393), Sugar Sweetened Beverages : CK(1467) : AC(153)

Spirulina and tamarind fruit pulp reduced fluoride toxicity and led to better recovery of treated mice after withdrawal.

Pubmed Data : Indian J Exp Biol. 2016 Jan ;54(1):44-55. PMID: **26891552**

Article Published Date : Dec 31, 2015

Authors : N Yadav, Shweta Sharma, K p Sharma, A Pandey, P Pareek, Subhasini Sharma

Study Type : Animal Study
Additional Links
Substances : Spirulina : CK(1017) : AC(292), Tamarind : CK(143) : AC(41)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Natural Substance Synergy : CK(1339) : AC(657)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Supplementation of ginseng and banaba leaf extracts exhibited protective effects on fluoride toxicated STZ induced nephrotoxicity in mice.

Pubmed Data : Indian J Med Res. 2013 Feb ;137(2):370-9. PMID: **23563382**

Article Published Date : Jan 31, 2013

Authors : Mahaboob P Basha, S M Saumya

Study Type : Animal Study
Additional Links
Substances : Banaba : CK(36) : AC(20), Ginseng : CK(4190) : AC(1902)

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Plant Extracts : CK(18030) : AC(6728)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Diabetogenic : CK(340) : AC(58)

Suppressive effects of sodium fluoride on cultured splenic lymphocyte proliferation in mice.

Pubmed Data : Oncotarget. 2016 Sep 20 ;7(38):61905-61915. PMID: **27542206**

Article Published Date : Sep 19, 2016

Authors : Ping Kuang, Huidan Deng, Hengmin Cui, Lian Chen, Hongrui Guo, Jing Fang, Zhicai Zuo, Junliang Deng, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Synergistic effects of arsenic and fluoride on oxidative stress and apoptotic pathway in Leydig and Sertoli cells.

Pubmed Data : Toxicology. 2022 Jun 15 ;475:153241. Epub 2022 Jun 14. PMID: **35714946**

Article Published Date : Jun 14, 2022

Authors : Yasemin Aydin, Banu Orta-Yilmaz

Study Type : In Vitro Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Synergistic oxidative impact of aluminum chloride and sodium fluoride exposure during early stages of brain development.

Pubmed Data : Environ Sci Pollut Res Int. 2019 Feb 20. Epub 2019 Feb 20. PMID: **30788699**

Article Published Date : Feb 19, 2019

Authors : Amal A Kinawy

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum Chloride : CK(171) : AC(92), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Systematic impacts of fluoride exposure on the metabolomics of rats.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Sep 1 ;242:113888. Epub 2022 Jul 21. PMID: **35872488**

Article Published Date : Aug 31, 2022

Authors : Shiyuan Zhao, Jinxiu Guo, Hongjia Xue, Junjun Meng, Dadi Xie, Xi Liu, Qingqing Yu, Haitao Zhong, Pei Jiang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Systematic review of epidemiological and toxicological evidence on health effects of fluoride in drinking water.

Pubmed Data : Crit Rev Toxicol. 2024 Feb 6:1-33. Epub 2024 Feb 6. PMID: **38318766**

Article Published Date : Feb 05, 2024

Authors : Mohamed Kadry Taher, Franco Momoli, Jennifer Go, Shintaro Hagiwara, Siva Ramoju, Xuefeng Hu, Natalie Jensen, Rowan Terrell, Alex Hemmerich, Daniel Krewski

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

TFE3-mediated impairment of lysosomal biogenesis and defective autophagy contribute to fluoride-induced hepatotoxicity.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Mar 15 ;253:114674. Epub 2023 Feb 22. PMID: **36827899**

Article Published Date : Mar 14, 2023

Authors : Zeyu Hu, Wanjing Xu, Jingjing Zhang, Yanling Tang, Hengrui Xing, Panpan Xu, Yue Ma, Qiang Niu

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Melatonin : CK(2743) : AC(904)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Taurine protected against sodium fluoride induced neurotoxicity.

Pubmed Data : Chem Biol Interact. 2016 Nov 11 ;261:1-10. Epub 2016 Nov 11. PMID: **27840156**

Article Published Date : Nov 10, 2016

Authors : Isaac A Adedara, Amos O Abolaji, Umar F Idris, Bolanle F Olabiyi, Esther M Onibiyo, TeminiJesu D Ojuade, Ebenezer O Farombi

Study Type : Animal Study
Additional Links
Substances : Taurine : CK(246) : AC(71)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Terminalia arjuna protects mouse hearts against sodium flouride induced toxicity.

Pubmed Data : J Med Food. 2008 Dec;11(4):733-40. PMID: **19053867**

Article Published Date : Dec 01, 2008

Authors : Mahua Sinha, Prasenjit Manna, Parames C Sil

Study Type : Animal Study
Additional Links
Substances : Arjuna : CK(19) : AC(6), Terminalia : CK(85) : AC(49)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Cardioprotective : CK(8685) : AC(2877)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Th17-related cytokines involved in fluoride-induced cecal and rectal

barrier damage.

Pubmed Data : Biol Trace Elem Res. 2023 Sep ;201(9):4497-4507. Epub 2022 Dec 20. PMID: **36538210**

Article Published Date : Aug 31, 2023

Authors : Xiao-Ying Gao, Ye Jin, Jing Zhao, Yu-Ling Zhang, Hong-Wei Wang, Bian-Hua Zhou

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Gastrointestinal Inflammation : CK(324) : AC(153)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The accumulation of sodium fluoride alters the neurological function which leads to neurodegenerative disorders.

Pubmed Data : Biol Trace Elem Res. 2020 Aug 31. Epub 2020 Aug 31. PMID: **32865723**

Article Published Date : Aug 30, 2020

Authors : Yugandhar P Reddy, Santosh Tiwari, Lomas K Tomar, Nalini Desai, Varun Kumar Sharma

Study Type : Animal Study
Additional Links
Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The cognitive functions could be impaired in the older people living in high fluoride drinking water areas.

Pubmed Data : BMC Public Health. 2021 Dec 9 ;21(1):2237. Epub 2021 Dec 9. PMID: **34886821**

Article Published Date : Dec 08, 2021

Authors : Chao Ren, Peng Zhang, Xiao-Yan Yao, Hui-Hua Li, Rui Chen, Cai-Yi Zhang, De-Qin Geng

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The dose-response effect of fluoride exposure on the gut microbiome.

Pubmed Data : Metabolites. 2023 Nov 17 ;13(11). Epub 2023 Nov 17. PMID: **37999254**

Article Published Date : Nov 16, 2023

Authors : Zhe Mo, Jian Wang, Xinyue Meng, Ailin Li, Zhe Li, Wenjun Que, Tuo Wang, Korto Fatti Tarnue, Xu Ma, Ying Liu, Shirui Yan, Lei Wu, Rui Zhang, Junrui Pei, Xiaofeng Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

The effect of lycopene on DNA damage and repair in fluoride-treated NRK-52E cell line.

Pubmed Data : Biol Trace Elem Res. 2021 May ;199(5):1979-1985. Epub 2020 Aug 8. PMID: **32770329**

Article Published Date : Apr 30, 2021

Authors : Sedat Çetin, Ayşe Usta, Veysel Yüksek

Study Type : In Vitro Study
Additional Links
Substances : Lycopene : CK(1265) : AC(371)
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The effect of vitamin E and selenium combination in repairing fluoride-induced DNA damage to NRK-52E cells.

Pubmed Data : Mol Biol Rep. 2020 Oct ;47(10):7761-7770. Epub 2020 Oct 6. PMID: **33025505**

Article Published Date : Sep 30, 2020

Authors : Veysel Yüksek, Sedat Çetin, Ayşe Usta

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389), Vitamin E : CK(3039) : AC(570)
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Pharmacological Actions : DNA Repair Up-regulation : CK(110) : AC(34), Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The footprints of mitochondrial fission and apoptosis in fluoride-induced renal dysfunction.

Pubmed Data : Biol Trace Elem Res. 2024 Sep ;202(9):4125-4135. Epub 2023 Dec 7. PMID: **38057486**

Article Published Date : Aug 31, 2024

Authors : Qiyong Zuo, Lin Lin, Yuling Zhang, Mohammad Mehdi Ommati, Hongwei Wang, Jing Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

The influence of fluoride in drinking water on the incidence of fluorosis and intelligence of elementary school students in Palu City.

Pubmed Data : Gac Sanit. 2021 ;35 Suppl 2:S159-S163. PMID: **34929801**

Article Published Date : Dec 31, 2020

Authors : Sri Indah Yani, Arifin Seweng, Anwar Mallongi, Rosmala Nur, Muh Tahir Abdullah, Ummu Salmah, Saifudin Sirajuddin, Muhammad Basir-Cyio, Mahfudz, Alam Anshary

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The influence of fluorides on mouse sperm capacitation.

Pubmed Data : Anim Reprod Sci. 2008 Oct ;108(1-2):157-70. Epub 2007 Aug 6. PMID: **17884311**

Article Published Date : Sep 30, 2008

Authors : K Dvoráková-Hortová, M Sandera, M Jursová, J Vasinová, J Peknicová

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The present study reveals that exposure to fluoride in early stages of rat development leads to impairment of memory in young offspring.

Pubmed Data : Int J Toxicol. 2019 ;38(5):405-414. Epub 2019 Jun 20. PMID: **31220985**

Article Published Date : Dec 31, 2018

Authors : Mariana Bartos, Fernanda Gumilar, Cristina E Gallegos, Cristina Bras, Sergio Dominguez, Liliana M Cancela, Alejandra Minetti

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

The relationship between fluoride exposure and cognitive outcomes from gestation to adulthood-A systematic review.

Pubmed Data : Int J Environ Res Public Health. 2022 Dec 20 ;20(1). Epub 2022 Dec 20. PMID: **36612346**

Article Published Date : Dec 19, 2022

Authors : Banu Preethi Gopu, Liane B Azevedo, Ralph M Duckworth, Murali K P Subramanian, Sherley John, Fatemeh Vida Zohoori

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)

The results suggest that overexposure to fluoride (160-320 µM) can induce cytotoxicity and regulate relevant genes expression.

Pubmed Data : Biol Trace Elem Res. 2015 Mar 1. Epub 2015 Mar 1. PMID: **25726004**

Article Published Date : Feb 28, 2015

Authors : Hong He, Hongmei Wang, Yuguo Jiao, Congli Ma, Han Zhang, Zhou Zhou

Study Type : Human In Vitro
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Dose Response : CK(1769) : AC(700), Gene Expression : CK(282) : AC(104)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The therapeutic effects of Prunella vulgaris against fluoride-induced oxidative damage by using the metabolomics method.

Pubmed Data : Environ Toxicol. 2021 Jun 5. Epub 2021 Jun 5. PMID: **34089294**

Article Published Date : Jun 04, 2021

Authors : Li Li, Li-Mei Lin, Jing Deng, Xiu-Lian Lin, Ya-Mei Li, Bo-Hou Xia

Study Type : Animal Study
Additional Links
Substances : Prunella vulgaris : CK(158) : AC(84)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

The use of fluoride supplements during the first 6 years of life is associated with a significant increase in the risk of developing dental fluorosis.

Pubmed Data : Community Dent Oral Epidemiol. 1999 Feb ;27(1):48-56. PMID: **10086926**

Article Published Date : Jan 31, 1999

Authors : A I Ismail, R R Bandekar

Study Type : Meta Analysis
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The use of hydrofluorosilicic acid contaminated with heavy metals creates a regulatory blind spot that jeopardizes any safe use of fluoride additives

Pubmed Data : Int J Occup Environ Health. 2014 Apr-Jun;20(2):157-66. Epub 2014 Mar 20. PMID: **24999851**

Article Published Date : Apr 01, 2014

Authors : Phyllis J Mullenix

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Hydrofluorosilicic acid (HFS) : CK(3) : AC(2)

There is an increased risk of knee arthritis in patients with elevated blood fluoride levels.

Pubmed Data : Malays Orthop J. 2020 Nov ;14(3):151-154. PMID: **33403076**

Article Published Date : Oct 31, 2020

Authors : V K Singh, K S Rathore, G Khan, A Rahim, A Rashid, S Chauhan

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Osteoarthritis: Knee : CK(2278) : AC(267)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

These findings demonstrate that a fluoride-free diet encouraged pinealocyte proliferation and pineal gland growth in aged animals.

Pubmed Data : Biol Trace Elem Res. 2020 Sep ;197(1):175-183. Epub 2019 Nov 12. PMID: **31713773**

Article Published Date : Aug 31, 2020

Authors : Aaron Mrvelj, Mark D Womble

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(2743) : AC(904)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Pineal Gland Calcification : CK(233) : AC(31)
Problem Substances : Fluoride : CK(1815) : AC(454)

These findings indicate that chronic consumption of high concentrations of fluoride leads to a decrease in nerve conduction velocity.

Pubmed Data : Int J Toxicol. 2024 Nov 6:10915818241297082. Epub 2024 Nov 6. PMID: **39501888**

Article Published Date : Nov 05, 2024

Authors : Fernanda Marlen Enríquez-Sánchez, MiguelÁngel López-Vázquez, María Esther Olvera-Cortés, Liliana Valdez-Jiménez, Paola Trinidad Villalobos-Gutiérrez, María Isabel Pérez-Vega

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702), Neurotransmitter Interference : CK(32) : AC(8)

These findings provided a theoretical basis that melatonin mitigated sodium fluoride induced hepatotoxicity.

Pubmed Data : Free Radic Biol Med. 2017 Nov ;112:616-630. Epub 2017 Sep 11. PMID: **28912098**

Article Published Date : Oct 31, 2017

Authors : Chao Song, Jiamin Zhao, Beibei Fu, Dan Li, Tingchao Mao, Wei Peng, Haibo Wu, Yong Zhang

Study Type : In Vitro Study
Additional Links
Substances : Melatonin : CK(2743) : AC(904)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

These findings reveal that acute fluoride exposure causes sudden heart failure.

Pubmed Data : Int J Cardiol. 2017 Feb 15 ;229:96-101. Epub 2016 Nov 9. PMID: **27863940**

Article Published Date : Feb 14, 2017

Authors : Lakshmikanthan Panneerselvam, Azhwar Raghunath, Ekambaram Perumal

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Heart Failure : CK(1884) : AC(327)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

These results indicated that EGCG possesses a protective effect against fluoride toxicity.

Pubmed Data : Toxicon. 2024 Aug 28 ;247:107857. Epub 2024 Jul 10. PMID: **38996976**

Article Published Date : Aug 27, 2024

Authors : Qian Zhang, Xiuzhi Fei, Yue Li, Hengwei Zhang, Lu Chen, Jianping Ruan, Ning Dong

Study Type : In Vitro Study
Additional Links
Substances : EGCG (Epigallocatechin gallate) : CK(1503) : AC(818)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

These results provide new insights into the mechanism of fluoride-induced hypertension.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Aug ;281:116681. Epub 2024 Jul 4. PMID: **38964063**

Article Published Date : Jul 31, 2024

Authors : Wenjing Yang, Chunqing Lu, Fang Chu, Keming Bu, Hao Ma, Qiaoyu Wang, Zhe Jiao, Sheng Wang, Xiyue Yang, Yanhui Gao, Dianjun Sun, Hongna Sun

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypertension : CK(8603) : AC(1329)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

These results show that sodium fluoride can reduce blood cellular and humoral immune function in mice.

Pubmed Data : Oncotarget. 2017 Oct 17 ;8(49):85504-85515. Epub 2017 Aug 10. PMID: **29156736**

Article Published Date : Oct 16, 2017

Authors : Hongrui Guo, Ping Kuang, Qin Luo, Hengmin Cui, Huidan Deng, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Immunosuppressive : CK(289) : AC(55)

These results suggest that fluoride generates reactive species that cause extensive oxidative modifications in human red blood cells.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Jan 15 ;208:111611. Epub 2020 Nov 10. PMID: **33396131**

Article Published Date : Jan 14, 2021

Authors : Nikhil Maheshwari, Neha Qasim, Ruhi Anjum, Riaz Mahmood

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Oxidant : CK(646) : AC(246)

These results suggest that there are striking differences in salivary microbiome between healthy controls and dental fluorosis patients.

Pubmed Data : J Oral Microbiol. 2023 ;15(1):2180927. Epub 2023 Feb 20. PMID: **36844898**

Article Published Date : Dec 31, 2022

Authors : Shanshan Liu, Qiangsheng Song, Chenchen Zhang, Mengwan Li, Zhenzhen Li, Yudong Liu, Li Xu, Xiaofei Xie, Lili Zhao, Rongxiu Zhang, Qinglong Wang, Guojin Zeng, Yifan Zhang, Kai Zhang

Study Type : Human Study
Additional Links
Diseases : , Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

These results suggest that water fluoridation appears to be producing less impactful effects on oral health.

Pubmed Data : Evid Based Dent. 2024 Sep ;25(3):121-122. Epub 2024 Jul 3. PMID: **38961311**

Article Published Date : Aug 31, 2024

Authors : Darshini Ramasubbu, Jonathan Lewney, Brett Duane

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

This demonstrated ability of fluorine to exert genotoxic effects on bone cells.

Pubmed Data : Toxicol Res. 2020 Oct ;36(4):337-342. Epub 2020 Feb 24. PMID: **33005593**

Article Published Date : Sep 30, 2020

Authors : V P Volobaev, E S Serdyukova, E E Kalyuzhnaya, E A Schetnikova, A D Korotkova, A A Naik, S N Bach, A Y Prosekov, A V Larionov

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Osteosarcoma : CK(422) : AC(285)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

This indicated that along with low sperm quality, sperm mtDNA copy number is also a sensitive biomarker to reflect the sperm toxicity of fluoride.

Pubmed Data : Biochem Biophys Res Commun. 2017 10 21 ;492(3):295-299. Epub 2017 Aug 31. PMID: **28864413**

Article Published Date : Jan 20, 2017

Authors : Zilong Sun, Xingchen Xue, Yuliang Zhang, Ruiyan Niu, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

This study explored the possible mechanism of fluoride induced endothelial cell injury.

Pubmed Data : Toxicology. 2023 Jun 15 ;492:153530. Epub 2023 Apr 28. PMID: **37121536**

Article Published Date : Jun 14, 2023

Authors : Chao Zhang, Yue Wang, Fengya Huang, Yaoyuan Zhang, Yunzhu Liu, Qingbo Wang, Xiaodi Zhang, Bingyun Li, Linet Angwa, Yuting Jiang, Yanhui Gao

Study Type : In Vitro Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826), Endothelial Dysfunction : CK(2710) : AC(571), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

This study has provided new evidence for the role of FGF21/ERK in fluoride-induced skeletal muscle damage.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Mar 1 ;252:114626. Epub 2023 Feb 8. PMID: **36764073**

Article Published Date : Feb 28, 2023

Authors : Lan Ma, Chengmei Zhang, Yu Gui, Tingling Zou, Shuhua Xi, Xiaoying Guo

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Muscle Damage : CK(258) : AC(83)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

This study proved that oxidative stress probably play a major role in NaF-induced apoptosis of Sertoli cells.

Pubmed Data : Int J Environ Health Res. 2015 ;25(1):1-9. Epub 2014 Feb 13. PMID: **24521312**

Article Published Date : Dec 31, 2014

Authors : Yang Yang, Hui Huang, Yue Ba, Xue-Min Cheng, Liu-Xin Cui

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

This study shows the protective effect of neem on sodium fluoride induced hypertension and genotoxicity.

Pubmed Data : J Basic Clin Physiol Pharmacol. 2017 Oct 5. Epub 2017 Oct 5. PMID: **28981443**

Article Published Date : Oct 04, 2017

Authors : Temidayo Olutayo Omóbòwálé, Ademola Adetokunbo Oyagbemi, Bukola Ayokunmi Alaba, Olufunke Eunice Ola-Davies, Olumuyiwa Abiola Adejumobi, Ebunoluwa Racheal Asenuga, Temitayo Olabisi Ajibade, Adeolu Alex Adedapo, Momoh Audu Yakubu

Study Type : Animal Study
Additional Links
Substances : Neem : CK(296) : AC(148)

Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antihypertensive Agents : CK(6936) : AC(1007), Antioxidants : CK(32218) : AC(14161), Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Threshold effects of moderately excessive fluoride exposure on children's health.

Pubmed Data : Environ Int. 2018 Sep ;118:116-124. Epub 2018 Jun 2. PMID: **29870912**

Article Published Date : Aug 31, 2018

Authors : Xingchen Yu, Jingwen Chen, Yonggang Li, Hongliang Liu, Changchun Hou, Qiang Zeng, Yushan Cui, Liang Zhao, Pei Li, Ziquan Zhou, Shuo Pang, Sha Tang, Kunming Tian, Qian Zhao, Lixin Dong, Chunyan Xu, Xiao Zhang, Shun Zhang, Li Liu, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Treadmill exercise could restore the molecular changes caused by excessive sodium fluoride exposure.

Pubmed Data : Biol Trace Elem Res. 2023 Mar 8. Epub 2023 Mar 8. PMID: **36884125**

Article Published Date : Mar 07, 2023

Authors : Ke Liu, Lei Chai, Taotao Zhao, Shaosan Zhang, Jixiang Wang, Yanghuan Yu, Ruiyan Niu, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Therapeutic Actions : Exercise : CK(6247) : AC(999), Exercise: Running : CK(593) : AC(71)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Treatment with rutin against sodium fluoride intoxication has a significant role in protecting F-induced cardiotoxicity, blood toxicity and dyslipidemia in rats.

Pubmed Data : Toxicol Mech Methods. 2015 Feb ;25(2):143-9. Epub 2015 Feb 11. PMID: **25560802**

Article Published Date : Jan 31, 2015

Authors : V Umarani, Sudhakar Muvvala, A Ramesh, B V S Lakshmi, N Sravanthi

Study Type : Animal Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Dyslipidemias : CK(1583) : AC(326), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Cardioprotective : CK(8685) : AC(2877), Hypolipidemic : CK(8317) : AC(1985)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Virgin coconut oil complements with its polyphenol components mitigate sodium fluoride toxicity in vitro and in vivo.

Pubmed Data : Drug Chem Toxicol. 2021 Aug 18:1-7. Epub 2021 Aug 18. PMID: **34407699**

Article Published Date : Aug 17, 2021

Authors : Soorya Parathodi Illam, Sruthi Panniyan Kandiyil, Arunaksharan Narayanankutty, Soumya Valappan Veetil, Thekkekara Devassy Babu, Rao M Uppu, Achuthan C Raghavamenon

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Coconut Oil : CK(478) : AC(106), Polyphenols : CK(2728) : AC(996)

Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Vitamin C attenuates sodium fluoride-induced mitochondrial oxidative stress and apoptosis.

Pubmed Data : Biol Trace Elem Res. 2018 Dec 18. Epub 2018 Dec 18. PMID: **30565018**

Article Published Date : Dec 17, 2018

Authors : Wei Peng, Shangrong Xu, Jun Zhang, Yong Zhang

Study Type : In Vitro Study
Additional Links
Substances : Vitamin C : CK(6030) : AC(1400)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Vitamin D may assist the UPR against sodium fluoride-induced damage.

Pubmed Data : J Trace Elem Med Biol. 2023 Dec ;80:127293. Epub 2023 Aug 26. PMID: **37677921**

Article Published Date : Nov 30, 2023

Authors : Veysel Yüksek, Semiha Dede, Sedat Çetin, Ayşe Usta, Mehmet Taşpınar

Study Type : In Vitro Study
Additional Links
Substances : Vitamin D : CK(11555) : AC(1679)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Vitamin E and lycopene reduce coal burning fluorosis-induced spermatogenic cell apoptosis.

Pubmed Data : Biosci Rep. 2017 Dec 22. Epub 2017 Dec 22. PMID: **29273675**

Article Published Date : Dec 21, 2017

Authors : Yuan Tian, Yuehai Xiao, Bolin Wang, Chao Sun, Kaifa Tang, Fa Sun

Study Type : Animal Study
Additional Links
Substances : Lycopene : CK(1265) : AC(371), Vitamin E : CK(3039) : AC(570)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosis (AC 37) (CK 228)

A comparative evaluation of the fluoride content in commercially available infant formulae in India.

Pubmed Data : J Indian Soc Pedod Prev Dent. 2023 Oct 1 ;41(4):328-334. Epub 2024 Jan 18. PMID: **38235820**

Article Published Date : Sep 30, 2023

Authors : Asha Supriya Satti, Radhika Muppa, Ravichandra Sekhar Kotha, Srikanth Koya, Mrudhula J N Kantipudi, Ch Deepthi Siva Harika

Study Type : In Vitro Study

Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Infant Formula : CK(659) : AC(97), Sodium Fluoride : CK(1446) : AC(393)

A relationship was identified between drinking fluoridated water from wells and the prevalence of fluorosis in individuals up to 18 years old.

Pubmed Data : Acta Odontol Latinoam. 2023 Dec 31 ;36(3):169-176. PMID: **38345279**

Article Published Date : Dec 30, 2023

Authors : Francineudo Oliveira Chagas, Lidia A Rocha Voladas, Ana Sorazabal, Adeyinka Dayo, Jhereza Cf Botelho Dantas, Aldo Squassi

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

A review of the effects of chronic fluorosis on the brain.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Oct 1 ;244:114021. Epub 2022 Aug 29. PMID: **36049331**

Article Published Date : Sep 30, 2022

Authors : Chao Ren, Hui-Hua Li, Cai-Yi Zhang, Xi-Cheng Song

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

An intervention with safe drinking water for 5 years in intervention group-mitigated clinical and subclinical symptoms of fluorosis.

Pubmed Data : Environ Monit Assess. 2018 Feb 2 ;190(3):110. Epub 2018 Feb 2. PMID: **29396763**

Article Published Date : Feb 01, 2018

Authors : Arjun L Khandare, Vakdevi Validandi, Shankar Rao Gourineni, Viswanathan Gopalan, Balakrishna Nagalla

Study Type : Human Study
Additional Links
Substances : Water : CK(209) : AC(47)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

An interventional clinical trial investigating the effects of Spirulina platensis on dental fluorosis and antioxidant system.

Pubmed Data : Sci Rep. 2023 Oct 6 ;13(1):16858. Epub 2023 Oct 6. PMID: **37803131**

Article Published Date : Oct 05, 2023

Authors : Abdellatif Rahim, Mounia Sibaoueih, Adekhalid Essamadi, Bouchra El Amiri

Study Type : Animal Study
Additional Links
Substances : Spirulina : CK(1017) : AC(292)
Diseases : Spirulina : CK(1017) : AC(292), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Apoptosis and inflammation involved with fluoride-induced bone

injuries.

Pubmed Data : Nutrients. 2024 Jul 31 ;16(15). Epub 2024 Jul 31. PMID: **39125380**

Article Published Date : Jul 30, 2024

Authors : Miao Wang, Kangting Luo, Tongtong Sha, Qian Li, Zaichao Dong, Yanjie Dou, Huanxia Zhang, Guoyu Zhou, Yue Ba, Fangfang Yu

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Calcium and vitamin D supplementation effectively alleviates dental and skeletal fluorosis and retain elemental homeostasis in mice.

Pubmed Data : Biol Trace Elem Res. 2021 Aug ;199(8):3035-3044. Epub 2020 Oct 14. PMID: **33057951**

Article Published Date : Jul 31, 2021

Authors : Arpan Dey Bhowmik, Pallab Shaw, Paritosh Mondal, Anindita Chakraborty, Muthammal Sudarshan, Ansuman Chattopadhyay

Study Type : Animal Study
Additional Links
Substances : Calcium : CK(444) : AC(68), Vitamin D : CK(11555) : AC(1679)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Cognitive decline of rats with chronic fluorosis is associated with alterations in hippocampal calpain signaling.

Pubmed Data : Biol Trace Elem Res. 2020 Oct ;197(2):495-506. Epub 2019 Dec 3. PMID: **31797207**

Article Published Date : Sep 30, 2020

Authors : Olga V Nadei, Irina A Khvorova, Natalia I Agalakova

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Dental fluorosis results from fluoride intake by different sources.

Pubmed Data : Gac Med Mex. 2009 Jul-Aug;145(4):263-7. PMID: **20073427**

Article Published Date : Jul 01, 2009

Authors : Luis Fernando Galicia Chacón, María Lilia Adriana Juárez López, Nelly Molina Frechero

Study Type : Human Study
Additional Links
Diseases : Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393), Sugary soda : CK(211) : AC(27)

Effect of Moringa oleifera leaves on hematological profile of fluorosis affected rats.

Pubmed Data : Bioinformation. 2022 ;18(1):14-18. Epub 2022 Jan 31. PMID: **35815197**

Article Published Date : Dec 31, 2021

Authors : Pravallika Pagadala, M S Vinutha Shankar, A Hemalatha, K N Shashidhar

Study Type : Animal Study
Additional Links
Substances : Moringa oleifera : CK(748) : AC(377)

Diseases : Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effect of fluoride exposure on mRNA expression of cav1.2 and calcium signal pathway apoptosis regulators in PC12 cells.

Pubmed Data : Environ Toxicol Pharmacol. 2017 Sep ;54:74-79. Epub 2017 Jun 30. PMID: **28697452**

Article Published Date : Aug 31, 2017

Authors : Qiuxia Liao, Rui Zhang, Xiaoyu Wang, Weiwei Nian, Lulu Ke, Wei Ouyang, Zigui Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Excessive fluoride in water causes severe dental fluorosis and raises fracture risks, urging defluoridation in affected areas.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Sep 1 ;282:116705. Epub 2024 Jul 13. PMID: **39003868**

Article Published Date : Sep 01, 2024

Authors : Zeynab Ghaemi, Masoud Noshadi

Study Type : Human Study
Additional Links
Diseases : Bone Fractures : CK(697) : AC(121), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454)

Exposure to high levels of fluoride may adversely influence children's intelligence development.

Pubmed Data : Zhongguo Dang Dai Er Ke Za Zhi. 2008 Dec;10(6):723-5. PMID: **19102839**

Article Published Date : Dec 01, 2008

Authors : Ming Liu, Cong Qian

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to high-fluoride resulted in lower body weight and exercise capacity in mice.

Pubmed Data : Sci Rep. 2018 Feb 16 ;8(1):3211. Epub 2018 Feb 16. PMID: **29453343**

Article Published Date : Feb 15, 2018

Authors : Sandra L Amaral, Liane B Azevedo, Marilia A R Buzalaf, Mayara F Fabricio, Mileni S Fernandes, Ruth A Valentine, Anne Maguire, Fatemeh V Zohoori

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride concentration in ground water and prevalence of dental fluorosis in Ethiopian Rift Valley.

Pubmed Data : BMC Public Health. 2019 Oct 16 ;19(1):1298. Epub 2019 Oct 16. PMID: **31619212**

Article Published Date : Oct 15, 2019

Authors : Habtamu Demelash, Abebe Beyene, Zewdu Abebe, Addisu Melese

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure provokes mitochondria-mediated apoptosis and increases mitophagy in osteocytes.

Pubmed Data : Biol Trace Elem Res. 2023 Aug ;201(8):3994-4007. Epub 2022 Oct 18. PMID: **36255553**

Article Published Date : Jul 31, 2023

Authors : Yun Zhang, Fanhe Dong, Zihan Wang, Bingbing Xu, Tao Zhang, Qiqi Wang, Qiao Lin

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride in drinking water and skeletal fluorosis: a review of the global impact.

Pubmed Data : Curr Environ Health Rep. 2020 Jun ;7(2):140-146. PMID: **32207100**

Article Published Date : May 31, 2020

Authors : Sakshi Srivastava, S J S Flora

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induces apoptosis in H9c2 cardiomyocytes.

Pubmed Data : Chemosphere. 2017 May 1 ;182:159-165. Epub 2017 May 1. PMID: **28494360**

Article Published Date : Apr 30, 2017

Authors : Xiaoyan Yan, Lu Wang, Xia Yang, Yulan Qiu, Xiaolin Tian, Yi Lv, Fengjie Tian, Guohua Song, Tong Wang

Study Type : In Vitro Study
Additional Links
Diseases : Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Fluorosilicic acid and cotinine, separately and in combination, induce genotoxicity and telomeric reduction in human osteoblast cell line MG63.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2022 ;876-877:503474. Epub 2022 Feb 17. PMID: **35483789**

Article Published Date : Dec 31, 2021

Authors : Ana L H Garcia, Cristina A Matzenbacher, Solange Soares, Paula Rohr, Juliana da Silva

Study Type : Human In Vitro
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosis is associated with impaired cognition in children.

Pubmed Data : Ann Indian Acad Neurol. 2021 ;24(5):715-720. Epub 2020 Nov 6. PMID: **35002129**

Article Published Date : Dec 31, 2020

Authors : Anjana Prabhakar, Kabeer Abdulkhayarkutty, Shaji Velayudhan Cheruvallil, Prasanth Sudhakaran

Study Type : Human Study
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Gastrodin alleviates bone damage by modulating protein expression and tissue redox state.

Pubmed Data : FEBS Open Bio. 2020 11 ;10(11):2404-2416. Epub 2020 Oct 21. PMID: **33010109**

Article Published Date : Jan 10, 2020

Authors : Bowen Zheng, Chunling Shi, Fenik K Muhammed, Jia He, Adil O Abdullah, Yi Liu

Study Type : Animal Study
Additional Links
Substances : Gastrodin : CK(253) : AC(129)
Diseases : Fluorosis : CK(262) : AC(42)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Osteoprotective : CK(2007) : AC(674)
Problem Substances : Fluoride : CK(1815) : AC(454)

Health effects of groundwater fluoride contamination.

Pubmed Data : Clin Toxicol (Phila). 2009 Apr ;47(4):292-5. PMID: **19274500**

Article Published Date : Mar 31, 2009

Authors : Bishwajit Nayak, Madan Mohan Roy, Bhaskar Das, Arup Pal, Mrinal Kumar Sengupta, Shankar Prasad De, Dipankar Chakraborti

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluorosis : CK(262) : AC(42), Sodium Fluoride : CK(1446) : AC(393)

Health impact of supplying safe drinking water containing fluoride below permissible level on flourosis patients in a fluoride-endemic rural area of West Bengal.

Pubmed Data : Indian J Public Health. 2011 ;55(4):303-8. PMID: **22298140**

Article Published Date : Dec 31, 2010

Authors : Kunal Kanti Majumdar

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Additional Keywords : Water Fluoridation : CK(34) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High prevalence of dental fluorosis among schoolchildren in three villages in Sri Lanka.

Pubmed Data : Ceylon Med J. 2017 12 26 ;62(4):218-221. PMID: **29390597**

Article Published Date : Jan 25, 2017

Authors : P S Rajapakse, W M Jayawardhane, A Lokubandara, R Gamage, A P Dasanayake, C Goonaratna

Study Type : Human Study

Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Infant formula consumption may be associated with an increased risk of developing at least some detectable level of enamel fluorosis.

Pubmed Data : Evid Based Dent. 2009;10(3):73. PMID: **19820737**

Article Published Date : Jan 01, 2009

Authors : Maura Edwards

Study Type : Meta Analysis
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Infant Formula : CK(659) : AC(97)

Infants fully formula-fed on formulae prepared with optimally fluoridated water (0.7-1.0 mg/L) have a high probability of exceeding the upper limit for fluoride and are at increased risk of dental fluorosis.

Pubmed Data : J Public Health Dent. 2010 Jun 2. Epub 2010 Jun 2. PMID: **20545827**

Article Published Date : Jun 02, 2010

Authors : Peter Cressey

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Infant Formula : CK(659) : AC(97), Public Drinking Water : CK(49) : AC(16)

Lycopene significantly combated sodium fluoride induced ameloblasts apoptosis and dental fluorosis.

Pubmed Data : Chem Biol Interact. 2016 Nov 18 ;261:27-34. Epub 2016 Nov 18. PMID: **27871895**

Article Published Date : Nov 17, 2016

Authors : Weishan Li, Binghua Jiang, Xianglin Cao, Yongjiang Xie, Ting Huang

Study Type : Animal Study
Additional Links
Substances : Lycopene : CK(1265) : AC(371)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Superoxide Dismutase Up-regulation : CK(2327) : AC(896)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Neuroprotective effect by naringin against fluorosis-induced neurodegeneration.

Pubmed Data : Neuroreport. 2023 Jun 7 ;34(9):449-456. Epub 2023 Apr 28. PMID: **37161984**

Article Published Date : Jun 06, 2023

Authors : Ravindra Shantakumar Swamy, Naveen Kumar, Smita Shenoy, Sri Pragnya Cheruku, Vanishree Rao, Nitesh Kumar, Sachindra Kumar, Velayutham Ravichandiran

Study Type : Animal Study
Additional Links
Substances : Citrus naringin : CK(440) : AC(245)
Diseases : Fluorosis : CK(262) : AC(42)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Fluoride : CK(1815) : AC(454)

Potential risk of dental fluorosis associated with different baby formulas and water brands marketed in Spain.

Pubmed Data : J Clin Pediatr Dent. 2024 Jan ;48(1):111-119. Epub 2024 Jan 3. PMID: **38239163**

Article Published Date : Dec 31, 2023

Authors : Sandra M Gallego-Reyes, Jaime A Cury, Amparo Pérez-Silva, Clara Serna-Muñoz, Icíar Fernández-Pizarro, Yolanda Martínez-Beneyto, Antonio J Ortiz-Ruiz

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Infant Formula : CK(659) : AC(97), Sodium Fluoride : CK(1446) : AC(393)

Reversal of fluorosis in children with ascorbic acid, calcium and vitamin D3.

Pubmed Data : Acta Paediatr Jpn. 1996 Oct ;38(5):513-9. PMID: **8942013**

Article Published Date : Sep 30, 1996

Authors : S K Gupta, R C Gupta, A K Seth, A Gupta

Study Type : Human Study
Additional Links
Substances : Calcium : CK(444) : AC(68), Vitamin C : CK(6030) : AC(1400), Vitamin D : CK(11555) : AC(1679)
Diseases : Fluorosis : CK(262) : AC(42)
Pharmacological Actions : Detoxifier : CK(853) : AC(252)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Role of fluoride induced histone trimethylation in development of skeletal fluorosis.

Pubmed Data : Environ Toxicol Pharmacol. 2018 Jan ;57:159-165. Epub 2017 Dec 17. PMID: **29275289**

Article Published Date : Dec 31, 2017

Authors : Atul P Daiwile, Saravanadevi Sivanesan, Prashant Tarale, Pravin K Naoghare, Amit Bafana, Devendra Parmar, Krishnamurthi Kannan

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride exposure induces developmental toxicity and cardiotoxicity in zebrafish embryos.

Pubmed Data : Biol Trace Elem Res. 2024 Sep 17. Epub 2024 Sep 17. PMID: **39287768**

Article Published Date : Sep 16, 2024

Authors : Feiqing Wang, Fa Chen, Wen Song, Yanju Li, Haiyan Wu, Tingting Tian, Mengxian Tian, Dongxin Tang, Yang Liu

Study Type : Animal Study
Additional Links
Diseases : Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Sodium fluoride induces apoptosis in the kidney of rats through caspase-mediated pathways and DNA damage.

Pubmed Data : J Physiol Biochem. 2014 Sep ;70(3):857-68. Epub 2014 Aug 27. PMID: **25158646**

Article Published Date : Aug 31, 2014

Authors : Guo Hua Song, Ji Ping Gao, Chun Fang Wang, Chao Yang Chen, Xiao Yan Yan, Min Guo, Yu Wang, Fu Bing

Huang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Renotoxic : CK(56) : AC(20)

The effect of vitamin E and selenium combination in repairing fluoride-induced DNA damage to NRK-52E cells.

Pubmed Data : Mol Biol Rep. 2020 Oct ;47(10):7761-7770. Epub 2020 Oct 6. PMID: **33025505**

Article Published Date : Sep 30, 2020

Authors : Veysel Yüksek, Sedat Çetin, Ayşe Usta

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389), Vitamin E : CK(3039) : AC(570)
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Pharmacological Actions : DNA Repair Up-regulation : CK(110) : AC(34), Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The use of fluoride supplements during the first 6 years of life is associated with a significant increase in the risk of developing dental fluorosis.

Pubmed Data : Community Dent Oral Epidemiol. 1999 Feb ;27(1):48-56. PMID: **10086926**

Article Published Date : Jan 31, 1999

Authors : A I Ismail, R R Bandekar

Study Type : Meta Analysis
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

This study has provided new evidence for the role of FGF21/ERK in fluoride-induced skeletal muscle damage.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Mar 1 ;252:114626. Epub 2023 Feb 8. PMID: **36764073**

Article Published Date : Feb 28, 2023

Authors : Lan Ma, Chengmei Zhang, Yu Gui, Tingling Zou, Shuhua Xi, Xiaoying Guo

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Muscle Damage : CK(258) : AC(83)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Water fluoridation less effective now than in past.

Pubmed Data : Cochrane Database Syst Rev. 2024 Oct 4 ;10(10):CD010856. Epub 2024 Oct 4. PMID: **39362658**

Article Published Date : Oct 03, 2024

Authors : Zipporah Iheozor-Ejiofor, Tanya Walsh, Sharon R Lewis, Philip Riley, Dwayne Boyers, Janet E Clarkson, Helen V Worthington, Anne-Marie Glenny, Lucy O'Malley

Study Type : Meta Analysis
Additional Links
Diseases : Dental Caries : CK(700) : AC(127), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fractures: Bone (AC 1) (CK 1)

High fluoride ingestion impairs bone fracture healing.

Pubmed Data : Front Bioeng Biotechnol. 2022 ;10:791433. Epub 2022 May 20. PMID: **35669059**

Article Published Date : Dec 31, 2021

Authors : Chengcheng Du, Pengcheng Xiao, Shengqiang Gao, Shengwen Chen, Bowen Chen, Wei Huang, Chen Zhao

Study Type : In Vitro Study

Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fractures: Bone : CK(255) : AC(34)

Additional Keywords : Increased Risk : CK(8492) : AC(1109)

Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Gastrointestinal Inflammation (AC 1) (CK 2)

Th17-related cytokines involved in fluoride-induced cecal and rectal barrier damage.

Pubmed Data : Biol Trace Elem Res. 2023 Sep ;201(9):4497-4507. Epub 2022 Dec 20. PMID: **36538210**

Article Published Date : Aug 31, 2023

Authors : Xiao-Ying Gao, Ye Jin, Jing Zhao, Yu-Ling Zhang, Hong-Wei Wang, Bian-Hua Zhou

Study Type : Animal Study

Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Gastrointestinal Inflammation : CK(324) : AC(153)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Gingivitis (AC 3) (CK 21)

Green tea showed greater reduction of gingival inflammation and improved periodontal parameters than fluoride-triclosan dentifrice.

Pubmed Data : Int J Dent Hyg. 2015 Feb 17. Epub 2015 Feb 17. PMID: **25690541**

Article Published Date : Feb 16, 2015

Authors : Ts Hrishi, Pp Kundapur, A Naha, Bs Thomas, S Kamath, Gs Bhat

Study Type : Human Study

Additional Links

Substances : Green Tea : CK(4441) : AC(1370)

Diseases : Gingivitis : CK(595) : AC(86), Inflammation : CK(15536) : AC(5279), Periodontitis : CK(1081) : AC(266)

Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161)

Problem Substances : Fluoride : CK(1815) : AC(454)

Sodium fluoride causes oxidative stress and apoptosis in

cementoblasts.

Pubmed Data : Chem Biol Interact. 2018 Aug 18 ;294:34-39. Epub 2018 Aug 18. PMID: **30130527**

Article Published Date : Aug 17, 2018

Authors : Jing Ni, Yiming Li, Wu Zhang, Rong Shu, Zhe Zhong

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Gingivitis : CK(595) : AC(86)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

The effectiveness of 0.5% C. sinensis extract was more compared to 0.05% sodium fluoride and 0.2% chlorhexidine gluconate mouth rinses.

Pubmed Data : J Int Soc Prev Community Dent. 2015 May-Jun;5(3):218-26. PMID: **26236682**

Article Published Date : Apr 30, 2015

Authors : Chaitali U Hambire, Rashmi Jawade, Amol Patil, Vaibhav R Wani, Ankur A Kulkarni, Parag B Nehete

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370)
Diseases : Dental Caries : CK(700) : AC(127), Dental Caries: Children : CK(174) : AC(20), Dental Plaque : CK(355) : AC(42), Gingivitis : CK(595) : AC(86)
Pharmacological Actions : Anti-Bacterial Agents : CK(4114) : AC(1943)
Additional Keywords : Natural Substances Versus Drugs : CK(2773) : AC(556), Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Chlorhexidine gluconate : CK(52) : AC(7), Sodium Fluoride : CK(1446) : AC(393)

Goiter: Exophthalmic (AC 1) (CK 21)

Exposure to high-fluoride drinking water appears to non-linearly affect thyroid function and increase TSH release in children.

Pubmed Data : Environ Res. 2024 Feb 1 ;242:117759. Epub 2023 Nov 28. PMID: **38029816**

Article Published Date : Jan 31, 2024

Authors : Inga Iamandii, Lisa De Pasquale, Maria Edvige Giannone, Federica Veneri, Luigi Generali, Ugo Consolo, Linda S Birnbaum, Jacqueline Castenmiller, Thorhallur I Halldorsson, Tommaso Filippini, Marco Vinceti

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Goiter: Exophthalmic : CK(32) : AC(3), Hypothyroidism : CK(847) : AC(148), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hair Loss (AC 1) (CK 1)

Sodium fluoride exposure compromises hair follicle growth and

accelerates programmed cell death.

Pubmed Data : Biol Trace Elem Res. 2010 Jan 5. Epub 2010 Jan 5. PMID: 20049553

Article Published Date : Jan 05, 2010

Authors : Zheng-hui Wang, Xiao-li Li, Zhuang-qun Yang, Min Xu

Study Type : In Vitro Study
Additional Links
Diseases : Hair Loss : CK(763) : AC(143), Hair Quality Problems : CK(32) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Hair Quality Problems (AC 1) (CK 1)

Sodium fluoride exposure compromises hair follicle growth and accelerates programmed cell death.

Pubmed Data : Biol Trace Elem Res. 2010 Jan 5. Epub 2010 Jan 5. PMID: 20049553

Article Published Date : Jan 05, 2010

Authors : Zheng-hui Wang, Xiao-li Li, Zhuang-qun Yang, Min Xu

Study Type : In Vitro Study
Additional Links
Diseases : Hair Loss : CK(763) : AC(143), Hair Quality Problems : CK(32) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Heart Failure (AC 1) (CK 2)

These findings reveal that acute fluoride exposure causes sudden heart failure.

Pubmed Data : Int J Cardiol. 2017 Feb 15 ;229:96-101. Epub 2016 Nov 9. PMID: 27863940

Article Published Date : Feb 14, 2017

Authors : Lakshmikanthan Panneerselvam, Azhwar Raghunath, Ekambaram Perumal

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Heart Failure : CK(1884) : AC(327)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Heavy Metal Toxicity (AC 2) (CK 3)

Pharmacological implications of ipriflavone against environmental metal-induced neurodegeneration and dementia.

Pubmed Data : Environ Sci Pollut Res Int. 2021 Jul 7. Epub 2021 Jul 7. PMID: **34235690**

Article Published Date : Jul 06, 2021

Authors : Hend M Hussien, Doaa A Ghareeb, Hany E A Ahmed, Hani S Hafez, Samar R Saleh

Study Type : Animal Study
Additional Links
Substances : Ipriflavone : CK(49) : AC(14)
Diseases : Dementia : CK(2180) : AC(375), Heavy Metal Toxicity : CK(2713) : AC(1019)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Aluminum : CK(1061) : AC(349), Cadmium : CK(562) : AC(265), Fluoride : CK(1815) : AC(454)

This study suggests that excitotoxicity may be the central mechanism of autism spectrum disorders and that excitotoxins like aluminum, fluoride, and mercury may exacerbate excitotoxicity.

Pubmed Data : Curr Med Chem. 2009 ;16(2):157-70. PMID: **19149568**

Article Published Date : Jan 01, 2009

Authors : R L Blaylock, A Strunecka

Study Type : Review
Additional Links
Diseases : Autism : CK(942) : AC(162), Autism Spectrum Disorders : CK(3676) : AC(557), Brain: Microglial Activation : CK(192) : AC(114), Heavy Metal Toxicity : CK(2713) : AC(1019)
Additional Keywords : Heavy Metals and Autism : CK(89) : AC(15), Vaccine Research : CK(571) : AC(113)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Mercury : CK(885) : AC(213)
Adverse Pharmacological Actions : Excitotoxic : CK(40) : AC(10), Neurotoxic : CK(2838) : AC(702)

Hip Dysplasia: Congenital (AC 1) (CK 3)

Fluoride increases the susceptibility of developmental dysplasia of the hip.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Apr 1 ;234:113408. Epub 2022 Mar 14. PMID: **35298972**

Article Published Date : Mar 31, 2022

Authors : Weizheng Zhou, Wenting Luo, Dan Liu, Federico Canavese, Lianyong Li, Qun Zhao

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hip Dysplasia: Congenital : CK(3) : AC(1), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hormone Insufficency (AC 1) (CK 2)

Sodium fluoride during gestation and lactation affects male

reproduction in adult rats by decreasing spermatogenesis and steroidogenesis.

Pubmed Data : Naturwissenschaften. 2007 Jul;94(7):607-11. Epub 2007 Feb 22. PMID: **17318612**

Article Published Date : Jul 01, 2007

Authors : P Sreedhar Reddy, T Pushpalatha, P Sreenivasula Reddy

Study Type : Animal Study
Additional Links
Diseases : Breastfeeding Concerns: Chemical Exposure : CK(123) : AC(19), Hormone Insufficency : CK(30) : AC(8), Infertility: Male : CK(1668) : AC(424), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

Huntington Disease (AC 1) (CK 2)

Sodium flouride exposure during pregnancy may interfere with normal development and increase the risk of neurological and psychiatric disorders in adulthood.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2010 Jun;14(6):507-12. PMID: **20712257**

Article Published Date : Jun 01, 2010

Authors : P Flace, V Benagiano, D Vermesan, R Sabatini, A M Inchingolo, A Inchingolo, P Auteri, G Ambrosi, A Tarullo, R Cagiano

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Huntington Disease : CK(222) : AC(103), Obsessive-Compulsive Disorder : CK(421) : AC(77), Prenatal Chemical Exposures : CK(2428) : AC(530), Schizophrenia : CK(1080) : AC(191), Tourette Syndrome : CK(207) : AC(30)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Teratogenic : CK(325) : AC(66)

Hypercalcemia (AC 1) (CK 2)

Sodium fluoride influences calcium metabolism via osteoclastic activation in goldfish.

Pubmed Data : Comp Biochem Physiol C Toxicol Pharmacol. 2016 Jul 27. Epub 2016 Jul 27. PMID: **27475026**

Article Published Date : Jul 26, 2016

Authors : Masayuki Sato, Taizo Hanmoto, Koji Yachiguchi, Yoshiaki Tabuchi, Takashi Kondo, Masato Endo, Yoichiro Kitani, Toshio Sekiguchi, Makoto Urata, Tran Ngoc Hai, Ajai K Srivastav, Hiroyuki Mishima, Atsuhiko Hattori, Nobuo Suzuki

Study Type : Animal Study
Additional Links
Diseases : Hypercalcemia : CK(17) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hyperglycemia (AC 1) (CK 2)

Fruits of A. carambola are useful as a dietary supplement in regulation of fluoride induced hyperglycemia, hyperlipemia and oxidative stress.

Pubmed Data : Interdiscip Toxicol. 2014 Jun ;7(2):103-10. Epub 2014 Nov 15. PMID: **26109886**

Article Published Date : May 31, 2014

Authors : Rupal A Vasant, A V R L Narasimhacharya

Study Type : Animal Study
Additional Links
Substances : Star Fruit : CK(17) : AC(5)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hyperglycemia : CK(2107) : AC(692), Hyperlipidemia : CK(2133) : AC(550), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hypoglycemic Agents : CK(8194) : AC(2019), Hypolipidemic : CK(8317) : AC(1985)
Additional Keywords : Supplementation : CK(413) : AC(60)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hyperlipidemia (AC 1) (CK 2)

Fruits of A. carambola are useful as a dietary supplement in regulation of fluoride induced hyperglycemia, hyperlipemia and oxidative stress.

Pubmed Data : Interdiscip Toxicol. 2014 Jun ;7(2):103-10. Epub 2014 Nov 15. PMID: **26109886**

Article Published Date : May 31, 2014

Authors : Rupal A Vasant, A V R L Narasimhacharya

Study Type : Animal Study
Additional Links
Substances : Star Fruit : CK(17) : AC(5)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hyperglycemia : CK(2107) : AC(692), Hyperlipidemia : CK(2133) : AC(550), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hypoglycemic Agents : CK(8194) : AC(2019), Hypolipidemic : CK(8317) : AC(1985)
Additional Keywords : Supplementation : CK(413) : AC(60)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hypertension (AC 4) (CK 17)

Elevated serum fluoride levels in perimenopausal women are related to the components of metabolic syndrome.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2021 Sep ;25(17):5474-5482. PMID: **34533791**

Article Published Date : Aug 31, 2021

Authors : D Schneider-Matyka, I Gutowska, M Panczyk, E Grochans, M Szkup

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypertension : CK(8603) : AC(1329), Metabolic Diseases : CK(1252) : AC(263)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure has been implicated as a potential risk factor for hypertension.

Pubmed Data : Cell Immunol. 1975 Oct ;19(2):194-200. PMID: **S0147-6513(24)00757-7**

Article Published Date : Oct 01, 1975

Authors : J L Theodor, R Senelar

Study Type : Animal Study
Additional Links
Diseases : Hypertension : CK(8603) : AC(1329)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Hypertensive : CK(266) : AC(30)

Luteolin-mediated Kim-1/NF-kB/Nrf2 signaling pathways protects sodium fluoride-induced hypertension and cardiovascular complications.

Pubmed Data : Biofactors. 2018 Nov ;44(6):518-531. Epub 2018 Nov 26. PMID: **30474894**

Article Published Date : Oct 31, 2018

Authors : Ademola Adetokunbo Oyagbemi, Temidayo Olutayo Omobowale, Olufunke Eunice Ola-Davies, Ebunoluwa Racheal Asenuga, Temitayo Olabisi Ajibade, Olumuyiwa Abiola Adejumobi, Jeremiah Moyinoluwa Afolabi, Blessing Seun Ogunpolu, Olufunke Olubunmi Falayi, Adebowale Bernard Saba, Adeolu Alex Adedapo, Momoh Audu Yakubu

Study Type : Animal Study
Additional Links
Substances : Luteolin : CK(707) : AC(390)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypertension : CK(8603) : AC(1329), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antihypertensive Agents : CK(6936) : AC(1007), Malondialdehyde Down-regulation : CK(2826) : AC(965), Nrf2 activation : CK(2908) : AC(1762), Superoxide Dismutase Up-regulation : CK(2327) : AC(896)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

These results provide new insights into the mechanism of fluoride-induced hypertension.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Aug ;281:116681. Epub 2024 Jul 4. PMID: **38964063**

Article Published Date : Jul 31, 2024

Authors : Wenjing Yang, Chunqing Lu, Fang Chu, Keming Bu, Hao Ma, Qiaoyu Wang, Zhe Jiao, Sheng Wang, Xiyue Yang, Yanhui Gao, Dianjun Sun, Hongna Sun

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypertension : CK(8603) : AC(1329)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hypothyroidism (AC 6) (CK 47)

Due to the ability of fluoride to inhibit the production of thyroid

hormones, a transition to low exposure may result in hyperthyroidism associated psychosis.

Pubmed Data : Med Hypotheses. 2009 May;72(5):501-3. Epub 2009 Feb 7. PMID: **19201548**

Article Published Date : May 01, 2009

Authors : Karl Erik Zachariassen, Trond Peder Flaten

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148)
Problem Substances : Fluoride : CK(1815) : AC(454)

Exposure to high-fluoride drinking water appears to non-linearly affect thyroid function and increase TSH release in children.

Pubmed Data : Environ Res. 2024 Feb 1 ;242:117759. Epub 2023 Nov 28. PMID: **38029816**

Article Published Date : Jan 31, 2024

Authors : Inga Iamandii, Lisa De Pasquale, Maria Edvige Giannone, Federica Veneri, Luigi Generali, Ugo Consolo, Linda S Birnbaum, Jacqueline Castenmiller, Thorhallur I Halldorsson, Tommaso Filippini, Marco Vinceti

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Goiter: Exophthalmic : CK(32) : AC(3), Hypothyroidism : CK(847) : AC(148), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure and indicators of thyroid functioning in the Canadian population.

Pubmed Data : J Epidemiol Community Health. 2017 Oct ;71(10):1019-1025. Epub 2017 Aug 24. PMID: **28839078**

Article Published Date : Sep 30, 2017

Authors : Amanda M Barberio, F Shaun Hosein, Carlos Quiñonez, Lindsay McLaren

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride has impacts on TSH, T3 hormones even in the standard concentration of less than 0.5 mg/L.

Pubmed Data : Sci Rep. 2018 Feb 8 ;8(1):2674. Epub 2018 Feb 8. PMID: **29422493**

Article Published Date : Feb 07, 2018

Authors : Zohreh Kheradpisheh, Masoud Mirzaei, Amir Hossein Mahvi, Mehdi Mokhtari, Reyhane Azizi, Hossein Fallahzadeh, Mohammad Hassan Ehrampoush

Study Type : Human: Case Report
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride in drinking water was associated with increased risk of hypothyroidism in pregnant women.

Pubmed Data : Sci Total Environ. 2023 Apr 15 ;869:161149. Epub 2023 Feb 9. PMID: **36764861**

Article Published Date : Apr 14, 2023

Authors : Meaghan Hall, Bruce Lanphear, Jonathan Chevrier, Rick Hornung, Rivka Green, Carly Goodman, Pierre Ayotte, Esperanza Angeles Martinez-Mier, R Thomas Zoeller, Christine Till

Study Type : Human Study

Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High fluoride exposure has multigenerational and cumulative adverse effects on thyroid status, brain health and learning memory in rats.

Pubmed Data : Biol Trace Elem Res. 2011 Jul 14. Epub 2011 Jul 14. PMID: **21755305**

Article Published Date : Jul 14, 2011

Authors : Piler Mahaboob Basha, Puja Rai, Shabana Begum

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148), Prenatal Chemical Exposures : CK(2428) : AC(530), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Infertility (AC 1) (CK 2)

Sodium fluoride epigenetically impaired mouse oocyte maturation and embryonic development.

Pubmed Data : Environ Sci Technol. 2014 Sep 2 ;48(17):10398-405. Epub 2014 Aug 14. PMID: **25102367**

Article Published Date : Sep 01, 2014

Authors : Mingzhe Fu, Xinying Wu, Jie He, Yong Zhang, Song Hua

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(2481) : AC(656)
Additional Keywords : Dose Response : CK(1769) : AC(700), Embryonic Development : CK(3) : AC(2), Gene Expression : CK(282) : AC(104), Prenatal Epigenetic Programming : CK(66) : AC(18)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Infertility: Female (AC 12) (CK 66)

An increased risk of spontaneous abortion among fabrication workers has been linked to fluoride compound and photoresist and developed solvents (PDS) exposure.

Pubmed Data : Am J Ind Med. 1995 Dec ;28(6):751-69. PMID: **8588562**

Article Published Date : Dec 01, 1995

Authors : S H Swan, J J Beaumont, S K Hammond, J VonBehren, R S Green, M F Hallock, S R Woskie, C J Hines, M B Schenker

Study Type : Human Study
Additional Links
Diseases : Abortion: Spontaneous : CK(325) : AC(42), Infertility: Female : CK(741) : AC(180)

Problem Substances : Fluoride : CK(1815) : AC(454), Photoresist and developed solvents (PDS) : CK(10) : AC(1)
Adverse Pharmacological Actions : Abortive : CK(57) : AC(9), Anti-Fertility : CK(112) : AC(21)

Effect of sodium fluoride on reproductive function through regulating reproductive hormone level.

Pubmed Data : Biol Trace Elem Res. 2023 Apr ;201(4):1825-1836. Epub 2022 May 10. PMID: **35538195**

Article Published Date : Mar 31, 2023

Authors : Siyuan Dong, Yanni Yang, Biqi He, Zhao Xu, Zhaoqiang Zhou, Jinhai Wang, Chen Chen, Qun Chen

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effects of fluoride toxicity on female reproductive system of mammals.

Pubmed Data : Biol Trace Elem Res. 2024 May 6. Epub 2024 May 6. PMID: **38709367**

Article Published Date : May 05, 2024

Authors : Aditi Fishta, Ruhi Thakur, Krishan Chander Sharma, Neha Thakur, Bhavna Patial

Study Type : Meta Analysis
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to high fluoride concentrations in drinking water is associated with decreased birth rates.

Pubmed Data : J Toxicol Environ Health. 1994 May ;42(1):109-21. PMID: **8169995**

Article Published Date : May 01, 1994

Authors : S C Freni

Study Type : Meta Analysis
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Infertility: Male : CK(1668) : AC(424)
Additional Keywords : Causes Of Decreased Birth Rates : CK(20) : AC(1)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Female reproductive function is inhibited by NaF and that exposure to NaF causes ovarian and uterine structural damage.

Pubmed Data : Food Chem Toxicol. 2013 Feb 28. Epub 2013 Feb 28. PMID: **23459146**

Article Published Date : Feb 28, 2013

Authors : Yongjiang Zhou, Hailing Zhang, Junlin He, Xuemei Chen, Yubing Ding, Yingxiong Wang Xueqing Liu

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Ovarian Diseases : CK(33) : AC(16), Uterine Diseases : CK(1291) : AC(335)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fertility impairment in mice on a low fluoride intake has been observed.

Pubmed Data : Science. 1972 Sep 8 ;177(4052):893-4. PMID: **5054644**

Article Published Date : Sep 08, 1972

Authors : H H Messer, W D Armstrong, L Singer

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fluoride impairs ovary development by affecting oogenesis and inducing oxidative stress and apoptosis in female zebrafish.

Pubmed Data : Chemosphere. 2020 Oct ;256:127105. Epub 2020 May 17. PMID: **32450357**

Article Published Date : Sep 30, 2020

Authors : Meiyan Li, Jinling Cao, Yangfei Zhao, Panhong Wu, Xuehua Li, Forouzan Khodaei, Yongli Han, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride activates ERK and JNK via induction of oxidative stress to promote apoptosis and impairs ovarian function in rats.

Pubmed Data : J Hazard Mater. 2014 May 15 ;272:75-82. Epub 2014 Mar 18. PMID: **24681588**

Article Published Date : May 14, 2014

Authors : Yanqing Geng, Yiwen Qiu, Xueqing Liu, Xuemei Chen, Yubin Ding, Shangjing Liu, Yi Zhao, Rufei Gao, Yingxiong Wang, Junlin He

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride disturbs DNA methylation of NNAT and declines oocyte quality by impairing glucose transport in porcine oocytes.

Pubmed Data : Environ Mol Mutagen. 2017 Dec 29. Epub 2017 Dec 29. PMID: **29285797**

Article Published Date : Dec 28, 2017

Authors : Xiaoyan Liu, Zheng-Wen Nie, Ying-Ying Gao, Li Chen, Shu-Yuan Yin, Xia Zhang, Cuifang Hao, Yi-Liang Miao

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride exposure exerts toxic effects on porcine oocyte maturation.

Pubmed Data : Sci Rep. 2017 Dec 6 ;7(1):17082. Epub 2017 Dec 6. PMID: **29213094**

Article Published Date : Dec 05, 2017

Authors : Shuang Liang, Zheng-Wen Nie, Minghui Zhao, Ying-Jie Niu, Kyung-Tae Shin, Xiang-Shun Cui

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride treatment impairs the subsequent embryonic developmental potential of the oocytes.

Pubmed Data : Environ Toxicol. 2015 May 26. Epub 2015 May 26. PMID: **26011085**

Article Published Date : May 25, 2015

Authors : Shuang Liang, Ming-Hui Zhao, Sun A Ock, Nam-Hyung Kim, Xiang-Shun Cui

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

The administration of high concentrations of fluoride to female mice results in ovarian damage and significantly reduces the number and the fertilization potential of mature oocytes.

Pubmed Data : PLoS One. 2015 ;10(6):e0129594. Epub 2015 Jun 8. PMID: **26053026**

Article Published Date : Dec 31, 2014

Authors : Songna Yin, Chao Song, Haibo Wu, Xin Chen, Yong Zhang

Study Type : Animal Study
Additional Links
Diseases : Female Reproductive Development Abnormalities : CK(86) : AC(31), Infertility: Female : CK(741) : AC(180)
Additional Keywords : Gene Expression : CK(282) : AC(104)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Infertility: Male (AC 22) (CK 59)

"Decreased in vitro fertility in male rats exposed to fluoride-induced oxidative stress damage and mitochondrial transmembrane potential loss."

Pubmed Data : Toxicol Appl Pharmacol. 2008 Aug 1 ;230(3):352-7. Epub 2008 Mar 28. PMID: **18455746**

Article Published Date : Aug 01, 2008

Authors : Jeannett A Izquierdo-Vega, Manuel Sánchez-Gutiérrez, Luz María Del Razo

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21), Oxidant : CK(646) : AC(246)

Alpha-lipoic acid plays a protective role in fluoride-induced reproductive lesion.

Pubmed Data : Zhonghua Yi Xue Za Zhi. 2020 Dec 15 ;100(46):3706-3711. PMID: **33342149**

Article Published Date : Dec 14, 2020

Authors : Y Yang, H Huang, L X Cui, F Q Li

Study Type : Animal Study
Additional Links

Substances : Alpha-Lipoic Acid : CK(1499) : AC(365)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Malondialdehyde Down-regulation : CK(2826) : AC(965)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Combined Exposure to Fluoride and Microplastics Causes Sertoli Cell Damage and Reproductive Toxicity

Pubmed Data : Toxicology. 2024 Aug ;506:153849. Epub 2024 May 29. PMID: **38821197**

Article Published Date : Aug 01, 2024

Authors : Tan Ma, Huixian Cheng, Liang Kong, Chenghao Shen, Haibo Jin, Hongliang Li, Chun Pan, Jingyan Liang

Study Type : In Vitro Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(56) : AC(12)

Dose and time-dependent effects of sodium fluoride on sperm motility.

Pubmed Data : Toxicol Ind Health. 2018 Dec ;34(12):813-818. Epub 2018 Oct 25. PMID: **30360691**

Article Published Date : Nov 30, 2018

Authors : Basavalingappa Chaithra, Halugudde Nagaraja Sarjan, Shivabasavaiah

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to high fluoride concentrations in drinking water is associated with decreased birth rates.

Pubmed Data : J Toxicol Environ Health. 1994 May ;42(1):109-21. PMID: **8169995**

Article Published Date : May 01, 1994

Authors : S C Freni

Study Type : Meta Analysis
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Infertility: Male : CK(1668) : AC(424)
Additional Keywords : Causes Of Decreased Birth Rates : CK(20) : AC(1)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fluoride exposure arrests the acrosome formation during spermatogenesis.

Pubmed Data : Chemosphere. 2019 Jul ;226:874-882. Epub 2019 Apr 5. PMID: **31509916**

Article Published Date : Jun 30, 2019

Authors : Shanshan Jiang, Chen Liang, Yan Gao, Yu Liu, Yongli Han, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride has various detrimental effects on male reproductive system and overall reproductive health.

Pubmed Data : J Trace Elem Med Biol. 2024 Sep 7 ;86:127522. Epub 2024 Sep 7. PMID: **39276446**

Article Published Date : Sep 07, 2024

Authors : Bhavna Patial, Imtiaza Khan, Ruhi Thakur, Aditi Fishta

Study Type : Review
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424)
Additional Keywords : Infertility: Male : CK(1668) : AC(424)
Problem Substances : Fluoride : CK(1815) : AC(454)

Fluoride interferes with the sperm fertilizing ability.

Pubmed Data : J Agric Food Chem. 2019 May 8 ;67(18):5240-5249. Epub 2019 Apr 29. PMID: **31008594**

Article Published Date : May 07, 2019

Authors : Yu Liu, Chen Liang, Yan Gao, Shanshan Jiang, Yuyang He, Yongli Han, Ali Olfati, Ram Kumar Manthari, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-elicited developmental testicular toxicity in rats: roles of endoplasmic reticulum stress and inflammatory response.

Pubmed Data : Toxicol Appl Pharmacol. 2013 Sep 1 ;271(2):206-15. Epub 2013 May 22. PMID: **23707774**

Article Published Date : Aug 31, 2013

Authors : Shun Zhang, Chunyang Jiang, Hongliang Liu, Zhizhong Guan, Qiang Zeng, Cheng Zhang, Rongrong Lei, Tao Xia, Hui Gao, Lu Yang, Yihu Chen, Xue Wu, Xiaofei Zhang, Yushan Cui, Linyu Yu, Zhenglun Wang, Aiguo Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced apoptosis and gene expression profiling in mice sperm in vivo has been obsered.

Pubmed Data : Arch Toxicol. 2011 Nov ;85(11):1441-52. Epub 2011 Feb 22. PMID: **21340527**

Article Published Date : Nov 01, 2011

Authors : Zilong Sun, Ruiyan Niu, Bin Wang, Zhibin Jiao, Jinming Wang, Jianhai Zhang, Shaolin Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Azoospermic : CK(4) : AC(2), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Count: Low : CK(116) : AC(25), Sperm Quality: Low : CK(611) : AC(121)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fluoride-induced testicular degeneration and sperm quality deteriorations.

Pubmed Data : Rev Int Androl. 2020 Jul 20. Epub 2020 Jul 20. PMID: **32703668**

Article Published Date : Jul 19, 2020

Authors : Sunday Aderemi Adelakun, Olalekan Wasiu Akintunde, Babatunde Ogunlade

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

In silico prediction of microRNAs on fluoride induced sperm toxicity in mice.

Pubmed Data : Food Chem Toxicol. 2016 Dec ;98(Pt A):34-49. Epub 2016 Mar 21. PMID: **27012587**

Article Published Date : Nov 30, 2016

Authors : Azhwar Raghunath, Dhivyalakshmi Jeyabaskar, Kiruthika Sundarraj, Lakshmikanthan Panneerselvam, Ekambaram Perumal

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Melatonin alleviated fluoride-induced impairment of spermatogenesis and sperm maturation process.

Pubmed Data : Food Chem Toxicol. 2023 Aug ;178:113867. Epub 2023 Jun 1. PMID: **37269891**

Article Published Date : Jul 31, 2023

Authors : Huifeng Luo, Rongxiu Liu, Yilin Lang, Jinhui Zhao, Cuicui Zhuang, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(2743) : AC(904)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Pharmacological Actions : Fertility Agents: Male : CK(369) : AC(101)
Additional Keywords : Gene Expression Regulation : CK(1399) : AC(621)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Microdose vasal injection of sodium fluoride in the rat interferes with fertlity.

Pubmed Data : Reprod Toxicol. 1991 ;5(6):505-12. PMID: **1839778**

Article Published Date : Jan 01, 1991

Authors : N J Chinoy, M V Rao, M V Narayana, E Neelakanta

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride administrated in drinking water of 2, 4, and 6 ppm concentration for 6 months to male rats adversely affected their fertility and reproductive system.

Pubmed Data : Toxicol Ind Health. 2007 Oct;23(9):507-13. PMID: **18681235**

Article Published Date : Oct 01, 2007

Authors : R S Gupta, T I Khan, D Agrawal, J B S Kachhawa

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride affected male reproduction by disturbing blood-testis barrier in mice.

Pubmed Data : Food Chem Toxicol. 2016 May 27 ;94:103-111. Epub 2016 May 27. PMID: **27237588**

Article Published Date : May 26, 2016

Authors : Jianhai Zhang, Zhihui Li, Mingli Qie, Ruibo Zheng, Jagathpala Shetty, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride could reduce sperm motility, capacitation, and the acrosome reaction leading to poor fertilization and suppressed embryonic development.

Pubmed Data : Andrology. 2015 Apr 8. Epub 2015 Apr 8. PMID: **25854509**

Article Published Date : Apr 07, 2015

Authors : Jin Kim, Woo-Sung Kwon, Md Saidur Rahman, June-Sub Lee, Sung-Jae Yoon, Yoo-Jin Park, Young-Ah You, Myung-Geol Pang

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride during gestation and lactation affects male reproduction in adult rats by decreasing spermatogenesis and steroidogenesis.

Pubmed Data : Naturwissenschaften. 2007 Jul;94(7):607-11. Epub 2007 Feb 22. PMID: **17318612**

Article Published Date : Jul 01, 2007

Authors : P Sreedhar Reddy, T Pushpalatha, P Sreenivasula Reddy

Study Type : Animal Study
Additional Links
Diseases : Breastfeeding Concerns: Chemical Exposure : CK(123) : AC(19), Hormone Insufficency : CK(30) : AC(8), Infertility: Male : CK(1668) : AC(424), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

Sodium fluoride exposure changed histological structure and ultrastructure of hypothalamus–pituitary–testicular axis and significantly increased the malformation ratio of sperm.

Pubmed Data : Chemosphere. 2015 Sep ;135:297-303. Epub 2015 May 15. PMID: **25966048**

Article Published Date : Aug 31, 2015

Authors : Haijun Han, Zilong Sun, Guangying Luo, Chong Wang, Ruifen Wei, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induces testicular and sperm abnormalities through

the involvement of HSPs especially during the pubertal period.

Pubmed Data : Chemosphere. 2017 Oct ;184:1080-1088. Epub 2017 Jun 12. PMID: **28672688**

Article Published Date : Sep 30, 2017

Authors : Yangfei Zhao, Jun Zhao, Jinming Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The influence of fluorides on mouse sperm capacitation.

Pubmed Data : Anim Reprod Sci. 2008 Oct ;108(1-2):157-70. Epub 2007 Aug 6. PMID: **17884311**

Article Published Date : Sep 30, 2008

Authors : K Dvoráková-Hortová, M Sandera, M Jursová, J Vasinová, J Peknicová

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

This indicated that along with low sperm quality, sperm mtDNA copy number is also a sensitive biomarker to reflect the sperm toxicity of fluoride.

Pubmed Data : Biochem Biophys Res Commun. 2017 10 21 ;492(3):295-299. Epub 2017 Aug 31. PMID: **28864413**

Article Published Date : Jan 20, 2017

Authors : Zilong Sun, Xingchen Xue, Yuliang Zhang, Ruiyan Niu, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Inflammation (AC 21) (CK 65)

Apoptosis and inflammation involved with fluoride-induced bone injuries.

Pubmed Data : Nutrients. 2024 Jul 31 ;16(15). Epub 2024 Jul 31. PMID: **39125380**

Article Published Date : Jul 30, 2024

Authors : Miao Wang, Kangting Luo, Tongtong Sha, Qian Li, Zaichao Dong, Yanjie Dou, Huanxia Zhang, Guoyu Zhou, Yue Ba, Fangfang Yu

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Arsenic and fluoride co-exposure affects the expression of apoptotic and inflammatory genes and proteins in mononuclear cells from

children.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2014 Feb ;761:27-34. Epub 2014 Jan 21. PMID: **24456662**

Article Published Date : Jan 31, 2014

Authors : B L Estrada-Capetillo, M D Ortiz-Pérez, M Salgado-Bustamante, E Calderón-Aranda, C J Rodríguez-Pinal, E Reynaga-Hernández, N E Corral-Fernández, R González-Amaro, D P Portales-Pérez

Study Type : Human In Vitro, Human Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Association between dental fluorosis prevalence and inflammation levels in school-aged children with low-to-moderate fluoride exposure.

Pubmed Data : Environ Pollut. 2023 Mar 1 ;320:120995. Epub 2023 Jan 2. PMID: **36603756**

Article Published Date : Feb 28, 2023

Authors : Huayang Tang, Mengru Wang, Gaochun Li, Mengwei Wang, Chen Luo, Guoyu Zhou, Qian Zhao, Lixin Dong, Hongliang Liu, Yushan Cui, Li Liu, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : C-Reactive Protein : CK(3920) : AC(389), C-Reactive Protein : CK(3920) : AC(389), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Expression of SDF-1/CXCR4 and related inflammatory factors in sodium fluoride-treated hepatocytes.

Pubmed Data : PLoS One. 2024 ;19(6):e0302530. Epub 2024 Jun 21. PMID: **38905184**

Article Published Date : Dec 31, 2023

Authors : Rui Yang, Hongting Shen, Mingjun Wang, Yaqian Zhao, Shiling Zhu, Hong Jiang, Yanan Li, Guanglan Pu, Xun Chen, Ping Chen, Qing Lu, Jing Ma, Qiang Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Interleukin-1 up-regulation : CK(8) : AC(3), Interleukin-6 up-regulation : CK(41) : AC(10), Tumor necrosis factorα (TNFα) up-regulation : CK(65) : AC(11)

Fermented rooibos tea ameliorates sodium fluoride-induced cardiorenal toxicity, oxidative stress, and inflammation.

Pubmed Data : Cardiovasc Toxicol. 2024 Feb 5. Epub 2024 Feb 5. PMID: **38315346**

Article Published Date : Feb 04, 2024

Authors : Olawale Razaq Ajuwon, Toyosi Abiodun Adeleke, Basiru Olaitan Ajiboye, Akeem Olalekan Lawal, Ibukun Folorunso, Bartholomew Brai, Fisayo Abraham Bamisaye, John Adeolu Falode, Ikenna Maximillian Odoh, Kabirat Iyabode Adegbite, Oluwasayo Bosede Adegoke

Study Type : Animal Study
Additional Links
Substances : Rooibos : CK(161) : AC(76)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induced tissue hypercalcemia, IL-17 mediated inflammation and apoptosis lead to cardiomyopathy.

Pubmed Data : Toxicology. 2018 Aug 1 ;406-407:44-57. Epub 2018 May 22. PMID: **29800585**

Article Published Date : Jul 31, 2018

Authors : Javed Ahsan Quadri, Saba Sarwar, Pinky, Parmita Kar, Seema Singh, Saumya Ranjan Mallick, Sudheer Arava, Tapash Chand Nag, Tara Sankar Roy, A Shariff

Study Type : Animal Study
Additional Links
Diseases : Cardiomyopathy : CK(358) : AC(160), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Fluoride induces neutrophil extracellular traps and aggravates brain inflammation by disrupting neutrophil calcium homeostasis and causing ferroptosis.

Pubmed Data : Environ Pollut. 2023 Aug 15 ;331(Pt 1):121847. Epub 2023 May 18. PMID: **37209896**

Article Published Date : Aug 14, 2023

Authors : Dongxu Wang, Kai Yin, Yue Zhang, Hongmin Lu, Lulu Hou, Hongjing Zhao, Mingwei Xing

Study Type : In Vitro Study
Additional Links
Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride promotes the secretion of inflammatory factors in microglia.

Pubmed Data : Environ Sci Pollut Res Int. 2024 Mar ;31(13):19844-19855. Epub 2024 Feb 17. PMID: **38367109**

Article Published Date : Feb 29, 2024

Authors : Qiuyi Zhang, Tao Li, Ruili Shi, Ruifang Qi, Xiaoqiong Hao, Baohui Ma

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Fluoride-elicited developmental testicular toxicity in rats: roles of endoplasmic reticulum stress and inflammatory response.

Pubmed Data : Toxicol Appl Pharmacol. 2013 Sep 1 ;271(2):206-15. Epub 2013 May 22. PMID: **23707774**

Article Published Date : Aug 31, 2013

Authors : Shun Zhang, Chunyang Jiang, Hongliang Liu, Zhizhong Guan, Qiang Zeng, Cheng Zhang, Rongrong Lei, Tao Xia, Hui Gao, Lu Yang, Yihu Chen, Xue Wu, Xiaofei Zhang, Yushan Cui, Linyu Yu, Zhenglun Wang, Aiguo Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced neuron apoptosis and expressions of inflammatory factors by activating microglia in rat brain.

Pubmed Data : Mol Neurobiol. 2016 Sep ;53(7):4449-60. Epub 2015 Aug 8. PMID: **26253724**

Article Published Date : Aug 31, 2016

Authors : Nan Yan, Yan Liu, Shengnan Liu, Siqi Cao, Fei Wang, Zhengdong Wang, Shuhua Xi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169), Neurotoxic : CK(2838) : AC(702)

Green tea showed greater reduction of gingival inflammation and improved periodontal parameters than fluoride-triclosan dentifrice.

Pubmed Data : Int J Dent Hyg. 2015 Feb 17. Epub 2015 Feb 17. PMID: **25690541**

Article Published Date : Feb 16, 2015

Authors : Ts Hrishi, Pp Kundapur, A Naha, Bs Thomas, S Kamath, Gs Bhat

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370)
Diseases : Gingivitis : CK(595) : AC(86), Inflammation : CK(15536) : AC(5279), Periodontitis : CK(1081) : AC(266)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Fluoride : CK(1815) : AC(454)

Hesperidin attenuates oxidative stress, inflammation, apoptosis, and cardiac dysfunction in sodium fluoride-induced cardiotoxicity.

Pubmed Data : Cardiovasc Toxicol. 2022 Aug ;22(8):727-735. Epub 2022 May 23. PMID: **35606666**

Article Published Date : Jul 31, 2022

Authors : Behçet Varışlı, Ekrem Darendelioğlu, Cuneyt Caglayan, Fatih Mehmet Kandemir, Adnan Ayna, Aydın Genç, Özge Kandemir

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Bcl-2 protein down-regulation : CK(687) : AC(522), NF-kappaB Inhibitor : CK(5541) : AC(3374), Superoxide Dismutase Up-regulation : CK(2327) : AC(896), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670), Tumor Suppressor Protein p53 Upregulation : CK(748) : AC(549)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hesperidin protects liver and kidney against sodium fluoride-induced toxicity.

Pubmed Data : Life Sci. 2021 Sep 15 ;281:119730. Epub 2021 Jun 17. PMID: **34147482**

Article Published Date : Sep 14, 2021

Authors : Cuneyt Caglayan, Fatih Mehmet Kandemir, Ekrem Darendelioğlu, Sefa Küçükler, Adnan Ayna

Study Type : In Vitro Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Inflammation : CK(15536) : AC(5279), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

NaF-induced neurotoxicity via activation of the IL-1β/JNK signaling pathway.

Pubmed Data : Toxicology. 2022 Mar 15 ;469:153132. Epub 2022 Feb 13. PMID: **35172196**

Article Published Date : Mar 14, 2022

Authors : Chengzhi Zhang, Yanmei Yang, Yanhui Gao, Dianjun Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Potential role of fluoride in the etiopathogenesis of Alzheimer's disease.

Pubmed Data : Int J Mol Sci. 2018 Dec 9 ;19(12). Epub 2018 Dec 9. PMID: **30544885**

Article Published Date : Dec 08, 2018

Authors : Marta Goschorska, Irena Baranowska-Bosiacka, Izabela Gutowska, Emilia Metryka, Marta Skórka-Majewicz, Dariusz Chlubek

Study Type : Review
Additional Links
Diseases : Alzheimer's Disease : CK(4948) : AC(2148), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Rutin attenuates neurobehavioral deficits, oxidative stress, neuro-inflammation and apoptosis in fluoride treated rats.

Pubmed Data : Neurosci Lett. 2018 Aug 24 ;682:92-99. Epub 2018 Jun 13. PMID: **29908257**

Article Published Date : Aug 23, 2018

Authors : Kpobari W Nkpaa, Godspower I Onyeso

Study Type : Animal Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Inflammation : CK(15536) : AC(5279), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Rutin mitigates fluoride-induced nephrotoxicity by inhibiting ROS-mediated lysosomal membrane permeabilization.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Apr 1 ;274:116195. Epub 2024 Mar 12. PMID: **38479315**

Article Published Date : Mar 31, 2024

Authors : Yue Ma, Panpan Xu, Hengrui Xing, Yue Zhang, Tingting Li, Xueman Ding, Li Liu, Qiang Niu

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Inflammation : CK(15536) : AC(5279), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induced skeletal muscle changes: Degradation of proteins and signaling mechanism.

Pubmed Data : Environ Pollut. 2019 Jan ;244:534-548. Epub 2018 Oct 10. PMID: **30384060**

Article Published Date : Dec 31, 2018

Authors : P Sudheer Shenoy, Utsav Sen, Saketh Kapoor, Anu V Ranade, Chitta R Chowdhury, Bipasha Bose

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induces renal inflammatory responses and reduces anti-inflammatory cytokine expression in mice.

Pubmed Data : Oncotarget. 2017 Oct 6 ;8(46):80192-80207. Epub 2017 Jul 5. PMID: **29113295**

Article Published Date : Oct 05, 2017

Authors : Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induces renal inflammatory responses by activating NF-κB signaling pathway and reducing anti-inflammatory cytokine expression.

Pubmed Data : Oncotarget. 2017 Jul 5. Epub 2017 Jul 5. PMID: **28708587**

Article Published Date : Jul 04, 2017

Authors : Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Systematic impacts of fluoride exposure on the metabolomics of rats.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Sep 1 ;242:113888. Epub 2022 Jul 21. PMID: **35872488**

Article Published Date : Aug 31, 2022

Authors : Shiyuan Zhao, Jinxiu Guo, Hongjia Xue, Junjun Meng, Dadi Xie, Xi Liu, Qingqing Yu, Haitao Zhong, Pei Jiang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Intelligence Quotient (IQ): Low/Impaired (AC 22) (CK 252)

A significant inverse relationship was found between the fluoride concentration in drinking water and IQ.

Pubmed Data : J Int Soc Prev Community Dent. 2016 Dec ;6(Suppl 3):S237-S242. PMID: **28217543**

Article Published Date : Nov 30, 2016

Authors : A Aravind, R S Dhanya, Ajay Narayan, George Sam, V J Adarsh, M Kiran

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Association between low fluoride exposure and children's intelligence.

Pubmed Data : Public Health. 2023 Jun ;219:73-84. Epub 2023 Apr 28. PMID: **37120936**

Article Published Date : May 31, 2023

Authors : Jayanth V Kumar, Mark E Moss, Honghu Liu, Susan Fisher-Owens

Study Type : Meta Analysis
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Children in endemic areas of fluorosis are at risk for impaired development of intelligence.

Pubmed Data : J Neurosci Rural Pract. 2012 May ;3(2):144-9. PMID: **22865964**

Article Published Date : Apr 30, 2012

Authors : Sudhanshu Saxena, Anjali Sahay, Pankaj Goel

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Children residing in areas with higher than normal water fluoride levels demonstrated more impaired development of intelligence.

Pubmed Data : J Dent (Tehran). 2012 ;9(3):221-9. Epub 2012 Sep 30. PMID: **23119131**

Article Published Date : Dec 31, 2011

Authors : B Seraj, M Shahrabi, M Shadfar, R Ahmadi, M Fallahzadeh, H Farrokh Eslamlu, M J Kharazifard

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children who live in a fluorosis area have 5 times higher odds of developing low IQ than those who live in a nonfluorosis area or a slight fluorosis area.

Pubmed Data : Biol Trace Elem Res. 2008;126(1-3):115-20. Epub 2008 Aug 10. PMID: **18695947**

Article Published Date : Jan 01, 2008

Authors : Qin-Qing Tang, Jun Du, Heng-Hui Ma, Shao-Jun Jiang, Xiao-Jun Zhou

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children's growth and intelligence can be adversely affected by

fluoride and arsenic exposure in drinking water.

Pubmed Data : Environ Health Perspect. 2007 Apr;115(4):643-7. Epub 2007 Jan 9. PMID: **17450237**

Article Published Date : Apr 01, 2007

Authors : San-Xiang Wang, Zheng-Hui Wang, Xiao-Tian Cheng, Jun Li, Zhi-Ping Sang, Xiang-Dong Zhang, Ling-Ling Han, Xiao-Yan Qiao, Zhao-Ming Wu, Zhi-Quan Wang

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Children: Impaired Growth : CK(50) : AC(4), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic exposure to high levels of fluoride in water was observed to be associated with lower intelligence quotient.

Pubmed Data : Iran J Public Health. 2013 Aug ;42(8):813-8. PMID: **26056634**

Article Published Date : Jul 31, 2013

Authors : Ramesh Nagarajappa, Piyush Pujara, Archana J Sharda, Kailash Asawa, Mridula Tak, Pankaj Aapaliya, Nikhil Bhanushali

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Concentration of Fluoride in the ingested water was significantly associated with the IQ of children.

Pubmed Data : J Int Soc Prev Community Dent. 2017 ;7(5):252-258. Epub 2017 Sep 18. PMID: **29026697**

Article Published Date : Dec 31, 2016

Authors : Priyanka Razdan, Basavaraj Patthi, Jishnu Krishna Kumar, Nikhil Agnihotri, Prajakta Chaudhari, Monika Prasad

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Dental fluorosis and urinary fluoride concentration as a reflection of fluoride exposure and its impact on IQ level and BMI of children.

Pubmed Data : Environ Monit Assess. 2016 Apr ;188(4):218. Epub 2016 Mar 9. PMID: **26960765**

Article Published Date : Mar 31, 2016

Authors : Kousik Das, Naba Kumar Mondal

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Dopamine receptor D2 gene polymorphism, urine fluoride, and intelligence impairment of children in China.

Pubmed Data : Ecotoxicol Environ Saf. 2018 Dec 15 ;165:270-277. Epub 2018 Sep 8. PMID: **30205328**

Article Published Date : Dec 14, 2018

Authors : Yushan Cui, Bin Zhang, Jing Ma, Yang Wang, Liang Zhao, Changchun Hou, Jingwen Yu, Yang Zhao, Zushan

Zhang, Junyan Nie, Tongning Gao, Guoli Zhou, Hongliang Liu

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure to fluoride and arsenic in drinking water is associated with decreased intelligence in children.

Pubmed Data : Cad Saude Publica. 2007;23 Suppl 4:S579-87. PMID: **18038039**

Article Published Date : Jan 01, 2007

Authors : Diana Rocha-Amador, Maria Elena Navarro, Leticia Carrizales, Raúl Morales, Jaqueline Calderón

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to high levels of fluoride may adversely influence children's intelligence development.

Pubmed Data : Zhongguo Dang Dai Er Ke Za Zhi. 2008 Dec;10(6):723-5. PMID: **19102839**

Article Published Date : Dec 01, 2008

Authors : Ming Liu, Cong Qian

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to increasing levels of fluoride in tap water was associated with diminished non-verbal intellectual abilities.

Pubmed Data : Environ Int. 2020 Jan ;134:105315. Epub 2019 Nov 16. PMID: **31743803**

Article Published Date : Dec 31, 2019

Authors : Christine Till, Rivka Green, David Flora, Richard Hornung, E Angeles Martinez-Mier, Maddy Blazer, Linda Farmus, Pierre Ayotte, Gina Muckle, Bruce Lanphear

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Infant Formula : CK(659) : AC(97), Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure and cognitive neurodevelopment.

Pubmed Data : Environ Res. 2023 Mar 15 ;221:115239. Epub 2023 Jan 10. PMID: **36639015**

Article Published Date : Mar 14, 2023

Authors : Federica Veneri, Marco Vinceti, Luigi Generali, Maria Edvige Giannone, Elena Mazzoleni, Linda S Birnbaum, Ugo Consolo, Tommaso Filippini

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High iodine and high fluorine adversely effects the intelligence and health of children.

Pubmed Data : Zhonghua Liu Xing Bing Xue Za Zhi. 1994 Oct;15(5):296-8. PMID: **7859263**

Article Published Date : Oct 01, 1994

Authors : Y Yang, X Wang, X Guo

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), TSH: Elevated : CK(20) : AC(2)
Problem Substances : Fluoride : CK(1815) : AC(454), Iodine: Excess : CK(10) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Inferring the fluoride hydrogeochemistry and effect of consuming fluoride-contaminated drinking water on human health.

Pubmed Data : Environ Geochem Health. 2016 Apr ;38(2):557-76. Epub 2015 Jul 12. PMID: **26164468**

Article Published Date : Mar 31, 2016

Authors : D Mondal, G Dutta, S Gupta

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Low levels of fluoride exposure in drinking water had negative effects on children's intelligence.

Pubmed Data : J Hazard Mater. 2011 Feb 28 ;186(2-3):1942-6. Epub 2010 Dec 25. PMID: **21237562**

Article Published Date : Feb 27, 2011

Authors : Yunpeng Ding, YanhuiGao, Huixin Sun, Hepeng Han, Wei Wang, Xiaohong Ji, Xuehui Liu, Dianjun Sun

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Relation between dental fluorosis and intelligence quotient in school children of Bagalkot district.

Pubmed Data : J Indian Soc Pedod Prev Dent. 2011 ;29(2):117-20. PMID: **21911949**

Article Published Date : Dec 31, 2010

Authors : P K Shivaprakash, Kushagra Ohri, Hina Noorani

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Relationship between dental fluorosis and intelligence quotient of school going children.

Pubmed Data : J Clin Diagn Res. 2015 Nov ;9(11):ZC10-5. Epub 2015 Nov 1. PMID: **26673535**

Article Published Date : Oct 31, 2015

Authors : Suleman Abbas Khan, Rahul Kumar Singh, Saumya Navit, Dheera Chadha, Nikita Johri, Pragati Navit, Anshul Sharma, Rachana Bahuguna

Study Type : Human Study

Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

School children residing in area with higher than normal water fluoride level demonstrated more impaired development of intelligence.

Pubmed Data : J Indian Soc Pedod Prev Dent. 2015 ;33(4):307-11. PMID: **26381633**

Article Published Date : Dec 31, 2014

Authors : Shibu Thomas Sebastian, S Sunitha

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

This review finds, with moderate confidence, that higher estimated fluoride exposures are consistently associated with lower IQ in children.

Pubmed Data : NTP Monogr. 2024 Aug(8). PMID: **39172715**

Article Published Date : Aug 01, 2024

Authors :

Study Type : Review
Additional Links
Diseases : Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Fluoride : CK(1815) : AC(454)

Threshold effects of moderately excessive fluoride exposure on children's health.

Pubmed Data : Environ Int. 2018 Sep ;118:116-124. Epub 2018 Jun 2. PMID: **29870912**

Article Published Date : Aug 31, 2018

Authors : Xingchen Yu, Jingwen Chen, Yonggang Li, Hongliang Liu, Changchun Hou, Qiang Zeng, Yushan Cui, Liang Zhao, Pei Li, Ziquan Zhou, Shuo Pang, Sha Tang, Kunming Tian, Qian Zhao, Lixin Dong, Chunyan Xu, Xiao Zhang, Shun Zhang, Li Liu, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Iodine Deficiency (AC 2) (CK 11)

Fluoride exposure could lead to impaired iodine absorption and iodine deficiency.

Pubmed Data : Int J Environ Res Public Health. 2019 03 26 ;16(6). Epub 2019 Mar 26. PMID: **30917615**

Article Published Date : Jan 25, 2019

Authors : Declan Timothy Waugh

Study Type : In Vitro Study

Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Iodine Deficiency : CK(110) : AC(18)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Iodine status modifies the association between fluoride exposure in pregnancy and preschool boys' intelligence.

Pubmed Data : Nutrients. 2022 Jul 16 ;14(14). Epub 2022 Jul 16. PMID: **35889877**

Article Published Date : Jul 15, 2022

Authors : Carly V Goodman, Meaghan Hall, Rivka Green, Jonathan Chevrier, Pierre Ayotte, Esperanza Angeles Martinez-Mier, Taylor McGuckin, John Krzeczkowski, David Flora, Richard Hornung, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Substances : Iodine : CK(182) : AC(32)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Iodine Deficiency : CK(110) : AC(18), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Iron Overload (AC 1) (CK 2)

Grape seed proanthocyanidin extract as a naturally occurring prophylactic treatment for fluoride-induced hepatotoxicity associated with iron overload.

Pubmed Data : J Toxicol Sci. 2018 ;43(5):311-319. PMID: **29743442**

Article Published Date : Dec 31, 2017

Authors : Qiang Niu, Ping He, Shangzhi Xu, Ruling Ma, Yusong Ding, Lati Mu, Shugang Li

Study Type : Animal Study
Additional Links
Substances : Grape Seed Extract : CK(1047) : AC(329)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Iron Overload : CK(218) : AC(78)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Kidney Damage (AC 1) (CK 1)

Excess fluoride in drinking water and in the locally grown food in the affected areas might lead to chronic kidney diseases.

Pubmed Data : Environ Health Prev Med. 2015 Jul ;20(4):237-42. Epub 2015 Apr 28. PMID: **25916575**

Article Published Date : Jun 30, 2015

Authors : Ranjith W Dharmaratne

Study Type : Commentary
Additional Links

Diseases : Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage : CK(780) : AC(347)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Kidney Damage: Chemically-Induced (AC 19) (CK 43)

Ameliorative effect of traditional polyherbal formulation on TNF-α, IL-1β and Caspase-3 expression in kidneys.

Pubmed Data : J Ethnopharmacol. 2023 Jul 11 ;318(Pt A):116900. Epub 2023 Jul 11. PMID: **37442489**

Article Published Date : Jul 10, 2023

Authors : Mohammad Umar Khan, Parakh Basist, Gaurav, Sultan Zahiruddin, Naveen Reddy Penumallu, Sayeed Ahmad

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Apigenin : CK(432) : AC(391), Ellagic Acid : CK(537) : AC(292), Ferulic acid : CK(259) : AC(145), Quercetin : CK(1864) : AC(847)
Diseases : Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Interleukin-1 beta downregulation : CK(5277) : AC(2851), Renoprotective : CK(4133) : AC(1932), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Calcium alleviates fluoride-induced kidney damage.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Dec 15 ;226:112851. Epub 2021 Oct 4. PMID: **34619480**

Article Published Date : Dec 14, 2021

Authors : Haojie Li, Junjiang Fan, Yangfei Zhao, Jiarong Yang, Huimiao Xu, Ram Kumar Manthari, Xiaofang Cheng, Jundong Wang, Jinming Wang

Study Type : Animal Study
Additional Links
Substances : Calcium : CK(444) : AC(68)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Renoprotective : CK(4133) : AC(1932), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Combination of fluoride and SO2 induce DNA damage and morphological alterations in male rat kidney.

Pubmed Data : Cell Physiol Biochem. 2018 ;50(2):734-744. Epub 2018 Oct 11. PMID: **30308495**

Article Published Date : Dec 31, 2017

Authors : Yan Gao, Chen Liang, Jianhai Zhang, Junjie Ma, Jinming Wang, Ruiyan Niu, Chiranjeevi Tikka, Yewei Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Air Pollution Linked Toxicity : CK(4951) : AC(731), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Evaluation of kidney injury biomarkers in an adult Mexican population environmentally exposed to fluoride and low arsenic levels.

Pubmed Data : Toxicol Appl Pharmacol. 2018 Aug 1 ;352:97-106. Epub 2018 May 22. PMID: **29800643**

Article Published Date : Jul 31, 2018

Authors : Monica I Jiménez-Córdova, Mariana Cárdenas-González, Guadalupe Aguilar-Madrid, Luz C Sanchez-Peña, Ángel Barrera-Hernández, Iván A Domínguez-Guerrero, Carmen González-Horta, Olivier C Barbier, Luz M Del Razo

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Renotoxic : CK(56) : AC(20)

Exposure to fluoride induces apoptosis in the liver, kidney, and heart of Xenopus laevis.

Pubmed Data : Acta Histochem. 2023 Apr ;125(3):151999. Epub 2023 Mar 9. PMID: **36905872**

Article Published Date : Mar 31, 2023

Authors : Siting Wang, Hongmei Ning, Liushuai Hua, Fei Ren, Lingli Chen, Zhisheng Ma, Rongbo Li, Yaming Ge, Zhihong Yin

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124), Renotoxic : CK(56) : AC(20)

Fluoride effects on cell viability and ENaC expression in kidney epithelial cells.

Pubmed Data : Toxicol Mech Methods. 2021 Oct ;31(8):566-571. Epub 2021 Jun 21. PMID: **34151709**

Article Published Date : Sep 30, 2021

Authors : Mariana R Santesso, Flávia A Oliveira, Cintia K Tokuhara, Gabriela S N Oliveira, Flávia M Levy, Lígia S Antonio, Marília A R Buzalaf, Rodrigo C Oliveira

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced hepatic and cardio-renal toxicity in a concentration-dependent manner.

Pubmed Data : Biol Trace Elem Res. 2023 Jan ;201(1):229-241. Epub 2022 Jan 12. PMID: **35023047**

Article Published Date : Dec 31, 2022

Authors : Priyanka Sharma, Pawan Kumar Verma, Shilpa Sood, Maninder Singh, Deepika Verma

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Grape seed procyanidin extract attenuate sodium fluoride-induced oxidative damage and apoptosis in rat kidneys.

Pubmed Data : Biomed Environ Sci. 2020 Jun 20 ;33(6):454-457. PMID: **32641209**

Article Published Date : Jun 19, 2020

Authors : Er Hui Wang, Zeng Li Yu, Guan Fang Ping, De Sheng Zhai

Study Type : Animal Study
Additional Links
Substances : Grape Seed Extract : CK(1047) : AC(329)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Proanthocyanidins : CK(494) : AC(157)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hesperidin protects liver and kidney against sodium fluoride-induced toxicity.

Pubmed Data : Life Sci. 2021 Sep 15 ;281:119730. Epub 2021 Jun 17. PMID: **34147482**

Article Published Date : Sep 14, 2021

Authors : Cuneyt Caglayan, Fatih Mehmet Kandemir, Ekrem Darendelioğlu, Sefa Küçükler, Adnan Ayna

Study Type : In Vitro Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Inflammation : CK(15536) : AC(5279), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High fluoride exposure damages kidney and liver function, triggering oxidative stress, apoptosis, and inflammation.

Pubmed Data : J Oral Biol Craniofac Res. 2024 ;14(6):735-745. Epub 2024 Oct 15. PMID: **39484005**

Article Published Date : Jan 01, 2024

Authors : Sirigala Lavanya, Kasirajan Hema Shree, Prathiba Ramani

Study Type : Review
Additional Links
Diseases : Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

N-acetylcysteine and thymoquinone have renoprotective effects of against the toxicity of fluoride via multiple mechanisms.

Pubmed Data : Biomed Res Int. 2018 ;2018:5614803. Epub 2018 Jun 28. PMID: **30050936**

Article Published Date : Dec 31, 2017

Authors : Ahlam M Alhusaini, Laila M Faddah, Naglaa F El Orabi, Iman H Hasan

Study Type : Animal Study
Additional Links
Substances : Cysteine (see N-Acetylcysteine) : CK(111) : AC(33), Thymoquinone : CK(1178) : AC(692)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Glutathione Upregulation : CK(357) : AC(109), Nrf2 activation : CK(2908) : AC(1762), Renoprotective : CK(4133) : AC(1932), Superoxide Dismutase Up-regulation : CK(2327) : AC(896), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Protective effect of quercetin and ginger extract against dimethoate

potentiated fluoride-induced nephrotoxicity.

Pubmed Data : Foods. 2023 May 5 ;12(9). Epub 2023 May 5. PMID: **37174437**

Article Published Date : May 04, 2023

Authors : Priyanka Sharma, Pawan Kumar Verma, Shilpa Sood, Rasia Yousuf, Amit Kumar, Rajinder Raina, Muhammad Asim Shabbir, Zuhaib F Bhat

Study Type : Animal Study
Additional Links
Substances : Ginger : CK(1591) : AC(477), Quercetin : CK(1864) : AC(847)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Protective effect of royal jelly on fluoride-induced nephrotoxicity.

Pubmed Data : Biomarkers. 2022 Jun 23:1-14. Epub 2022 Jun 23. PMID: **35735023**

Article Published Date : Jun 22, 2022

Authors : Abdullah Aslan, Seda Beyaz, Ozlem Gok, Muhammed Ismail Can, Gozde Parlak, Ramazan Gundogdu, Ibrahim Hanifi Ozercan, Serpil Baspinar

Study Type : Animal Study
Additional Links
Substances : Royal Jelly : CK(634) : AC(234)
Diseases : Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Renoprotective : CK(4133) : AC(1932)
Problem Substances : Fluoride : CK(1815) : AC(454)

Rutin mitigates fluoride-induced nephrotoxicity by inhibiting ROS-mediated lysosomal membrane permeabilization.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Apr 1 ;274:116195. Epub 2024 Mar 12. PMID: **38479315**

Article Published Date : Mar 31, 2024

Authors : Yue Ma, Panpan Xu, Hengrui Xing, Yue Zhang, Tingting Li, Xueman Ding, Li Liu, Qiang Niu

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Inflammation : CK(15536) : AC(5279), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Selenium attenuates apoptosis and p-AMPK expressions in fluoride-induced NRK-52E cells.

Pubmed Data : Environ Sci Pollut Res Int. 2019 May ;26(15):15685-15697. Epub 2019 Apr 4. PMID: **30949948**

Article Published Date : Apr 30, 2019

Authors : Jiping Gao, Yu Wang, Guoqiang Xu, Jianing Wei, Kai Chang, Xiaolin Tian, Maolin Liu, Xiaoyan Yan, Meijun Huo, Guohua Song

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride has adverse effects in the fetal kidney during pregnancy.

Pubmed Data : Environ Toxicol Pharmacol. 2024 Sep ;110:104545. Epub 2024 Aug 28. PMID: **39208996**

Article Published Date : Sep 01, 2024

Authors : Esaú Montañez-Rodriguez, Sabino Hazael Avila-Rojas, Ariana Guadalupe Jimenez-Dorantes, Juan Carlos León-Contreras, Rogelio Hernandez-Pando, JoséManuel Arreola-Guerra, Casimiro Gerarduzzi, María Estela Meléndez-Camargo, Luz M Del Razo, Olivier Christophe Barbier

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Nephrotoxic : CK(203) : AC(52)

Sodium fluoride induces apoptosis in the kidney of rats through caspase-mediated pathways and DNA damage.

Pubmed Data : J Physiol Biochem. 2014 Sep ;70(3):857-68. Epub 2014 Aug 27. PMID: **25158646**

Article Published Date : Aug 31, 2014

Authors : Guo Hua Song, Ji Ping Gao, Chun Fang Wang, Chao Yang Chen, Xiao Yan Yan, Min Guo, Yu Wang, Fu Bing Huang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Renotoxic : CK(56) : AC(20)

Sodium fluoride induces nephrotoxicity via oxidative stress-regulated mitochondrial SIRT3 signaling pathway.

Pubmed Data : Sci Rep. 2017 Apr 6 ;7(1):672. Epub 2017 Apr 6. PMID: **28386112**

Article Published Date : Apr 05, 2017

Authors : Chao Song, Beibei Fu, Jingcheng Zhang, Jiamin Zhao, Mengke Yuan, Wei Peng, Yong Zhang, Haibo Wu

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Renotoxic : CK(56) : AC(20)

The footprints of mitochondrial fission and apoptosis in fluoride-induced renal dysfunction.

Pubmed Data : Biol Trace Elem Res. 2024 Sep ;202(9):4125-4135. Epub 2023 Dec 7. PMID: **38057486**

Article Published Date : Aug 31, 2024

Authors : Qiyong Zuo, Lin Lin, Yuling Zhang, Mohammad Mehdi Ommati, Hongwei Wang, Jing Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Lead Poisoning (AC 3) (CK 13)

Flouride increases lead concentrations in whole blood and in calcified tissues from lead-exposed rats.

Pubmed Data : Toxicology. 2010 Feb 25. Epub 2010 Feb 25. PMID: **20188782**

Article Published Date : Feb 25, 2010

Authors : Rosangela M M Sawan, Giselle A S Leite, Maria C P Saraiva, Fernando Barbosa, Jose E Tanus-Santos, Raquel F Gerlach

Study Type : Animal Study
Additional Links
Diseases : Lead Poisoning : CK(479) : AC(180)
Problem Substances : Fluoride : CK(1815) : AC(454), Lead : CK(684) : AC(227)

Fluoridination of water contributes to elevated blood levels and other disorders in children.

Pubmed Data : Neurotoxicology. 2007 Sep;28(5):1032-42. Epub 2007 Mar 1. PMID: **17420053**

Article Published Date : Sep 01, 2007

Authors : Myron J Coplan, Steven C Patch, Roger D Masters, Marcia S Bachman

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Lead Poisoning : CK(479) : AC(180)
Additional Keywords : Fluoride In The Water : CK(13) : AC(3)
Problem Substances : Fluoride : CK(1815) : AC(454)

Lead enhances fluoride influence on apoptotic processes in the HepG2 liver cell line.

Pubmed Data : Toxicol Ind Health. 2016 Mar ;32(3):517-25. Epub 2013 Nov 5. PMID: **24193047**

Article Published Date : Feb 29, 2016

Authors : Izabela Gutowska, Irena Baranowska-Bosiacka, Ewa Siwiec, Małgorzata Szczuko, Agnieszka Kolasa, Anna Kondarewicz, Marta Rybicka, Małgorzata Dunaj-Stańczyk, Ireneusz Wiernicki, Dariusz Chlubek, Ewa Stachowska

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Lead Poisoning : CK(479) : AC(180)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Fluoride : CK(1815) : AC(454), Lead : CK(684) : AC(227), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Learning disorders (AC 18) (CK 106)

A review of the effects of chronic fluorosis on the brain.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Oct 1 ;244:114021. Epub 2022 Aug 29. PMID: **36049331**

Article Published Date : Sep 30, 2022

Authors : Chao Ren, Hui-Hua Li, Cai-Yi Zhang, Xi-Cheng Song

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Autophagy may be involved in fluoride-induced learning impairment in rats.

Pubmed Data : Biol Trace Elem Res. 2020 Feb ;193(2):502-507. Epub 2019 May 20. PMID: **31111310**

Article Published Date : Jan 31, 2020

Authors : Chengzhi Zhang, Simeng Huo, Yumei Fan, Yanhui Gao, Yanmei Yang, Dianjun Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children with fluorosis in coal-burning areas had impaired IQ and obviously had impaired verbal intelligence quotient.

Pubmed Data : Biol Trace Elem Res. 2021 Feb ;199(2):482-489. Epub 2020 May 3. PMID: **32363519**

Article Published Date : Jan 31, 2021

Authors : Didong Lou, Yan Luo, Jing Liu, Dan Zheng, Rongrong Ma, Fangping Chen, Yanni Yu, Zhizhong Guan

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Concentration of Fluoride in the ingested water was significantly associated with the IQ of children.

Pubmed Data : J Int Soc Prev Community Dent. 2017 ;7(5):252-258. Epub 2017 Sep 18. PMID: **29026697**

Article Published Date : Dec 31, 2016

Authors : Priyanka Razdan, Basavaraj Patthi, Jishnu Krishna Kumar, Nikhil Agnihotri, Prajakta Chaudhari, Monika Prasad

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Development of nonverbal abilities in males may be more vulnerable to prenatal fluoride exposure than language or motor abilities, even at levels within the recommended intake range.

Pubmed Data : Neurotoxicology. 2021 Dec ;87:86-93. Epub 2021 Aug 31. PMID: **34478773**

Article Published Date : Nov 30, 2021

Authors : Alejandra Cantoral, Martha M Téllez-Rojo, Ashley J Malin, Lourdes Schnaas, Erika Osorio-Valencia, Adriana Mercado, EÁngeles Martínez-Mier, Robert O Wright, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effects of neuron autophagy induced by arsenic and fluoride on spatial learning and memory in offspring rats.

Pubmed Data : Chemosphere. 2022 Dec ;308(Pt 2):136341. Epub 2022 Sep 7. PMID: **36087721**

Article Published Date : Nov 30, 2022

Authors : Qiuyi Zhao, Weizhe Pan, Jia Li, Shengnan Yu, Yan Liu, Xiaoli Zhang, Ruodi Qu, Qian Zhang, Ben Li, Xiaoyan Yan, Xuefeng Ren, Yulan Qiu

Study Type : Animal Study
Additional Links
Diseases : Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Excessive fluoride exposure may have adverse effects on children's intelligence.

Pubmed Data : Chin Med J (Engl). 2022 Aug 5 ;135(15):1846-1854. Epub 2022 Aug 5. PMID: **35838408**

Article Published Date : Aug 04, 2022

Authors : Zichen Feng, Ning An, Fangfang Yu, Jun Ma, Na Li, Yuhui Du, Meng Guo, Kaihong Xu, Xiangbo Hou, Zhiyuan Li, Guoyu Zhou, Yue Ba

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride and arsenic exposure impairs learning and memory and decreases mGluR5 expression in the hippocampus and cortex in rats.

Pubmed Data : PLoS One. 2014 ;9(4):e96041. Epub 2014 Apr 23. PMID: **24759735**

Article Published Date : Dec 31, 2013

Authors : Shoufang Jiang, Jing Su, Sanqiao Yao, Yanshu Zhang, Fuyuan Cao, Fei Wang, Huihui Wang, Jun Li, Shuhua Xi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride exposure during development affects both cognition and emotion in mice.

Pubmed Data : Physiol Behav. 2014 Jan 30 ;124:1-7. Epub 2013 Oct 30. PMID: **24184405**

Article Published Date : Jan 29, 2014

Authors : Fei Liu, Jing Ma, Hui Zhang, Peng Liu, You-Ping Liu, Bo Xing, Yong-Hui Dang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride is inversely associated with intelligence.

Pubmed Data : Environ Int. 2021 Oct ;155:106681. Epub 2021 Jun 4. PMID: **34098334**

Article Published Date : Sep 30, 2021

Authors : Xingchen Yu, Lu Xia, Shun Zhang, Guoyu Zhou, Yonggang Li, Hongliang Liu, Changchun Hou, Qian Zhao, Lixin Dong, Yushan Cui, Qiang Zeng, Aiguo Wang, Li Liu

Study Type : Human Study

Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Impairment of learning and memory in mouse offspring induced by perinatal fluoride exposure may partly result from the enhanced miR-124 and miR-132.

Pubmed Data : Chemosphere. 2018 Jan 8 ;197:117-122. Epub 2018 Jan 8. PMID: **29334651**

Article Published Date : Jan 07, 2018

Authors : Jixiang Wang, Yuliang Zhang, Zhenzhen Guo, Rui Li, Xingchen Xue, Zilong Sun, Ruiyan Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Iodine status modifies the association between fluoride exposure in pregnancy and preschool boys' intelligence.

Pubmed Data : Nutrients. 2022 Jul 16 ;14(14). Epub 2022 Jul 16. PMID: **35889877**

Article Published Date : Jul 15, 2022

Authors : Carly V Goodman, Meaghan Hall, Rivka Green, Jonathan Chevrier, Pierre Ayotte, Esperanza Angeles Martinez-Mier, Taylor McGuckin, John Krzeczkowski, David Flora, Richard Hornung, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Substances : Iodine : CK(182) : AC(32)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Iodine Deficiency : CK(110) : AC(18), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Low-to-moderate fluoride exposure was associated with dysfunction of cholinergic system for children.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Nov 20 ;228:112959. Epub 2021 Nov 20. PMID: **34808511**

Article Published Date : Nov 19, 2021

Authors : Sumei Wang, Qian Zhao, Gaochun Li, Mengwei Wang, Hongliang Liu, Xingchen Yu, Jingwen Chen, Pei Li, Lixin Dong, Guoyu Zhou, Yushan Cui, Mengru Wang, Li Liu, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Maternal fluoride exposure during gestation and lactation decreased learning and memory ability of mouse pups.

Pubmed Data : Hum Exp Toxicol. 2018 Jan ;37(1):87-93. Epub 2017 Feb 13. PMID: **29187078**

Article Published Date : Dec 31, 2017

Authors : Z Sun, Y Zhang, X Xue, R Niu, J Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

NaF-induced neurotoxicity via activation of the IL-1β/JNK signaling pathway.

Pubmed Data : Toxicology. 2022 Mar 15 ;469:153132. Epub 2022 Feb 13. PMID: **35172196**

Article Published Date : Mar 14, 2022

Authors : Chengzhi Zhang, Yanmei Yang, Yanhui Gao, Dianjun Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prenatal fluoride exposure and cognitive outcomes in children at 4 and 6-12 years of age in Mexico.

Pubmed Data : Environ Health Perspect. 2017 Sep 19 ;125(9):097017. Epub 2017 Sep 19. PMID: **28937959**

Article Published Date : Sep 18, 2017

Authors : Morteza Bashash, Deena Thomas, Howard Hu, E Angeles Martinez-Mier, Brisa N Sanchez, Niladri Basu, Karen E Peterson, Adrienne S Ettinger, Robert Wright, Zhenzhen Zhang, Yun Liu, Lourdes Schnaas, Adriana Mercado-García, Martha María Téllez-Rojo, Mauricio Hernández-Avila

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Systematic review of epidemiological and toxicological evidence on health effects of fluoride in drinking water.

Pubmed Data : Crit Rev Toxicol. 2024 Feb 6:1-33. Epub 2024 Feb 6. PMID: **38318766**

Article Published Date : Feb 05, 2024

Authors : Mohamed Kadry Taher, Franco Momoli, Jennifer Go, Shintaro Hagiwara, Siva Ramoju, Xuefeng Hu, Natalie Jensen, Rowan Terrell, Alex Hemmerich, Daniel Krewski

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The influence of fluoride in drinking water on the incidence of fluorosis and intelligence of elementary school students in Palu City.

Pubmed Data : Gac Sanit. 2021 ;35 Suppl 2:S159-S163. PMID: **34929801**

Article Published Date : Dec 31, 2020

Authors : Sri Indah Yani, Arifin Seweng, Anwar Mallongi, Rosmala Nur, Muh Tahir Abdullah, Ummu Salmah, Saifudin Sirajuddin, Muhammad Basir-Cyio, Mahfudz, Alam Anshary

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Lipid Peroxidation (AC 7) (CK 13)

Aluminum appears to enhance the neurotoxic hazards caused by fluoride.

Pubmed Data : Drug Chem Toxicol. 2009 ;32(3):215-21. PMID: **19538017**

Article Published Date : Dec 31, 2008

Authors : Tanzeer Kaur, Rakesh K Bijarnia, Bimla Nehru

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Curcumin attenuates neurotoxicity induced by fluoride: An in vivo evidence.

Pubmed Data : Pharmacogn Mag. 2014 Jan ;10(37):61-5. PMID: **24696547**

Article Published Date : Dec 31, 2013

Authors : Chhavi Sharma, Pooja Suhalka, Piyu Sukhwal, Neha Jaiswal, Maheep Bhatnagar

Study Type : Animal Study
Additional Links
Substances : Curcumin : CK(6902) : AC(3215)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride exposure during pregnancy and lactation triggers oxidative stress and molecular changes in hippocampus of offspring rats.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Jan 15 ;208:111437. Epub 2020 Oct 20. PMID: **33096359**

Article Published Date : Jan 14, 2021

Authors : Maria Karolina Martins Ferreira, Walessa Alana Bragança Aragão, Leonardo Oliveira Bittencourt, Bruna Puty, Aline Dionizio, Michel Platini Caldas de Souza, Marilia Afonso Rabelo Buzalaf, Edivaldo Herculano de Oliveira, Maria Elena Crespo-Lopez, Rafael Rodrigues Lima

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced hepatic and cardio-renal toxicity in a concentration-dependent manner.

Pubmed Data : Biol Trace Elem Res. 2023 Jan ;201(1):229-241. Epub 2022 Jan 12. PMID: **35023047**

Article Published Date : Dec 31, 2022

Authors : Priyanka Sharma, Pawan Kumar Verma, Shilpa Sood, Maninder Singh, Deepika Verma

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) :

AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosilicic acid induces DNA damage and oxidative stress in bone marrow mesenchymal stem cells.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2021 ;861-862:503297. Epub 2020 Nov 21. PMID: **33551106**

Article Published Date : Dec 31, 2020

Authors : Ana L H Garcia, Juliana Picinini, Maiele D Silveira, Melissa Camassola, Ana P V Visentim, Mirian Salvador, Juliana da Silva

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Purple corn anthocyanins protect against fluoride-induced oxidative damage of liver and kidney in rats.

Pubmed Data : Int J Environ Res Public Health. 2014 Jan 13 ;11(1):1020-33. Epub 2014 Jan 13. PMID: **24419046**

Article Published Date : Jan 12, 2014

Authors : Zhuo Zhang, Bo Zhou, Hiaohong Wang, Fei Wang, Yingli Song, Shengnan Liu, Shuhua Xi

Study Type : Animal Study
Additional Links
Substances : Corn: Purple : CK(32) : AC(18)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Rutin attenuates neurobehavioral deficits, oxidative stress, neuro-inflammation and apoptosis in fluoride treated rats.

Pubmed Data : Neurosci Lett. 2018 Aug 24 ;682:92-99. Epub 2018 Jun 13. PMID: **29908257**

Article Published Date : Aug 23, 2018

Authors : Kpobari W Nkpaa, Godspower I Onyeso

Study Type : Animal Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Inflammation : CK(15536) : AC(5279), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Low Immune Function: Chemically-Induced (AC 1) (CK 2)

Fluoride induces immunotoxicity by regulating riboflavin transport and metabolism partly through IL-17A in the spleen.

Pubmed Data : J Hazard Mater. 2024 Sep 5 ;476:135085. Epub 2024 Jul 2. PMID: **38968825**

Article Published Date : Sep 05, 2024

Authors : Yurou Qiao, Yukun Cui, Yanjia Tan, Cuicui Zhuang, Xiang Li, Yufei Yong, Xinying Zhang, Xuting Ren, Miaomiao Cai, Jie Yang, Yilin Lang, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Drug-Induced Nutrient Depletion: Riboflavin (B-2) : CK(2) : AC(1), Low Immune Function: Chemically-Induced : CK(4) : AC(2), Mitochondrial Dysfunction : CK(618) : AC(262), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Low Testosterone (AC 2) (CK 3)

Ameliorative effects of nano Moringa on fluoride-induced testicular damage via down regulation of the StAR gene and altered steroid hormones.

Pubmed Data : Reprod Biol. 2022 Dec 21 ;23(1):100724. Epub 2022 Dec 21. PMID: **36563520**

Article Published Date : Dec 21, 2022

Authors : Entsar R Abd-Allah, Heba Ali Abd El-Rahman

Study Type : Animal Study
Additional Links
Substances : Moringa oleifera : CK(748) : AC(377)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Low Testosterone : CK(852) : AC(140), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Fluoride : CK(1815) : AC(454)

Sodium fluoride disrupts testosterone biosynthesis by affecting the steroidogenic pathway in TM3 Leydig cells.

Pubmed Data : Chemosphere. 2018 Dec ;212:447-455. Epub 2018 Aug 22. PMID: **30165274**

Article Published Date : Nov 30, 2018

Authors : Banu Orta Yilmaz, Ahu Korkut, Melike Erkan

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Low Testosterone : CK(852) : AC(140), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Lung Damage (AC 1) (CK 2)

Royal jelly regulates the caspase, Bax and COX-2, TNF-α protein

pathways in the fluoride exposed lung damage in rats.

Pubmed Data : Tissue Cell. 2022 Feb 7 ;76:101754. Epub 2022 Feb 7. PMID: 35158127

Article Published Date : Feb 06, 2022

Authors : Abdullah Aslan, Ozlem Gok, Seda Beyaz, Muhammed Ismail Can, Gozde Parlak, Ramazan Gundogdu, Ibrahim Hanifi Ozercan, Serpil Baspinar

Study Type : Animal Study
Additional Links
Substances : Royal Jelly : CK(634) : AC(234)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lung Damage : CK(390) : AC(167)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Cyclooxygenase 2 Inhibitors : CK(2067) : AC(1279), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Male Reproductive Development Abnormalities (AC 1) (CK 2)

Developmental sodium fluoride exposure induced an enhanced testicular apoptosis in rats.

Pubmed Data : Environ Pollut. 2016 Jan 31 ;212:97-104. Epub 2016 Jan 31. PMID: 26840522

Article Published Date : Jan 30, 2016

Authors : Shun Zhang, Qiang Niu, Hui Gao, Rulin Ma, Rongrong Lei, Cheng Zhang, Tao Xia, Pei Li, Chunyan Xu, Chao Wang, Jingwen Chen, Lixing Dong, Qian Zhao, Aiguo Wang

Study Type : Animal Study
Additional Links
Diseases : Male Reproductive Development Abnormalities : CK(91) : AC(47)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Memory Disorders (AC 11) (CK 21)

A review of the effects of chronic fluorosis on the brain.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Oct 1 ;244:114021. Epub 2022 Aug 29. PMID: 36049331

Article Published Date : Sep 30, 2022

Authors : Chao Ren, Hui-Hua Li, Cai-Yi Zhang, Xi-Cheng Song

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effect of hesperidin on fluoride-induced neurobehavioral and biochemical changes in rats.

Pubmed Data : J Biochem Mol Toxicol. 2020 Nov ;34(11):e22575. Epub 2020 Jul 5. PMID: **32627286**

Article Published Date : Oct 31, 2020

Authors : Pawan Jaiswal, Mukesh Mandal, Awanish Mishra

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effects of neuron autophagy induced by arsenic and fluoride on spatial learning and memory in offspring rats.

Pubmed Data : Chemosphere. 2022 Dec ;308(Pt 2):136341. Epub 2022 Sep 7. PMID: **36087721**

Article Published Date : Nov 30, 2022

Authors : Qiuyi Zhao, Weizhe Pan, Jia Li, Shengnan Yu, Yan Liu, Xiaoli Zhang, Ruodi Qu, Qian Zhang, Ben Li, Xiaoyan Yan, Xuefeng Ren, Yulan Qiu

Study Type : Animal Study
Additional Links
Diseases : Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exercise alleviates fluoride-induced learning and memory impairment.

Pubmed Data : Biol Trace Elem Res. 2024 Jan 20. Epub 2024 Jan 20. PMID: **38244175**

Article Published Date : Jan 19, 2024

Authors : Lei Chai, Qiqi Cao, Ke Liu, Run Zhu, Hao Li, Yanghuan Yu, Jixiang Wang, Ruiyan Niu, Ding Zhang, Bo Yang, Mohammad Mehdi Ommati, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Therapeutic Actions : Exercise : CK(6247) : AC(999)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride and arsenic exposure affects spatial memory and activates the ERK/CREB signaling pathway in offspring rats.

Pubmed Data : Neurotoxicology. 2017 Mar ;59:56-64. Epub 2017 Jan 15. PMID: **28099871**

Article Published Date : Feb 28, 2017

Authors : Yu-Peng Zhu, Shu-Hua Xi, Ming-Yan Li, Ting-Ting Ding, Nan Liu, Fu-Yuan Cao, Yang Zeng, Xiao-Jing Liu, Jun-Wang Tong, Shou-Fang Jiang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Fluoride and arsenic exposure impairs learning and memory and decreases mGluR5 expression in the hippocampus and cortex in rats.

Pubmed Data : PLoS One. 2014 ;9(4):e96041. Epub 2014 Apr 23. PMID: **24759735**

Article Published Date : Dec 31, 2013

Authors : Shoufang Jiang, Jing Su, Sanqiao Yao, Yanshu Zhang, Fuyuan Cao, Fei Wang, Huihui Wang, Jun Li, Shuhua Xi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Lactobacillus johnsonii BS15 improves intestinal environment against fluoride-induced memory impairment.

Pubmed Data : PeerJ. 2020 ;8:e10125. Epub 2020 Oct 7. PMID: **33083147**

Article Published Date : Dec 31, 2019

Authors : Jinge Xin, Dong Zeng, Hesong Wang, Ning Sun, Abdul Khalique, Ying Zhao, Liqian Wu, Kangcheng Pan, Bo Jing, Xueqin Ni

Study Type : Animal Study
Additional Links
Substances : Lactobacillus probiotics : CK(5310) : AC(1187)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Pharmacological Actions : Gastrointestinal Agents : CK(6875) : AC(2212), Neuroprotective Agents : CK(17667) : AC(7641)
Additional Keywords : Gut-brain Axis : CK(675) : AC(281)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Low glucose utilization and neurodegenerative changes caused by sodium fluoride exposure in rat's developmental brain.

Pubmed Data : Neuromolecular Med. 2014 Mar ;16(1):94-105. Epub 2013 Aug 28. PMID: **23982469**

Article Published Date : Feb 28, 2014

Authors : Chunyang Jiang, Shun Zhang, Hongliang Liu, Zhizhong Guan, Qiang Zeng, Cheng Zhang, Rongrong Lei, Tao Xia, Zhenglun Wang, Lu Yang, Yihu Chen, Xue Wu, Xiaofei Zhang, Yushan Cui, Linyu Yu, Aiguo Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Memory impairment induced by sodium fluoride is associated with changes in brain monoamine levels.

Pubmed Data : Neurotox Res. 2011 Jan ;19(1):55-62. Epub 2009 Dec 3. PMID: **19957215**

Article Published Date : Dec 31, 2010

Authors : Marcela Pereira, Patrícia A Dombrowski, Estela M Losso, Lea R Chioca, Cláudio Da Cunha, Roberto Andreatini

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Probiotic alleviate fluoride-induced memory impairment by reconstructing gut microbiota in mice.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Jun 1 ;215:112108. Epub 2021 Mar 30. PMID: **33799132**

Article Published Date : May 31, 2021

Authors : Jinge Xin, Hesong Wang, Ning Sun, Shamsuddin Bughio, Dong Zeng, Lianxin Li, Yanyan Wang, Abdul Khalique, Yan Zeng, Kangcheng Pan, Bo Jing, Hailin Ma, Yang Bai, Xueqin Ni

Study Type : Animal Study
Additional Links
Substances : Probiotics : CK(9684) : AC(1696)

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Pharmacological Actions : Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prolonged fluoride exposure induces spatial-memory deficit and hippocampal dysfunction by inhibiting small heat shock protein 22 in mice.

Pubmed Data : J Hazard Mater. 2023 Aug 15 ;456:131595. Epub 2023 May 7. PMID: **37224709**

Article Published Date : Aug 14, 2023

Authors : Jinge Xin, Bin Zhu, Hesong Wang, Yong Zhang, Ning Sun, Xi Cao, Liqin Zheng, Yanxi Zhou, Jing Fang, Bo Jing, Kangcheng Pan, Yan Zeng, Dong Zeng, Fali Li, Yang Xia, Peng Xu, Xueqin Ni

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Metabolic Diseases (AC 1) (CK 10)

Elevated serum fluoride levels in perimenopausal women are related to the components of metabolic syndrome.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2021 Sep ;25(17):5474-5482. PMID: **34533791**

Article Published Date : Aug 31, 2021

Authors : D Schneider-Matyka, I Gutowska, M Panczyk, E Grochans, M Szkup

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypertension : CK(8603) : AC(1329), Metabolic Diseases : CK(1252) : AC(263)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Microplastic Toxicity (AC 1) (CK 1)

Fluoride enhances polystyrene nanoparticles cytotoxicity in colonocytes in vitro model.

Pubmed Data : Chem Biol Interact. 2022 Nov 1 ;367:110169. Epub 2022 Sep 20. PMID: **36165825**

Article Published Date : Oct 31, 2022

Authors : Karol P Steckiewicz, Anna Adamska, Magdalena Narajczyk, Elżbieta Megiel, Iwona Inkielewicz-Stepniak

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Microplastic Toxicity : CK(714) : AC(342)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Nano Plastic-and Micro-Particles : CK(198) : AC(91), Polystyrene nanoparticles : CK(427) : AC(212), Sodium Fluoride : CK(1446) : AC(393)

Mineral Deficiencies (AC 1) (CK 2)

Fluoride Ingestion Impairs Mineral Absorption by Forming Chelating Macromolecular Complexes in the Gut.

Pubmed Data : Biol Trace Elem Res. 2024 Oct 8. Epub 2024 Oct 8. PMID: **39377957**

Article Published Date : Oct 08, 2024

Authors : Saba Sarwar, Javed Ahsan Quadri, A Shariff

Study Type : Animal Study

Additional Links

Diseases : Mineral Deficiencies : CK(1175) : AC(153)

Problem Substances : Fluoride : CK(1815) : AC(454)

Mitochondrial Diseases (AC 1) (CK 1)

Fluoride-induced mitochondrial dysfunction.

Pubmed Data : Biol Trace Elem Res. 2024 Mar ;202(3):835-849. Epub 2023 Jun 10. PMID: **37300595**

Article Published Date : Feb 29, 2024

Authors : Sachindra Kumar, Smita Shenoy, Ravindra Shantakumar Swamy, V Ravichandiran, Nitesh Kumar

Study Type : Review

Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Diseases : CK(607) : AC(262), Oxidative Stress : CK(13443) : AC(5499)

Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Mitochondrial Dysfunction (AC 10) (CK 16)

Effect of fluoride on cytotoxicity involved in mitochondrial dysfunction.

Pubmed Data : Front Vet Sci. 2022 ;9:850771. Epub 2022 Apr 19. PMID: **35518640**

Article Published Date : Dec 31, 2021

Authors : Mingbang Wei, Yourong Ye, Muhammad Muddassir Ali, Yangzom Chamba, Jia Tang, Peng Shang

Study Type : Review

Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effects of fluoride exposure on mitochondrial function: Energy metabolism, dynamics, biogenesis and mitophagy.

Pubmed Data : Environ Toxicol Pharmacol. 2022 Aug ;94:103916. Epub 2022 Jun 20. PMID: **35738460**

Article Published Date : Jul 31, 2022

Authors : Sabino Hazael Avila-Rojas, Omar Emiliano Aparicio-Trejo, Marco Antonio Sanchez-Guerra, Olivier Christophe Barbier

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure induces mitochondrial damage and mitophagy via activation of the IL-17A pathway in hepatocytes.

Pubmed Data : Sci Total Environ. 2022 Jan 15 ;804:150184. Epub 2021 Sep 8. PMID: **34517333**

Article Published Date : Jan 14, 2022

Authors : Yangfei Zhao, Jinming Wang, Jianhai Zhang, Zilong Sun, Ruiyan Niu, Ram Kumar Manthari, Mohammad Mehdi Ommati, Shaolin Wang, Jundong Wang

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Fluoride induces immunotoxicity by regulating riboflavin transport and metabolism partly through IL-17A in the spleen.

Pubmed Data : J Hazard Mater. 2024 Sep 5 ;476:135085. Epub 2024 Jul 2. PMID: **38968825**

Article Published Date : Sep 05, 2024

Authors : Yurou Qiao, Yukun Cui, Yanjia Tan, Cuicui Zhuang, Xiang Li, Yufei Yong, Xinying Zhang, Xuting Ren, Miaomiao Cai, Jie Yang, Yilin Lang, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Drug-Induced Nutrient Depletion: Riboflavin (B-2) : CK(2) : AC(1), Low Immune Function: Chemically-Induced : CK(4) : AC(2), Mitochondrial Dysfunction : CK(618) : AC(262), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Focus on cognitive impairment induced by excessive fluoride: An update review.

Pubmed Data : Neuroscience. 2024 Oct 18 ;558:22-29. Epub 2024 Aug 11. PMID: **39137871**

Article Published Date : Oct 18, 2024

Authors : Yuhang Zhang, Yanhui Gao, Xiaona Liu

Study Type : Review
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Mitochondrial Dysfunction : CK(618) : AC(262), Neurotoxicity : CK(49) : AC(27), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Oxidant : CK(646) : AC(246)

Low-Level Sodium Fluoride Impairs Mitochondrial Function and Viability in Human Platelets, Affecting Wound Healing Potential.

Pubmed Data : Front Toxicol. 2024 ;6:1421184. Epub 2024 Sep 5. PMID: **39301511**

Article Published Date : Jan 01, 2024

Authors : Tetsuhiro Tsujino, Tomoni Kasahara, Hideo Kawabata, Taisuke Watanabe, Koji Nishiyama, Yutaka Kitamura, Takao Watanabe, Hajime Okudera, Tomoharu Mochizuki, Takashi Ushiki, Tomoyuki Kawase

Study Type : In Vitro Study
Additional Links
Diseases : Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Fluoride : CK(1815) : AC(454)

Mitigation of honokiol on fluoride-induced mitochondrial oxidative stress, mitochondrial dysfunction, and cognitive deficits.

Pubmed Data : J Hazard Mater. 2022 09 5 ;437:129381. Epub 2022 Jun 16. PMID: **35752048**

Article Published Date : Jan 04, 2022

Authors : Dongmei Wang, Luyang Cao, Xiang Zhou, Gang Wang, Yilu Ma, Xueqin Hao, Hua Fan

Study Type : Animal Study
Additional Links
Substances : Honokiol : CK(435) : AC(271)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Morphological changes and mitochondrial alterations on cardiomyocytes exposed to fluoride.

Pubmed Data : P R Health Sci J. 2023 Jun ;42(2):132-138. PMID: **37352535**

Article Published Date : May 31, 2023

Authors : Areli Limon-Rojas, Amaury Pozos-Guillén, Roberto Salgado-Delgado, Margarita Rodríguez Y Domínguez, Diana María Escobar-García

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)
Additional Keywords : Dose Response : CK(1769) : AC(700)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Sodium fluoride treatment impairs the subsequent embryonic developmental potential of the oocytes.

Pubmed Data : Environ Toxicol. 2015 May 26. Epub 2015 May 26. PMID: **26011085**

Article Published Date : May 25, 2015

Authors : Shuang Liang, Ming-Hui Zhao, Sun A Ock, Nam-Hyung Kim, Xiang-Shun Cui

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Systematic impacts of fluoride exposure on the metabolomics of rats.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Sep 1 ;242:113888. Epub 2022 Jul 21. PMID: **35872488**

Article Published Date : Aug 31, 2022

Authors : Shiyuan Zhao, Jinxiu Guo, Hongjia Xue, Junjun Meng, Dadi Xie, Xi Liu, Qingqing Yu, Haitao Zhong, Pei Jiang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Multiple Myeloma (AC 1) (CK 10)

Multiple myeloma patients with high 18F-sodium fluoride metabolic active volume had shorter overall survival.

Pubmed Data : Am J Nucl Med Mol Imaging. 2020 ;10(4):151-160. Epub 2020 Aug 25. PMID: **32929393**

Article Published Date : Dec 31, 2019

Authors : Mahdi Zirakchian Zadeh, Siavash Mehdizadeh Seraj, Brian Østergaard, Stephanie Mimms, William Y Raynor, Mahmoud Aly, Austin J Borja, Leila S Arani, Oke Gerke, Thomas J Werner, Hongming Zhuang, Mona-Elisabeth Revheim, Niels Abildgaard, Poul Flemming Høilund-Carlsen, Abass Alavi

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Multiple Myeloma : CK(414) : AC(159)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Muscle Atrophy (AC 1) (CK 2)

Sodium fluoride induces skeletal muscle atrophy.

Pubmed Data : PLoS One. 2022 ;17(12):e0279261. Epub 2022 Dec 22. PMID: **36548359**

Article Published Date : Dec 31, 2021

Authors : Apoorva H Nagendra, Animikh Ray, Debajit Chaudhury, Akash Mitra, Anu Vinod Ranade, Bipasha Bose, Sudheer Shenoy P

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Muscle Atrophy : CK(287) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Muscle Damage (AC 1) (CK 1)

This study has provided new evidence for the role of FGF21/ERK in fluoride-induced skeletal muscle damage.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Mar 1 ;252:114626. Epub 2023 Feb 8. PMID: **36764073**

Article Published Date : Feb 28, 2023

Authors : Lan Ma, Chengmei Zhang, Yu Gui, Tingling Zou, Shuhua Xi, Xiaoying Guo

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Muscle Damage : CK(258) : AC(83)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Neurodegenerative Diseases (AC 13) (CK 22)

Aluminium, fluoride and a combination of aluminium-fluoride treatments caused an increase in brain lipid peroxidation products and reactive oxygen species formation.

Pubmed Data : Pathophysiology. 2015 Mar ;22(1):39-48. Epub 2014 Dec 13. PMID: **25577494**

Article Published Date : Feb 28, 2015

Authors : Ibukun Dorcas Akinrinade, Adejoke Elizabeth Memudu, Olalekan Michael Ogundele, Olanrewaju Ibrahim Ajetunmobi

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Increased Risk : CK(8492) : AC(1109), Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Autophagy may be involved in fluoride-induced learning impairment in rats.

Pubmed Data : Biol Trace Elem Res. 2020 Feb ;193(2):502-507. Epub 2019 May 20. PMID: **31111310**

Article Published Date : Jan 31, 2020

Authors : Chengzhi Zhang, Simeng Huo, Yumei Fan, Yanhui Gao, Yanmei Yang, Dianjun Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic exposure to fluoride affects GSH level and NOX4 expression.

Pubmed Data : Biomolecules. 2020 Mar 9 ;10(3). Epub 2020 Mar 9. PMID: **32182821**

Article Published Date : Mar 08, 2020

Authors : Karolina Dec, Agnieszka Łukomska, Karolina Skonieczna-Żydecka, Karolina Jakubczyk, Maciej Tarnowski, Anna Lubkowska, Irena Baranowska-Bosiacka, Daniel Styburski, Marta Skórka-Majewicz, Dominika Maciejewska, Izabela Gutowska

Study Type : Animal Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic fluoride exposure and the risk of autism spectrum disorder.

Pubmed Data : Int J Environ Res Public Health. 2019 Sep 16 ;16(18). Epub 2019 Sep 16. PMID: **31527457**

Article Published Date : Sep 15, 2019

Authors : Anna Strunecka, Otakar Strunecky

Study Type : Review
Additional Links

Diseases : Autism Spectrum Disorders : CK(3676) : AC(557), Neurodegenerative Diseases : CK(12159) : AC(4162)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Effects of neuron autophagy induced by arsenic and fluoride on spatial learning and memory in offspring rats.

Pubmed Data : Chemosphere. 2022 Dec ;308(Pt 2):136341. Epub 2022 Sep 7. PMID: **36087721**

Article Published Date : Nov 30, 2022

Authors : Qiuyi Zhao, Weizhe Pan, Jia Li, Shengnan Yu, Yan Liu, Xiaoli Zhang, Ruodi Qu, Qian Zhang, Ben Li, Xiaoyan Yan, Xuefeng Ren, Yulan Qiu

Study Type : Animal Study
Additional Links
Diseases : Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Excessive fluoride and aluminium intake induces the progression of cell death which inhibit AChE activities and trigger the release of lysosomal and cell cycle proteins.

Pubmed Data : Pathophysiology. 2015 Jun ;22(2):105-15. Epub 2015 Apr 2. PMID: **25863844**

Article Published Date : May 31, 2015

Authors : Ibukun Dorcas Akinrinade, Adejoke Elizabeth Memudu, Olalekan Michael Ogundele

Study Type : Animal Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(12159) : AC(4162)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Excessive lysosomal stress response and consequently impaired autophagy contribute to fluoride-induced developmental neurotoxicity.

Pubmed Data : Biol Trace Elem Res. 2023 Sep ;201(9):4472-4483. Epub 2022 Dec 5. PMID: **36464725**

Article Published Date : Aug 31, 2023

Authors : Wanjing Xu, Zeyu Hu, Yanling Tang, Jingjing Zhang, Shangzhi Xu, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Developmental Disorder: Children : CK(148) : AC(19), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to fluoride in the prenatal and neonatal period result in the increase in COX2 activity and increase in PGE2 concentration in rats brain.

Pubmed Data : Neurotoxicology. 2019 Sep ;74:81-90. Epub 2019 Jun 5. PMID: **31175943**

Article Published Date : Aug 31, 2019

Authors : Karolina Dec, Agnieszka Łukomska, Karolina Skonieczna-Żydecka, Agnieszka Kolasa-Wołosiuk, Maciej Tarnowski, Irena Baranowska-Bosiacka, Izabela Gutowska

Study Type : Animal Study
Additional Links

Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Fluoride induced neurobehavioral impairments in experimental animals.

Pubmed Data : Biol Trace Elem Res. 2023 Mar ;201(3):1214-1236. Epub 2022 Apr 30. PMID: **35488996**

Article Published Date : Feb 28, 2023

Authors : Harsheema Ottappilakkil, Srija Babu, Satheeswaran Balasubramanian, Suryaa Manoharan, Ekambaram Perumal

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Impacts of fluoride neurotoxicity and mitochondrial dysfunction on cognition and mental health.

Pubmed Data : Int J Environ Res Public Health. 2021 Dec 7 ;18(24). Epub 2021 Dec 7. PMID: **34948493**

Article Published Date : Dec 06, 2021

Authors : Emily A Adkins, Kelly J Brunst

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Neuromodulatory effects of hesperidin against sodium fluoride-induced neurotoxicity.

Pubmed Data : Neurotoxicology. 2022 May ;90:197-204. Epub 2022 Apr 10. PMID: **35413380**

Article Published Date : Apr 30, 2022

Authors : Mustafa Onur Yıldız, Hamit Çelik, Cuneyt Caglayan, Fatih Mehmet Kandemir, Cihan Gür, İbrahim Bayav, Aydın Genç, Özge Kandemir

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Anti-Inflammatory Agents : CK(35225) : AC(15297), Interleukin-1 beta downregulation : CK(5277) : AC(2851), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

PRKAA1 induces aberrant mitophagy in a PINK1/Parkin-dependent manner, contributing to fluoride-induced developmental neurotoxicity.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Apr 15 ;255:114772. Epub 2023 Mar 14. PMID: **36924562**

Article Published Date : Apr 14, 2023

Authors : Yanling Tang, Jingjing Zhang, Zeyu Hu, Wanjing Xu, Panpan Xu, Yue Ma, Hengrui Xing, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

The toxic effects of fluoride on the central nervous system may be related to the activition of microglia cells.

Pubmed Data : Mediators Inflamm. 2012 ;2012:102954. Epub 2012 Aug 13. PMID: **22933830**

Article Published Date : Jan 01, 2012

Authors : Xi Shuhua, Liu Ziyou, Yan Ling, Wang Fei, Guifan Sun

Study Type : In Vitro Study
Additional Links
Diseases : Brain: Microglial Activation : CK(192) : AC(114), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702), Oxidant : CK(646) : AC(246)

Neurodevelopmental Disorders (AC 5) (CK 33)

Domain-specific effects of prenatal fluoride exposure on child IQ at 4, 5, and 6-12 years.

Pubmed Data : Environ Res. 2022 Aug ;211:112993. Epub 2022 Mar 9. PMID: **35276192**

Article Published Date : Jul 31, 2022

Authors : Carly V Goodman, Morteza Bashash, Rivka Green, Peter Song, Karen E Peterson, Lourdes Schnaas, Adriana Mercado-García, Sandra Martínez-Medina, Mauricio Hernández-Avila, Angeles Martinez-Mier, Martha M Téllez-Rojo, Howard Hu, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodevelopmental Disorders : CK(470) : AC(85), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride impairs mitochondrial translation by targeting miR-221-3p/c-Fos/RMND1 axis contributing to neurodevelopment defects.

Pubmed Data : Sci Total Environ. 2023 Apr 15 ;869:161738. Epub 2023 Jan 21. PMID: **36690096**

Article Published Date : Apr 14, 2023

Authors : Dongjie Li, Qian Zhao, Li Xie, Chenxi Wang, Zhiyuan Tian, Huayang Tang, Tao Xia, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride in drinking water may produce developmental neurotoxicity

Pubmed Data : Neurotoxicol Teratol. 2015 ;47:96-101. Epub 2014 Nov 8. PMID: **25446012**

Article Published Date : Dec 31, 2014

Authors : Anna L Choi, Ying Zhang, Guifan Sun, David C Bellinger, Kanglin Wang, Xiao Jing Yang, Jin Shu Li, Quanmei Zheng, Yuanli Fu, Philippe Grandjean

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodevelopmental Disorders : CK(470) : AC(85)
Additional Keywords : Dose Response : CK(1769) : AC(700)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

PRKAA1 induces aberrant mitophagy in a PINK1/Parkin-dependent manner, contributing to fluoride-induced developmental neurotoxicity.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Apr 15 ;255:114772. Epub 2023 Mar 14. PMID: **36924562**

Article Published Date : Apr 14, 2023

Authors : Yanling Tang, Jingjing Zhang, Zeyu Hu, Wanjing Xu, Panpan Xu, Yue Ma, Hengrui Xing, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Systematic review of epidemiological and toxicological evidence on health effects of fluoride in drinking water.

Pubmed Data : Crit Rev Toxicol. 2024 Feb 6:1-33. Epub 2024 Feb 6. PMID: **38318766**

Article Published Date : Feb 05, 2024

Authors : Mohamed Kadry Taher, Franco Momoli, Jennifer Go, Shintaro Hagiwara, Siva Ramoju, Xuefeng Hu, Natalie Jensen, Rowan Terrell, Alex Hemmerich, Daniel Krewski

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Neurotoxicity (AC 1) (CK 1)

Focus on cognitive impairment induced by excessive fluoride: An update review.

Pubmed Data : Neuroscience. 2024 Oct 18 ;558:22-29. Epub 2024 Aug 11. PMID: **39137871**

Article Published Date : Oct 18, 2024

Authors : Yuhang Zhang, Yanhui Gao, Xiaona Liu

Study Type : Review
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Mitochondrial Dysfunction : CK(618) : AC(262), Neurotoxicity : CK(49) : AC(27), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Oxidant : CK(646) : AC(246)

Obesity (AC 1) (CK 2)

Fluoride induced leaky gut and bloom of Erysipelatoclostridium ramosum mediate the exacerbation of obesity.

Pubmed Data : J Adv Res. 2023 Aug ;50:35-54. Epub 2022 Oct 29. PMID: **36341987**

Article Published Date : Jul 31, 2023

Authors : Guijie Chen, Yujia Peng, Yujie Huang, Minhao Xie, Zhuqing Dai, Huimei Cai, Wei Dong, Weiqi Xu, Zhiyong Xie, Dan Chen, Xia Fan, Wangting Zhou, Xuhui Kan, Tingting Yang, Chunxu Chen, Yi Sun, Xiaoxiong Zeng, Zhonghua Liu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Obesity : CK(9664) : AC(2579)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Obsessive-Compulsive Disorder (AC 1) (CK 2)

Sodium flouride exposure during pregnancy may interfere with normal development and increase the risk of neurological and psychiatric disorders in adulthood.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2010 Jun;14(6):507-12. PMID: **20712257**

Article Published Date : Jun 01, 2010

Authors : P Flace, V Benagiano, D Vermesan, R Sabatini, A M Inchingolo, A Inchingolo, P Auteri, G Ambrosi, A Tarullo, R Cagiano

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Huntington Disease : CK(222) : AC(103), Obsessive-Compulsive Disorder : CK(421) : AC(77), Prenatal Chemical Exposures : CK(2428) : AC(530), Schizophrenia : CK(1080) : AC(191), Tourette Syndrome : CK(207) : AC(30)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Teratogenic : CK(325) : AC(66)

Orchitis (AC 1) (CK 2)

Fluoride induces autoimmune orchitis involved with enhanced IL-17A secretion in mice testis.

Pubmed Data : J Agric Food Chem. 2019 Nov 8. Epub 2019 Nov 8. PMID: **31703480**

Article Published Date : Nov 07, 2019

Authors : Panhong Wu, Zilong Sun, Xiaoqian Lv, Xuejing Pei, Ram Kumar Manthari, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Autoimmune Diseases : CK(11878) : AC(2631), Fluoride Toxicity : CK(1389) : AC(376), Orchitis : CK(19) : AC(5)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Osteoarthritis (AC 1) (CK 10)

Excessive exposure of water fluoride may increase osteoarthritis risk.

Pubmed Data : Biol Trace Elem Res. 2022 Jul ;200(7):3107-3116. Epub 2021 Sep 28. PMID: **34581970**

Article Published Date : Jun 30, 2022

Authors : Alphonse Sowanou, Xinyue Meng, Nan Zhong, Yongzheng Ma, Ailin Li, Jian Wang, Hanying Li, Junrui Pei, Yanhui Gao

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Osteoarthritis : CK(1971) : AC(607)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Osteoarthritis: Knee (AC 2) (CK 20)

Relatively low fluoride in drinking water increases risk of knee osteoarthritis.

Pubmed Data : Environ Geochem Health. 2023 Nov ;45(11):8735-8747. Epub 2023 Sep 16. PMID: **37715839**

Article Published Date : Oct 31, 2023

Authors : Xinyue Meng, Jian Wang, Yang Liu, Mang Li, Zhizhong Guan, Alphonse Sowanoua, Dan Yang, Junrui Pei, Yanhui Gao

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Osteoarthritis: Knee : CK(2278) : AC(267)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

There is an increased risk of knee arthritis in patients with elevated blood fluoride levels.

Pubmed Data : Malays Orthop J. 2020 Nov ;14(3):151-154. PMID: **33403076**

Article Published Date : Oct 31, 2020

Authors : V K Singh, K S Rathore, G Khan, A Rahim, A Rashid, S Chauhan

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Osteoarthritis: Knee : CK(2278) : AC(267)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Osteosarcoma (AC 1) (CK 1)

This demonstrated ability of fluorine to exert genotoxic effects on bone cells.

Pubmed Data : Toxicol Res. 2020 Oct ;36(4):337-342. Epub 2020 Feb 24. PMID: **33005593**

Article Published Date : Sep 30, 2020

Authors : V P Volobaev, E S Serdyukova, E E Kalyuzhnaya, E A Schetnikova, A D Korotkova, A A Naik, S N Bach, A Y Prosekov, A V Larionov

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Osteosarcoma : CK(422) : AC(285)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Ovarian Diseases (AC 3) (CK 5)

Chronic fluoride exposure induces ovarian dysfunction and potential association with premature ovarian failure.

Pubmed Data : Biol Trace Elem Res. 2023 Oct 13. Epub 2023 Oct 13. PMID: **37828391**

Article Published Date : Oct 12, 2023

Authors : Xiaoke Tang, Hongjuan Li, Yali Wang, Li Zeng, Ling Long, Yajun Qu, Hui Yang, Xiaolin Zhang, Yanmin Li, Yanni Yu, Qi Zhou, Man Luo

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Ovarian Diseases : CK(33) : AC(16)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Excessive fluoride induces ovarian function impairment.

Pubmed Data : Reprod Toxicol. 2024 Feb 9:108556. Epub 2024 Feb 9. PMID: **38342390**

Article Published Date : Feb 08, 2024

Authors : Nan Geng, Siyuan Dong, Pengpeng Xie, Yi Zhang, Rong Shi, Chen Chen, Zhao Xu, Qun Chen

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Ovarian Diseases : CK(33) : AC(16)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Female reproductive function is inhibited by NaF and that exposure to NaF causes ovarian and uterine structural damage.

Pubmed Data : Food Chem Toxicol. 2013 Feb 28. Epub 2013 Feb 28. PMID: **23459146**

Article Published Date : Feb 28, 2013

Authors : Yongjiang Zhou, Hailing Zhang, Junlin He, Xuemei Chen, Yubing Ding, Yingxiong Wang Xueqing Liu

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Ovarian Diseases : CK(33) : AC(16), Uterine Diseases : CK(1291) : AC(335)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Oxidative Stress (AC 55) (CK 95)

"Decreased in vitro fertility in male rats exposed to fluoride-induced oxidative stress damage and mitochondrial transmembrane potential loss."

Pubmed Data : Toxicol Appl Pharmacol. 2008 Aug 1 ;230(3):352-7. Epub 2008 Mar 28. PMID: **18455746**

Article Published Date : Aug 01, 2008

Authors : Jeannett A Izquierdo-Vega, Manuel Sánchez-Gutiérrez, Luz María Del Razo

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21), Oxidant : CK(646) : AC(246)

A review of the effects of chronic fluorosis on the brain.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Oct 1 ;244:114021. Epub 2022 Aug 29. PMID: **36049331**

Article Published Date : Sep 30, 2022

Authors : Chao Ren, Hui-Hua Li, Cai-Yi Zhang, Xi-Cheng Song

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Administration of calcium to female rats can ameliorate the hazardous effects of fluoride observed in the biochemical, hormonal, and histological parameters.

Pubmed Data : Biol Trace Elem Res. 2015 Jul 23. Epub 2015 Jul 23. PMID: **26198134**

Article Published Date : Jul 22, 2015

Authors : N E Mohamed

Study Type : Animal Study
Additional Links
Substances : Calcium : CK(444) : AC(68)
Diseases : Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Alpha-lipoic acid plays a protective role in fluoride-induced reproductive lesion.

Pubmed Data : Zhonghua Yi Xue Za Zhi. 2020 Dec 15 ;100(46):3706-3711. PMID: **33342149**

Article Published Date : Dec 14, 2020

Authors : Y Yang, H Huang, L X Cui, F Q Li

Study Type : Animal Study
Additional Links
Substances : Alpha-Lipoic Acid : CK(1499) : AC(365)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Malondialdehyde Down-regulation : CK(2826) : AC(965)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Aluminium, fluoride and a combination of aluminium-fluoride treatments caused an increase in brain lipid peroxidation products and reactive oxygen species formation.

Pubmed Data : Pathophysiology. 2015 Mar ;22(1):39-48. Epub 2014 Dec 13. PMID: **25577494**

Article Published Date : Feb 28, 2015

Authors : Ibukun Dorcas Akinrinade, Adejoke Elizabeth Memudu, Olalekan Michael Ogundele, Olanrewaju Ibrahim Ajetunmobi

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Increased Risk : CK(8492) : AC(1109), Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Aluminum appears to enhance the neurotoxic hazards caused by fluoride.

Pubmed Data : Drug Chem Toxicol. 2009 ;32(3):215-21. PMID: **19538017**

Article Published Date : Dec 31, 2008

Authors : Tanzeer Kaur, Rakesh K Bijarnia, Bimla Nehru

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Blackberry juice and quercetin together significantly reduced sodium fluoride induced oxidative and histological changes in rats.

Pubmed Data : J Basic Clin Physiol Pharmacol. 2015 May 1 ;26(3):237-51. PMID: **25918918**

Article Published Date : Apr 30, 2015

Authors : Reham Z Hamza, Nahla S El-Shenawy, Hayat A A Ismail

Study Type : Animal Study
Additional Links
Substances : Blackberry : CK(120) : AC(64), Quercetin : CK(1864) : AC(847)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Cytoprotective : CK(797) : AC(393), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Natural Substance Synergy : CK(1339) : AC(657)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Caffeic acid supplementation has a protective effect against fluoride induced hepatotoxicity in rats.

Pubmed Data : Biofactors. 2015 Mar-Apr;41(2):90-100. Epub 2015 Apr 2. PMID: **25845575**

Article Published Date : Feb 28, 2015

Authors : Vishnu Vignesh Kanagaraj, Lakshmikanthan Panneerselvam, Vimal Govindarajan, Jaishabanu Ameeramja, Ekambaram Perumal

Study Type : Animal Study
Additional Links
Substances : Caffeic Acid : CK(136) : AC(87), Coffee : CK(1649) : AC(207)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)

Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Chronic exposure to fluoride affects GSH level and NOX4 expression.

Pubmed Data : Biomolecules. 2020 Mar 9 ;10(3). Epub 2020 Mar 9. PMID: **32182821**

Article Published Date : Mar 08, 2020

Authors : Karolina Dec, Agnieszka Łukomska, Karolina Skonieczna-Żydecka, Karolina Jakubczyk, Maciej Tarnowski, Anna Lubkowska, Irena Baranowska-Bosiacka, Daniel Styburski, Marta Skórka-Majewicz, Dominika Maciejewska, Izabela Gutowska

Study Type : Animal Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Combined effect of arsenic and fluoride at environmentally relevant concentrations in zebrafish (Danio rerio) brain.

Pubmed Data : Chemosphere. 2021 Apr ;269:128678. Epub 2020 Oct 21. PMID: **33127104**

Article Published Date : Mar 31, 2021

Authors : Paritosh Mondal, Pallab Shaw, Arpan Dey Bhowmik, Arindam Bandyopadhyay, Muthammal Sudarshan, Anindita Chakraborty, Ansuman Chattopadhyay

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Curcumin attenuates neurotoxicity induced by fluoride: An in vivo evidence.

Pubmed Data : Pharmacogn Mag. 2014 Jan ;10(37):61-5. PMID: **24696547**

Article Published Date : Dec 31, 2013

Authors : Chhavi Sharma, Pooja Suhalka, Piyu Sukhwal, Neha Jaiswal, Maheep Bhatnagar

Study Type : Animal Study
Additional Links
Substances : Curcumin : CK(6902) : AC(3215)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effects of fluoride exposure on mitochondrial function: Energy metabolism, dynamics, biogenesis and mitophagy.

Pubmed Data : Environ Toxicol Pharmacol. 2022 Aug ;94:103916. Epub 2022 Jun 20. PMID: **35738460**

Article Published Date : Jul 31, 2022

Authors : Sabino Hazael Avila-Rojas, Omar Emiliano Aparicio-Trejo, Marco Antonio Sanchez-Guerra, Olivier Christophe Barbier

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fermented rooibos tea ameliorates sodium fluoride-induced cardiorenal toxicity, oxidative stress, and inflammation.

Pubmed Data : Cardiovasc Toxicol. 2024 Feb 5. Epub 2024 Feb 5. PMID: **38315346**

Article Published Date : Feb 04, 2024

Authors : Olawale Razaq Ajuwon, Toyosi Abiodun Adeleke, Basiru Olaitan Ajiboye, Akeem Olalekan Lawal, Ibukun Folorunso, Bartholomew Brai, Fisayo Abraham Bamisaye, John Adeolu Falode, Ikenna Maximillian Odoh, Kabirat Iyabode Adegbite, Oluwasayo Bosede Adegoke

Study Type : Animal Study
Additional Links
Substances : Rooibos : CK(161) : AC(76)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure during pregnancy and lactation triggers oxidative stress and molecular changes in hippocampus of offspring rats.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Jan 15 ;208:111437. Epub 2020 Oct 20. PMID: **33096359**

Article Published Date : Jan 14, 2021

Authors : Maria Karolina Martins Ferreira, Walessa Alana Bragança Aragão, Leonardo Oliveira Bittencourt, Bruna Puty, Aline Dionizio, Michel Platini Caldas de Souza, Marilia Afonso Rabelo Buzalaf, Edivaldo Herculano de Oliveira, Maria Elena Crespo-Lopez, Rafael Rodrigues Lima

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure provokes mitochondria-mediated apoptosis and increases mitophagy in osteocytes.

Pubmed Data : Biol Trace Elem Res. 2023 Aug ;201(8):3994-4007. Epub 2022 Oct 18. PMID: **36255553**

Article Published Date : Jul 31, 2023

Authors : Yun Zhang, Fanhe Dong, Zihan Wang, Bingbing Xu, Tao Zhang, Qiqi Wang, Qiao Lin

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride impairs ovary development by affecting oogenesis and inducing oxidative stress and apoptosis in female zebrafish.

Pubmed Data : Chemosphere. 2020 Oct ;256:127105. Epub 2020 May 17. PMID: **32450357**

Article Published Date : Sep 30, 2020

Authors : Meiyan Li, Jinling Cao, Yangfei Zhao, Panhong Wu, Xuehua Li, Forouzan Khodaei, Yongli Han, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride increases the susceptibility of developmental dysplasia of the

hip.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Apr 1 ;234:113408. Epub 2022 Mar 14. PMID: **35298972**

Article Published Date : Mar 31, 2022

Authors : Weizheng Zhou, Wenting Luo, Dan Liu, Federico Canavese, Lianyong Li, Qun Zhao

Study Type : Animal Study, In Vitro Study

Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hip Dysplasia: Congenital : CK(3) : AC(1), Oxidative Stress : CK(13443) : AC(5499)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induced testicular toxicities in adult Wistar rats.

Pubmed Data : Toxicol Mech Methods. 2021 Jun ;31(5):383-392. Epub 2021 Feb 28. PMID: **33641618**

Article Published Date : May 31, 2021

Authors : Priyankar Pal, Prabir Kumar Mukhopadhyay

Study Type : Animal Study

Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induces oxidative damage and SIRT1/autophagy through ROS-mediated JNK signaling.

Pubmed Data : Free Radic Biol Med. 2015 Dec ;89:369-78. Epub 2015 Sep 30. PMID: **26431905**

Article Published Date : Nov 30, 2015

Authors : Maiko Suzuki, Cheryl Bandoski, John D Bartlett

Study Type : In Vitro Study

Additional Links

Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced apoptosis and gene expression profiling in mice sperm in vivo has been obsered.

Pubmed Data : Arch Toxicol. 2011 Nov ;85(11):1441-52. Epub 2011 Feb 22. PMID: **21340527**

Article Published Date : Nov 01, 2011

Authors : Zilong Sun, Ruiyan Niu, Bin Wang, Zhibin Jiao, Jinming Wang, Jianhai Zhang, Shaolin Wang, Jundong Wang

Study Type : Animal Study

Additional Links

Diseases : Azoospermic : CK(4) : AC(2), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Count: Low : CK(116) : AC(25), Sperm Quality: Low : CK(611) : AC(121)

Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Apoptotic : CK(9052) : AC(7284)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fluoride-induced hepatic and cardio-renal toxicity in a concentration-dependent manner.

Pubmed Data : Biol Trace Elem Res. 2023 Jan ;201(1):229-241. Epub 2022 Jan 12. PMID: **35023047**

Article Published Date : Dec 31, 2022

Authors : Priyanka Sharma, Pawan Kumar Verma, Shilpa Sood, Maninder Singh, Deepika Verma

Study Type : Animal Study

Additional Links

Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced mitochondrial dysfunction.

Pubmed Data : Biol Trace Elem Res. 2024 Mar ;202(3):835-849. Epub 2023 Jun 10. PMID: **37300595**

Article Published Date : Feb 29, 2024

Authors : Sachindra Kumar, Smita Shenoy, Ravindra Shantakumar Swamy, V Ravichandiran, Nitesh Kumar

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Diseases : CK(607) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluorosilicic acid induces DNA damage and oxidative stress in bone marrow mesenchymal stem cells.

Pubmed Data : Mutat Res Genet Toxicol Environ Mutagen. 2021 ;861-862:503297. Epub 2020 Nov 21. PMID: **33551106**

Article Published Date : Dec 31, 2020

Authors : Ana L H Garcia, Juliana Picinini, Maiele D Silveira, Melissa Camassola, Ana P V Visentim, Mirian Salvador, Juliana da Silva

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Focus on cognitive impairment induced by excessive fluoride: An update review.

Pubmed Data : Neuroscience. 2024 Oct 18 ;558:22-29. Epub 2024 Aug 11. PMID: **39137871**

Article Published Date : Oct 18, 2024

Authors : Yuhang Zhang, Yanhui Gao, Xiaona Liu

Study Type : Review
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Mitochondrial Dysfunction : CK(618) : AC(262), Neurotoxicity : CK(49) : AC(27), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Oxidant : CK(646) : AC(246)

Fruits of A. carambola are useful as a dietary supplement in regulation of fluoride induced hyperglycemia, hyperlipemia and oxidative stress.

Pubmed Data : Interdiscip Toxicol. 2014 Jun ;7(2):103-10. Epub 2014 Nov 15. PMID: **26109886**

Article Published Date : May 31, 2014

Authors : Rupal A Vasant, A V R L Narasimhacharya

Study Type : Animal Study
Additional Links
Substances : Star Fruit : CK(17) : AC(5)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hyperglycemia : CK(2107) : AC(692), Hyperlipidemia : CK(2133) : AC(550), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hypoglycemic Agents : CK(8194) : AC(2019), Hypolipidemic : CK(8317) : AC(1985)
Additional Keywords : Supplementation : CK(413) : AC(60)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Gene expression and alterations of antioxidant enzymes in spleen of rats exposed to fluoride.

Pubmed Data : J Trace Elem Med Biol. 2022 Jul ;72:126966. Epub 2022 Mar 9. PMID: **35286942**

Article Published Date : Jun 30, 2022

Authors : A Shashi, Sukanya Thakur

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Grape seed procyanidin extract attenuate sodium fluoride-induced oxidative damage and apoptosis in rat kidneys.

Pubmed Data : Biomed Environ Sci. 2020 Jun 20 ;33(6):454-457. PMID: **32641209**

Article Published Date : Jun 19, 2020

Authors : Er Hui Wang, Zeng Li Yu, Guan Fang Ping, De Sheng Zhai

Study Type : Animal Study
Additional Links
Substances : Grape Seed Extract : CK(1047) : AC(329)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Proanthocyanidins : CK(494) : AC(157)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hesperidin attenuates oxidative stress, inflammation, apoptosis, and cardiac dysfunction in sodium fluoride-induced cardiotoxicity.

Pubmed Data : Cardiovasc Toxicol. 2022 Aug ;22(8):727-735. Epub 2022 May 23. PMID: **35606666**

Article Published Date : Jul 31, 2022

Authors : Behçet Varışlı, Ekrem Darendelioğlu, Cuneyt Caglayan, Fatih Mehmet Kandemir, Adnan Ayna, Aydın Genç, Özge Kandemir

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Bcl-2 protein down-regulation : CK(687) : AC(522), NF-kappaB Inhibitor : CK(5541) : AC(3374), Superoxide Dismutase Up-regulation : CK(2327) : AC(896), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670), Tumor Suppressor Protein p53 Upregulation : CK(748) : AC(549)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hesperidin protects liver and kidney against sodium fluoride-induced toxicity.

Pubmed Data : Life Sci. 2021 Sep 15 ;281:119730. Epub 2021 Jun 17. PMID: **34147482**

Article Published Date : Sep 14, 2021

Authors : Cuneyt Caglayan, Fatih Mehmet Kandemir, Ekrem Darendelioğlu, Sefa Küçükler, Adnan Ayna

Study Type : In Vitro Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Inflammation : CK(15536) : AC(5279), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)

Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High fluoride aggravates cadmium-mediated nephrotoxicity of renal tubular epithelial cells.

Pubmed Data : Sci Total Environ. 2024 Nov 25 ;953:175927. Epub 2024 Sep 3. PMID: **39236818**

Article Published Date : Nov 25, 2024

Authors : Dashuan Li, Chaolian Yang, Lu Sun, Zhenqin Zhao, Jiaqi Liu, Cheng Zhang, Dali Sun, Qinghai Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Nephrotoxic : CK(203) : AC(52)

Luteolin-mediated Kim-1/NF-kB/Nrf2 signaling pathways protects sodium fluoride-induced hypertension and cardiovascular complications.

Pubmed Data : Biofactors. 2018 Nov ;44(6):518-531. Epub 2018 Nov 26. PMID: **30474894**

Article Published Date : Oct 31, 2018

Authors : Ademola Adetokunbo Oyagbemi, Temidayo Olutayo Omobowale, Olufunke Eunice Ola-Davies, Ebunoluwa Racheal Asenuga, Temitayo Olabisi Ajibade, Olumuyiwa Abiola Adejumobi, Jeremiah Moyinoluwa Afolabi, Blessing Seun Ogunpolu, Olufunke Olubunmi Falayi, Adebowale Bernard Saba, Adeolu Alex Adedapo, Momoh Audu Yakubu

Study Type : Animal Study
Additional Links
Substances : Luteolin : CK(707) : AC(390)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypertension : CK(8603) : AC(1329), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antihypertensive Agents : CK(6936) : AC(1007), Malondialdehyde Down-regulation : CK(2826) : AC(965), Nrf2 activation : CK(2908) : AC(1762), Superoxide Dismutase Up-regulation : CK(2327) : AC(896)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Mitigation of honokiol on fluoride-induced mitochondrial oxidative stress, mitochondrial dysfunction, and cognitive deficits.

Pubmed Data : J Hazard Mater. 2022 09 5 ;437:129381. Epub 2022 Jun 16. PMID: **35752048**

Article Published Date : Jan 04, 2022

Authors : Dongmei Wang, Luyang Cao, Xiang Zhou, Gang Wang, Yilu Ma, Xueqin Hao, Hua Fan

Study Type : Animal Study
Additional Links
Substances : Honokiol : CK(435) : AC(271)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Modulation of the Nrf-2 and HO-1 signalling axis is associated with Betaine's abatement of fluoride-induced hepatorenal toxicities in rats.

Pubmed Data : Naunyn Schmiedebergs Arch Pharmacol. 2024 Oct ;397(10):7725-7745. Epub 2024 May 7. PMID: **38713257**

Article Published Date : Sep 30, 2024

Authors : Solomon Owumi, Harieme Agbarogi, Bayode J Oluwawibe, Moses T Otunla, Mayowa M Anifowose, Uche O

Arunsi

Study Type : Animal Study
Additional Links
Substances : Betaine : CK(134) : AC(35)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Heme oxygenase-1 up-regulation : CK(1225) : AC(756), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

N-acetylcysteine alleviates fluoride-induced testicular apoptosis by modulating IRE1α/JNK signaling and nuclear Nrf2 activation.

Pubmed Data : Reprod Toxicol. 2019 03 ;84:98-107. Epub 2019 Jan 8. PMID: **30633982**

Article Published Date : Dec 31, 2018

Authors : Yazhen Hu, Yawei Wang, Ting Yan, Demin Feng, Yue Ba, Huizhen Zhang, Jingyuan Zhu, Xuemin Cheng, Liuxin Cui, Hui Huang

Study Type : Animal Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(1429) : AC(366)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Neuromodulatory effects of hesperidin against sodium fluoride-induced neurotoxicity.

Pubmed Data : Neurotoxicology. 2022 May ;90:197-204. Epub 2022 Apr 10. PMID: **35413380**

Article Published Date : Apr 30, 2022

Authors : Mustafa Onur Yıldız, Hamit Çelik, Cuneyt Caglayan, Fatih Mehmet Kandemir, Cihan Gür, İbrahim Bayav, Aydın Genç, Özge Kandemir

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Anti-Inflammatory Agents : CK(35225) : AC(15297), Interleukin-1 beta downregulation : CK(5277) : AC(2851), Tumor Necrosis Factor (TNF) Alpha Inhibitor : CK(10605) : AC(4670)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Potential role of fluoride in the etiopathogenesis of Alzheimer's disease.

Pubmed Data : Int J Mol Sci. 2018 Dec 9 ;19(12). Epub 2018 Dec 9. PMID: **30544885**

Article Published Date : Dec 08, 2018

Authors : Marta Goschorska, Irena Baranowska-Bosiacka, Izabela Gutowska, Emilia Metryka, Marta Skórka-Majewicz, Dariusz Chlubek

Study Type : Review
Additional Links
Diseases : Alzheimer's Disease : CK(4948) : AC(2148), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Prolonged fluoride exposure alters neurotransmission and oxidative stress in the zebrafish brain.

Pubmed Data : Neurotoxicology. 2022 Mar ;89:92-98. Epub 2022 Jan 20. PMID: **35065950**

Article Published Date : Feb 28, 2022

Authors : Eduardo Ronconi Dondossola, Suzielen Damin Pacheco, Sulingue Casagrande Visentin, Niuany Viel Mendes, Samira Leila Baldin, Henrique Teza Bernardo, Rahisa Scussel, Eduardo Pacheco Rico

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Purple corn anthocyanins protect against fluoride-induced oxidative damage of liver and kidney in rats.

Pubmed Data : Int J Environ Res Public Health. 2014 Jan 13 ;11(1):1020-33. Epub 2014 Jan 13. PMID: **24419046**

Article Published Date : Jan 12, 2014

Authors : Zhuo Zhang, Bo Zhou, Hiaohong Wang, Fei Wang, Yingli Song, Shengnan Liu, Shuhua Xi

Study Type : Animal Study
Additional Links
Substances : Corn: Purple : CK(32) : AC(18)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765), Renoprotective : CK(4133) : AC(1932)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Rutin attenuates neurobehavioral deficits, oxidative stress, neuro-inflammation and apoptosis in fluoride treated rats.

Pubmed Data : Neurosci Lett. 2018 Aug 24 ;682:92-99. Epub 2018 Jun 13. PMID: **29908257**

Article Published Date : Aug 23, 2018

Authors : Kpobari W Nkpaa, Godspower I Onyeso

Study Type : Animal Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Inflammation : CK(15536) : AC(5279), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Sesamin plays an important role in maintaining hepatic health and preventing liver from toxic damage caused by fluoride.

Pubmed Data : Fish Shellfish Immunol. 2020 Nov ;106:715-723. Epub 2020 Aug 26. PMID: **32860904**

Article Published Date : Oct 31, 2020

Authors : Jinling Cao, Cuiping Feng, Lingtian Xie, Lijuan Li, Jianjie Chen, Shaojun Yun, Wenjing Guo, Tianyu Wang, Yijie Wu, Rui Meng, Guodong Wang, Xinjing He, Yongju Luo

Study Type : Animal Study
Additional Links
Substances : Sesamin : CK(207) : AC(94)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Hepatoprotective : CK(8320) : AC(3765)
Problem Substances : Fluoride : CK(1815) : AC(454)

Sodium fluoride activates ERK and JNK via induction of oxidative stress

to promote apoptosis and impairs ovarian function in rats.

Pubmed Data : J Hazard Mater. 2014 May 15 ;272:75-82. Epub 2014 Mar 18. PMID: **24681588**

Article Published Date : May 14, 2014

Authors : Yanqing Geng, Yiwen Qiu, Xueqing Liu, Xuemei Chen, Yubin Ding, Shangjing Liu, Yi Zhao, Rufei Gao, Yingxiong Wang, Junlin He

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride and rotenone may interact synergistically leading to oxidative damage and neuronal cell loss.

Pubmed Data : Neurol Res. 2023 Nov ;45(11):979-987. Epub 2023 Sep 12. PMID: **37699078**

Article Published Date : Oct 31, 2023

Authors : Yilmaz Kocak, Gokhan Oto, Zubeyir Huyut, Hamit Hakan Alp, Fikret Turkan, Ezgi Onay

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Rotenone : CK(57) : AC(32), Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride causes oxidative stress and apoptosis in the mouse liver.

Pubmed Data : Aging (Albany NY). 2017 Jun 27 ;9(6):1623-1639. PMID: **28657544**

Article Published Date : Jun 26, 2017

Authors : Yujiao Lu, Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Sodium fluoride exposure exerts toxic effects on porcine oocyte maturation.

Pubmed Data : Sci Rep. 2017 Dec 6 ;7(1):17082. Epub 2017 Dec 6. PMID: **29213094**

Article Published Date : Dec 05, 2017

Authors : Shuang Liang, Zheng-Wen Nie, Minghui Zhao, Ying-Jie Niu, Kyung-Tae Shin, Xiang-Shun Cui

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Infertility: Female : CK(741) : AC(180), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride exposure may result in increased oxidative stress and increased reaction oxygen species (ROS) production.

Pubmed Data : Toxicol Lett. 2010 Jul 1;196(2):74-9. Epub 2010 Apr 22. PMID: **20399260**

Article Published Date : Jul 01, 2010

Authors : I Gutowska, I Baranowska-Bosiacka, M Baśkiewicz, B Milo, A Siennicka, M Marchlewicz, B Wiszniewska, B Machaliński, E Stachowska

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Atherogenic : CK(25) : AC(5), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Sodium fluoride induces nephrotoxicity via oxidative stress-regulated mitochondrial SIRT3 signaling pathway.

Pubmed Data : Sci Rep. 2017 Apr 6 ;7(1):672. Epub 2017 Apr 6. PMID: **28386112**

Article Published Date : Apr 05, 2017

Authors : Chao Song, Beibei Fu, Jingcheng Zhang, Jiamin Zhao, Mengke Yuan, Wei Peng, Yong Zhang, Haibo Wu

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Renotoxic : CK(56) : AC(20)

Sodium fluoride led to a significant decrease in vitamin A levels in rats exposed to 20ppm.

Pubmed Data : Int J Dev Neurosci. 2015 Sep 18. Epub 2015 Sep 18. PMID: **26390955**

Article Published Date : Sep 17, 2015

Authors : Rajkiran Reddy Reddy Banala, Karnati Pratap Reddy

Study Type : Animal Study
Additional Links
Diseases : Oxidative Stress : CK(13443) : AC(5499), Vitamin A Deficiency : CK(137) : AC(28)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride promotes apoptosis by generation of reactive oxygen species in human lymphocytes.

Pubmed Data : J Toxicol Environ Health A. 2014 ;77(21):1269-80. PMID: **25268553**

Article Published Date : Dec 31, 2013

Authors : Manivannan Jothiramajayam, Sonali Sinha, Manosij Ghosh, Anish Nag, Aditi Jana, Anita Mukherjee

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Genotoxic : CK(545) : AC(184)

Supplementation of ginseng and banaba leaf extracts exhibited protective effects on fluoride toxicated STZ induced nephrotoxicity in mice.

Pubmed Data : Indian J Med Res. 2013 Feb ;137(2):370-9. PMID: **23563382**

Article Published Date : Jan 31, 2013

Authors : Mahaboob P Basha, S M Saumya

Study Type : Animal Study
Additional Links

Substances : Banaba : CK(36) : AC(20), Ginseng : CK(4190) : AC(1902)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Plant Extracts : CK(18030) : AC(6728)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Diabetogenic : CK(340) : AC(58)

Synergistic effects of arsenic and fluoride on oxidative stress and apoptotic pathway in Leydig and Sertoli cells.

Pubmed Data : Toxicology. 2022 Jun 15 ;475:153241. Epub 2022 Jun 14. PMID: **35714946**

Article Published Date : Jun 14, 2022

Authors : Yasemin Aydin, Banu Orta-Yilmaz

Study Type : In Vitro Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Systematic impacts of fluoride exposure on the metabolomics of rats.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Sep 1 ;242:113888. Epub 2022 Jul 21. PMID: **35872488**

Article Published Date : Aug 31, 2022

Authors : Shiyuan Zhao, Jinxiu Guo, Hongjia Xue, Junjun Meng, Dadi Xie, Xi Liu, Qingqing Yu, Haitao Zhong, Pei Jiang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Mitochondrial Dysfunction : CK(618) : AC(262), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The present study reveals that exposure to fluoride in early stages of rat development leads to impairment of memory in young offspring.

Pubmed Data : Int J Toxicol. 2019 ;38(5):405-414. Epub 2019 Jun 20. PMID: **31220985**

Article Published Date : Dec 31, 2018

Authors : Mariana Bartos, Fernanda Gumilar, Cristina E Gallegos, Cristina Bras, Sergio Dominguez, Liliana M Cancela, Alejandra Minetti

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

This study proved that oxidative stress probably play a major role in NaF-induced apoptosis of Sertoli cells.

Pubmed Data : Int J Environ Health Res. 2015 ;25(1):1-9. Epub 2014 Feb 13. PMID: **24521312**

Article Published Date : Dec 31, 2014

Authors : Yang Yang, Hui Huang, Yue Ba, Xue-Min Cheng, Liu-Xin Cui

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Treatment with rutin against sodium fluoride intoxication has a significant role in protecting F-induced cardiotoxicity, blood toxicity and dyslipidemia in rats.

Pubmed Data : Toxicol Mech Methods. 2015 Feb ;25(2):143-9. Epub 2015 Feb 11. PMID: **25560802**

Article Published Date : Jan 31, 2015

Authors : V Umarani, Sudhakar Muvvala, A Ramesh, B V S Lakshmi, N Sravanthi

Study Type : Animal Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Dyslipidemias : CK(1583) : AC(326), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Cardioprotective : CK(8685) : AC(2877), Hypolipidemic : CK(8317) : AC(1985)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Vitamin D may assist the UPR against sodium fluoride-induced damage.

Pubmed Data : J Trace Elem Med Biol. 2023 Dec ;80:127293. Epub 2023 Aug 26. PMID: **37677921**

Article Published Date : Nov 30, 2023

Authors : Veysel Yüksek, Semiha Dede, Sedat Çetin, Ayşe Usta, Mehmet Taşpınar

Study Type : In Vitro Study
Additional Links
Substances : Vitamin D : CK(11555) : AC(1679)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Pancreatic Diseases (AC 1) (CK 20)

Fluoride-Induced Alterations in the Pancreas of Mammals: A Meta-analysis

Pubmed Data : Biol Trace Elem Res. 2024 Aug 20. Epub 2024 Aug 20. PMID: **39162920**

Article Published Date : Aug 20, 2024

Authors : Srishti Rana, Neha Thakur, Ruhi Thakur

Study Type : Meta Analysis
Additional Links
Diseases : Pancreatic Diseases : CK(52) : AC(11)
Problem Substances : Fluoride : CK(1815) : AC(454)

Periodontitis (AC 1) (CK 10)

Green tea showed greater reduction of gingival inflammation and improved periodontal parameters than fluoride-triclosan dentifrice.

Pubmed Data : Int J Dent Hyg. 2015 Feb 17. Epub 2015 Feb 17. PMID: 25690541

Article Published Date : Feb 16, 2015

Authors : Ts Hrishi, Pp Kundapur, A Naha, Bs Thomas, S Kamath, Gs Bhat

Study Type : Human Study
Additional Links
Substances : Green Tea : CK(4441) : AC(1370)
Diseases : Gingivitis : CK(595) : AC(86), Inflammation : CK(15536) : AC(5279), Periodontitis : CK(1081) : AC(266)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Fluoride : CK(1815) : AC(454)

Pineal Gland Calcification (AC 2) (CK 12)

Fluoride deposits in the pineal gland with age and is associated with enhanced gland calcification.

Pubmed Data : Caries Res. 2001 Mar-Apr;35(2):125-8. PMID: 11275672

Article Published Date : Mar 01, 2001

Authors : J Luke

Study Type : Human Study
Additional Links
Diseases : Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376), Pineal Gland Calcification : CK(233) : AC(31), Pineal Gland Diseases : CK(23) : AC(5)
Problem Substances : Fluoride : CK(1815) : AC(454)

These findings demonstrate that a fluoride-free diet encouraged pinealocyte proliferation and pineal gland growth in aged animals.

Pubmed Data : Biol Trace Elem Res. 2020 Sep ;197(1):175-183. Epub 2019 Nov 12. PMID: 31713773

Article Published Date : Aug 31, 2020

Authors : Aaron Mrvelj, Mark D Womble

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(2743) : AC(904)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Pineal Gland Calcification : CK(233) : AC(31)
Problem Substances : Fluoride : CK(1815) : AC(454)

Pineal Gland Diseases (AC 1) (CK 10)

Fluoride deposits in the pineal gland with age and is associated with enhanced gland calcification.

Pubmed Data : Caries Res. 2001 Mar-Apr;35(2):125-8. PMID: 11275672

Article Published Date : Mar 01, 2001

Authors : J Luke

Study Type : Human Study
Additional Links

Diseases : Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376), Pineal Gland Calcification : CK(233) : AC(31), Pineal Gland Diseases : CK(23) : AC(5)
Problem Substances : Fluoride : CK(1815) : AC(454)

Porphyromonas gingivalis (AC 1) (CK 1)

Effect of sodium fluoride on the murine splenic immune response to Porphyromonas gingivalis in vitro.

Pubmed Data : Immunopharmacol Immunotoxicol. 2003 Feb ;25(1):123-7. PMID: **12675204**
Article Published Date : Jan 31, 2003
Authors : Wihaskoro Sosroseno
Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Porphyromonas gingivalis : CK(46) : AC(41)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prenatal Chemical Exposures (AC 27) (CK 116)

Aloe vera protects against fluoride-induced teratogenic effects during pre- and postnatal development in mice.

Pubmed Data : Environ Sci Pollut Res Int. 2022 Sep ;29(42):63577-63587. Epub 2022 Apr 23. PMID: **35460489**
Article Published Date : Aug 31, 2022
Authors : Priyanka Mathur, Shilpa Choudhary, Pradeep Bhatnagar
Study Type : Animal Study
Additional Links
Substances : Aloe Vera : CK(878) : AC(253)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Teratogenic : CK(325) : AC(66)

Co-exposure to arsenic-fluoride results in endoplasmic reticulum stress-induced apoptosis through the PERK signaling pathway in the liver of offspring rats.

Pubmed Data : Biol Trace Elem Res. 2020 Sep ;197(1):192-201. Epub 2019 Nov 25. PMID: **31768761**
Article Published Date : Aug 31, 2020
Authors : Nisha Dong, Jing Feng, Jiaxin Xie, Xiaolin Tian, Meng Li, Penghui Liu, Yannan Zhao, Cailing Wei, Yi Gao, Ben Li, Yulan Qiu, Xiaoyan Yan
Study Type : Animal Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)

Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Cognitive alterations in children born from exposed mothers to F could start in early prenatal stages of life.

Pubmed Data : Neurotoxicology. 2017 Mar ;59:65-70. Epub 2017 Jan 8. PMID: **28077305**

Article Published Date : Feb 28, 2017

Authors : L Valdez Jiménez, O D López Guzmán, M Cervantes Flores, R Costilla-Salazar, J Calderón Hernández, Y Alcaraz Contreras, D O Rocha-Amador

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Developmental fluoride neurotoxicity: an updated review.

Pubmed Data : Environ Health. 2019 Dec 19 ;18(1):110. Epub 2019 Dec 19. PMID: **31856837**

Article Published Date : Dec 18, 2019

Authors : Philippe Grandjean

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Domain-specific effects of prenatal fluoride exposure on child IQ at 4, 5, and 6-12 years.

Pubmed Data : Environ Res. 2022 Aug ;211:112993. Epub 2022 Mar 9. PMID: **35276192**

Article Published Date : Jul 31, 2022

Authors : Carly V Goodman, Morteza Bashash, Rivka Green, Peter Song, Karen E Peterson, Lourdes Schnaas, Adriana Mercado-García, Sandra Martínez-Medina, Mauricio Hernández-Avila, Angeles Martinez-Mier, Martha M Téllez-Rojo, Howard Hu, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodevelopmental Disorders : CK(470) : AC(85), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Effects of neuron autophagy induced by arsenic and fluoride on spatial learning and memory in offspring rats.

Pubmed Data : Chemosphere. 2022 Dec ;308(Pt 2):136341. Epub 2022 Sep 7. PMID: **36087721**

Article Published Date : Nov 30, 2022

Authors : Qiuyi Zhao, Weizhe Pan, Jia Li, Shengnan Yu, Yan Liu, Xiaoli Zhang, Ruodi Qu, Qian Zhang, Ben Li, Xiaoyan Yan, Xuefeng Ren, Yulan Qiu

Study Type : Animal Study
Additional Links
Diseases : Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to fluoride in the prenatal and neonatal period result in the increase in COX2 activity and increase in PGE2 concentration in rats

brain.

Pubmed Data : Neurotoxicology. 2019 Sep ;74:81-90. Epub 2019 Jun 5. PMID: **31175943**

Article Published Date : Aug 31, 2019

Authors : Karolina Dec, Agnieszka Łukomska, Karolina Skonieczna-Żydecka, Agnieszka Kolasa-Wołosiuk, Maciej Tarnowski, Irena Baranowska-Bosiacka, Izabela Gutowska

Study Type : Animal Study
Additional Links
Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Fluoride exposure during development affects both cognition and emotion in mice.

Pubmed Data : Physiol Behav. 2014 Jan 30 ;124:1-7. Epub 2013 Oct 30. PMID: **24184405**

Article Published Date : Jan 29, 2014

Authors : Fei Liu, Jing Ma, Hui Zhang, Peng Liu, You-Ping Liu, Bo Xing, Yong-Hui Dang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure during pregnancy and lactation triggers oxidative stress and molecular changes in hippocampus of offspring rats.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Jan 15 ;208:111437. Epub 2020 Oct 20. PMID: **33096359**

Article Published Date : Jan 14, 2021

Authors : Maria Karolina Martins Ferreira, Walessa Alana Bragança Aragão, Leonardo Oliveira Bittencourt, Bruna Puty, Aline Dionizio, Michel Platini Caldas de Souza, Marilia Afonso Rabelo Buzalaf, Edivaldo Herculano de Oliveira, Maria Elena Crespo-Lopez, Rafael Rodrigues Lima

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure in early life as the possible root cause of disease in later life.

Pubmed Data : J Clin Pediatr Dent. 2018 ;42(5):325-330. Epub 2018 May 15. PMID: **29763350**

Article Published Date : Dec 31, 2017

Authors : Tetsuo Nakamoto, H Ralph Rawls

Study Type : Review
Additional Links
Diseases : Fetal Origin of Adult Disease : CK(249) : AC(62), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Fluoride : CK(1815) : AC(454)

Fluoride exposure was associated with alterations in maternal thyroid hormone levels.

Pubmed Data : Environ Int. 2024 Jan 12 ;184:108442. Epub 2024 Jan 12. PMID: **38237505**

Article Published Date : Jan 11, 2024

Authors : Meaghan Hall, Rick Hornung, Jonathan Chevrier, Pierre Ayotte, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride in drinking water was associated with reduced visual acuity and alterations in cardiac autonomic function in infancy.

Pubmed Data : Environ Int. 2024 Jan ;183:108336. Epub 2023 Nov 27. PMID: **38064923**

Article Published Date : Dec 31, 2023

Authors : John E Krzeczkowski, Meaghan Hall, Dave Saint-Amour, Youssef Oulhote, Taylor McGuckin, Carly V Goodman, Rivka Green, Gina Muckle, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Gestational exposure to fluoride impairs cognition in C57 BL/6 J male offspring mice.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Jul 1 ;239:113682. Epub 2022 May 25. PMID: **35643027**

Article Published Date : Jun 30, 2022

Authors : Weisheng Li, Likui Lu, Dan Zhu, Jingliu Liu, Yajun Shi, Hongtao Zeng, Xi Yu, Jun Guo, Bin Wei, Yongle Cai, Miao Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

High fluoride exposure has multigenerational and cumulative adverse effects on thyroid status, brain health and learning memory in rats.

Pubmed Data : Biol Trace Elem Res. 2011 Jul 14. Epub 2011 Jul 14. PMID: **21755305**

Article Published Date : Jul 14, 2011

Authors : Piler Mahaboob Basha, Puja Rai, Shabana Begum

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148), Prenatal Chemical Exposures : CK(2428) : AC(530), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Impairment of learning and memory in mouse offspring induced by perinatal fluoride exposure may partly result from the enhanced miR-124 and miR-132.

Pubmed Data : Chemosphere. 2018 Jan 8 ;197:117-122. Epub 2018 Jan 8. PMID: **29334651**

Article Published Date : Jan 07, 2018

Authors : Jixiang Wang, Yuliang Zhang, Zhenzhen Guo, Rui Li, Xingchen Xue, Zilong Sun, Ruiyan Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Low levels of selenium, fluoride and arsenic are toxic to rat embryos.

Pubmed Data : Wei Sheng Yan Jiu. 1999 Mar 30;28(2):74-6. PMID: **11939006**

Article Published Date : Mar 30, 1999

Authors : Y Li, M Sun, D Wu, X Chen

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(267) : AC(52), Prenatal Chemical Exposures : CK(2428) : AC(530)
Additional Keywords : Drug Synergy : CK(389) : AC(174)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454), Sodium Selenate : CK(11) : AC(8), Sodium Selenite : CK(23) : AC(16)
Adverse Pharmacological Actions : Teratogenic : CK(325) : AC(66)

Maternal exposure to drinking water throughout pregnancy fluoridated at the level of 0.7 mg/L was associated with poorer inhibitory control and cognitive flexibility.

Pubmed Data : Sci Total Environ. 2023 Sep 15 ;891:164322. Epub 2023 May 25. PMID: **37236475**

Article Published Date : Sep 14, 2023

Authors : Deborah Dewey, Gillian England-Mason, Henry Ntanda, Andrea J Deane, Mandakini Jain, Nadia Barnieh, Gerald F Giesbrecht, Nicole Letourneau,

Study Type : Human Study
Additional Links
Diseases : Developmental Disorder: Children : CK(148) : AC(19), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Maternal exposure to higher levels of fluoride during pregnancy was associated with lower IQ scores in children aged 3 to 4 years.

Pubmed Data : JAMA Pediatr. 2019 Oct 1 ;173(10):940-948. PMID: **31424532**

Article Published Date : Sep 30, 2019

Authors : Rivka Green, Bruce Lanphear, Richard Hornung, David Flora, E Angeles Martinez-Mier, Raichel Neufeld, Pierre Ayotte, Gina Muckle, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Maternal fluoride exposure during gestation and lactation decreased learning and memory ability of mouse pups.

Pubmed Data : Hum Exp Toxicol. 2018 Jan ;37(1):87-93. Epub 2017 Feb 13. PMID: **29187078**

Article Published Date : Dec 31, 2017

Authors : Z Sun, Y Zhang, X Xue, R Niu, J Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prenatal fluoride exposure and attention deficit hyperactivity disorder

(ADHD) symptoms in children.

Pubmed Data : Environ Int. 2018 Dec ;121(Pt 1):658-666. Epub 2018 Oct 10. PMID: **30316181**

Article Published Date : Nov 30, 2018

Authors : Morteza Bashash, Maelle Marchand, Howard Hu, Christine Till, E Angeles Martinez-Mier, Brisa N Sanchez, Niladri Basu, Karen E Peterson, Rivka Green, Lourdes Schnaas, Adriana Mercado-García, Mauricio Hernández-Avila, Martha María Téllez-Rojo

Study Type : Human Study
Additional Links
Diseases : Attention Deficit Disorder with Hyperactivity : CK(633) : AC(84), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Prenatal fluoride exposure and cognitive outcomes in children at 4 and 6-12 years of age in Mexico.

Pubmed Data : Environ Health Perspect. 2017 Sep 19 ;125(9):097017. Epub 2017 Sep 19. PMID: **28937959**

Article Published Date : Sep 18, 2017

Authors : Morteza Bashash, Deena Thomas, Howard Hu, E Angeles Martinez-Mier, Brisa N Sanchez, Niladri Basu, Karen E Peterson, Adrienne S Ettinger, Robert Wright, Zhenzhen Zhang, Yun Liu, Lourdes Schnaas, Adriana Mercado-García, Martha María Téllez-Rojo, Mauricio Hernández-Avila

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Protective effect of curcumin on hippocampal and behaviour changes in rats exposed to fluoride during pre- and post-natal period.

Pubmed Data : Basic Clin Neurosci. 2020 May-Jun;11(3):289-299. Epub 2020 May 1. PMID: **32963722**

Article Published Date : Apr 30, 2020

Authors : Nagapuri Kiran Kumar, Mesram Nageshwar, Karnati Pratap Reddy

Study Type : Animal Study
Additional Links
Substances : Curcumin : CK(6902) : AC(3215)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium flouride exposure during pregnancy may interfere with normal development and increase the risk of neurological and psychiatric disorders in adulthood.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2010 Jun;14(6):507-12. PMID: **20712257**

Article Published Date : Jun 01, 2010

Authors : P Flace, V Benagiano, D Vermesan, R Sabatini, A M Inchingolo, A Inchingolo, P Auteri, G Ambrosi, A Tarullo, R Cagiano

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Huntington Disease : CK(222) : AC(103), Obsessive-Compulsive Disorder : CK(421) : AC(77), Prenatal Chemical Exposures : CK(2428) : AC(530), Schizophrenia : CK(1080) : AC(191), Tourette Syndrome : CK(207) : AC(30)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Teratogenic : CK(325) : AC(66)

Sodium fluoride during gestation and lactation affects male reproduction in adult rats by decreasing spermatogenesis and steroidogenesis.

Pubmed Data : Naturwissenschaften. 2007 Jul;94(7):607-11. Epub 2007 Feb 22. PMID: **17318612**

Article Published Date : Jul 01, 2007

Authors : P Sreedhar Reddy, T Pushpalatha, P Sreenivasula Reddy

Study Type : Animal Study
Additional Links
Diseases : Breastfeeding Concerns: Chemical Exposure : CK(123) : AC(19), Hormone Insufficency : CK(30) : AC(8), Infertility: Male : CK(1668) : AC(424), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

Sodium fluoride during gestation and lactation increased mandibular area and bone volume of pups.

Pubmed Data : Biol Trace Elem Res. 2018 Feb 6. Epub 2018 Feb 6. PMID: **29411324**

Article Published Date : Feb 05, 2018

Authors : Victoria Interlandi, Pablo A Fontanetti, Rubén H Ponce, Raquel V Gallará, Viviana A Centeno

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride suppresses spleen development through MAPK/ERK signaling pathway in mice.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Aug ;241:113764. Epub 2022 Jun 13. PMID: **35709673**

Article Published Date : Jul 31, 2022

Authors : Ping Kuang, Hengmin Cui, Li Yu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

The present study reveals that exposure to fluoride in early stages of rat development leads to impairment of memory in young offspring.

Pubmed Data : Int J Toxicol. 2019 ;38(5):405-414. Epub 2019 Jun 20. PMID: **31220985**

Article Published Date : Dec 31, 2018

Authors : Mariana Bartos, Fernanda Gumilar, Cristina E Gallegos, Cristina Bras, Sergio Dominguez, Liliana M Cancela, Alejandra Minetti

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Prenatal Nutrition: Learning/Intelligence of Offspring (AC 4) (CK 44)

Children who live in a fluorosis area have 5 times higher odds of developing low IQ than those who live in a nonfluorosis area or a slight fluorosis area.

Pubmed Data : Biol Trace Elem Res. 2008;126(1-3):115-20. Epub 2008 Aug 10. PMID: **18695947**

Article Published Date : Jan 01, 2008

Authors : Qin-Qing Tang, Jun Du, Heng-Hui Ma, Shao-Jun Jiang, Xiao-Jun Zhou

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to high levels of fluoride may adversely influence children's intelligence development.

Pubmed Data : Zhongguo Dang Dai Er Ke Za Zhi. 2008 Dec;10(6):723-5. PMID: **19102839**

Article Published Date : Dec 01, 2008

Authors : Ming Liu, Cong Qian

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

High fluoride exposure has multigenerational and cumulative adverse effects on thyroid status, brain health and learning memory in rats.

Pubmed Data : Biol Trace Elem Res. 2011 Jul 14. Epub 2011 Jul 14. PMID: **21755305**

Article Published Date : Jul 14, 2011

Authors : Piler Mahaboob Basha, Puja Rai, Shabana Begum

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148), Prenatal Chemical Exposures : CK(2428) : AC(530), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Rats exposed to low iodine and high fluoride exhibit changes in brain proteins that may be associated with neurotoxicity.

Pubmed Data : Arch Toxicol. 2010 Apr 3. Epub 2010 Apr 3. PMID: **20364248**

Article Published Date : Apr 03, 2010

Authors : Yaming Ge, Ruiyan Niu, Jianhai Zhang, Jundong Wang

Study Type : Animal Study

Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Schizophrenia (AC 1) (CK 2)

Sodium flouride exposure during pregnancy may interfere with normal development and increase the risk of neurological and psychiatric disorders in adulthood.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2010 Jun;14(6):507-12. PMID: **20712257**

Article Published Date : Jun 01, 2010

Authors : P Flace, V Benagiano, D Vermesan, R Sabatini, A M Inchingolo, A Inchingolo, P Auteri, G Ambrosi, A Tarullo, R Cagiano

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Huntington Disease : CK(222) : AC(103), Obsessive-Compulsive Disorder : CK(421) : AC(77), Prenatal Chemical Exposures : CK(2428) : AC(530), Schizophrenia : CK(1080) : AC(191), Tourette Syndrome : CK(207) : AC(30)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Teratogenic : CK(325) : AC(66)

Sleep Disorders (AC 2) (CK 20)

Fluoride exposure may contribute to changes in sleep cycle regulation and sleep behaviors among older adolescents in the US.

Pubmed Data : Environ Health. 2019 Dec 9 ;18(1):106. Epub 2019 Dec 9. PMID: **31818308**

Article Published Date : Dec 08, 2019

Authors : Ashley J Malin, Sonali Bose, Stefanie A Busgang, Chris Gennings, Michael Thorpy, Robert O Wright, Rosalind J Wright, Manish Arora

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sleep Disorders : CK(1811) : AC(256)
Problem Substances : Fluoride : CK(1815) : AC(454)

Fluoride exposure may contribute to sleeping less than the recommended duration among older adolescents and adults in Canada.

Pubmed Data : Environ Health. 2021 Feb 18 ;20(1):16. Epub 2021 Feb 18. PMID: **33602214**

Article Published Date : Feb 17, 2021

Authors : Jasmyn E A Cunningham, Hugh McCague, Ashley J Malin, David Flora, Christine Till

Study Type : Human Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sleep Disorders : CK(1811) : AC(256)
Problem Substances : Fluoride : CK(1815) : AC(454)

Sperm Count: Low (AC 1) (CK 2)

Fluoride-induced apoptosis and gene expression profiling in mice sperm in vivo has been obsered.

Pubmed Data : Arch Toxicol. 2011 Nov ;85(11):1441-52. Epub 2011 Feb 22. PMID: 21340527

Article Published Date : Nov 01, 2011

Authors : Zilong Sun, Ruiyan Niu, Bin Wang, Zhibin Jiao, Jinming Wang, Jianhai Zhang, Shaolin Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Azoospermic : CK(4) : AC(2), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Count: Low : CK(116) : AC(25), Sperm Quality: Low : CK(611) : AC(121)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sperm Quality: Low (AC 12) (CK 22)

"Decreased in vitro fertility in male rats exposed to fluoride-induced oxidative stress damage and mitochondrial transmembrane potential loss."

Pubmed Data : Toxicol Appl Pharmacol. 2008 Aug 1 ;230(3):352-7. Epub 2008 Mar 28. PMID: 18455746

Article Published Date : Aug 01, 2008

Authors : Jeannett A Izquierdo-Vega, Manuel Sánchez-Gutiérrez, Luz María Del Razo

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21), Oxidant : CK(646) : AC(246)

Ameliorative effects of nano Moringa on fluoride-induced testicular damage via down regulation of the StAR gene and altered steroid hormones.

Pubmed Data : Reprod Biol. 2022 Dec 21 ;23(1):100724. Epub 2022 Dec 21. PMID: 36563520

Article Published Date : Dec 21, 2022

Authors : Entsar R Abd-Allah, Heba Ali Abd El-Rahman

Study Type : Animal Study
Additional Links
Substances : Moringa oleifera : CK(748) : AC(377)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Low Testosterone : CK(852) : AC(140), Sperm Quality: Low : CK(611) :

AC(121)
Problem Substances : Fluoride : CK(1815) : AC(454)

Dose and time-dependent effects of sodium fluoride on sperm motility.

Pubmed Data : Toxicol Ind Health. 2018 Dec ;34(12):813-818. Epub 2018 Oct 25. PMID: **30360691**

Article Published Date : Nov 30, 2018

Authors : Basavalingappa Chaithra, Halugudde Nagaraja Sarjan, Shivabasavaiah

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure alters the ultra-structure of sperm flagellum via reducing key protein expressions in testis.

Pubmed Data : Chemosphere. 2020 May ;246:125772. Epub 2019 Dec 30. PMID: **31901658**

Article Published Date : Apr 30, 2020

Authors : Chen Liang, Yuyang He, Yu Liu, Yan Gao, Yongli Han, Xiang Li, Yangfei Zhao, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sperm Quality: Low : CK(611) : AC(121), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride-induced apoptosis and gene expression profiling in mice sperm in vivo has been obsered.

Pubmed Data : Arch Toxicol. 2011 Nov ;85(11):1441-52. Epub 2011 Feb 22. PMID: **21340527**

Article Published Date : Nov 01, 2011

Authors : Zilong Sun, Ruiyan Niu, Bin Wang, Zhibin Jiao, Jinming Wang, Jianhai Zhang, Shaolin Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Azoospermic : CK(4) : AC(2), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Count: Low : CK(116) : AC(25), Sperm Quality: Low : CK(611) : AC(121)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fluoride-induced sperm damage and HuR-mediated excessive apoptosis and autophagy in spermatocytes.

Pubmed Data : Biol Trace Elem Res. 2023 Jan ;201(1):295-305. Epub 2022 Feb 28. PMID: **35226278**

Article Published Date : Dec 31, 2022

Authors : Yanyan Li, Jianbin Zhang, Linlin Sun, Hongyu Zhao, Xiaohan Jia, Yingri Zhang, Yuanbin Li

Study Type : In Vitro Study
Additional Links
Diseases : Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Microdose vasal injection of sodium fluoride in the rat interferes with fertlity.

Pubmed Data : Reprod Toxicol. 1991 ;5(6):505-12. PMID: **1839778**

Article Published Date : Jan 01, 1991

Authors : N J Chinoy, M V Rao, M V Narayana, E Neelakanta

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride administrated in drinking water of 2, 4, and 6 ppm concentration for 6 months to male rats adversely affected their fertility and reproductive system.

Pubmed Data : Toxicol Ind Health. 2007 Oct;23(9):507-13. PMID: **18681235**

Article Published Date : Oct 01, 2007

Authors : R S Gupta, T I Khan, D Agrawal, J B S Kachhawa

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride affected male reproduction by disturbing blood-testis barrier in mice.

Pubmed Data : Food Chem Toxicol. 2016 May 27 ;94:103-111. Epub 2016 May 27. PMID: **27237588**

Article Published Date : May 26, 2016

Authors : Jianhai Zhang, Zhihui Li, Mingli Qie, Ruibo Zheng, Jagathpala Shetty, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride and fluoride contaminated ground water induced altered reproductive performances in male rats.

Pubmed Data : Biol Trace Elem Res. 2020 Jun ;195(2):544-550. Epub 2019 Aug 28. PMID: **31463763**

Article Published Date : May 31, 2020

Authors : B Chaithra, H N Sarjan, Shivabasavaiah

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride exposure changed histological structure and ultrastructure of hypothalamus–pituitary–testicular axis and significantly increased the malformation ratio of sperm.

Pubmed Data : Chemosphere. 2015 Sep ;135:297-303. Epub 2015 May 15. PMID: **25966048**

Article Published Date : Aug 31, 2015

Authors : Haijun Han, Zilong Sun, Guangying Luo, Chong Wang, Ruifen Wei, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

This indicated that along with low sperm quality, sperm mtDNA copy number is also a sensitive biomarker to reflect the sperm toxicity of fluoride.

Pubmed Data : Biochem Biophys Res Commun. 2017 10 21 ;492(3):295-299. Epub 2017 Aug 31. PMID: 28864413

Article Published Date : Jan 20, 2017

Authors : Zilong Sun, Xingchen Xue, Yuliang Zhang, Ruiyan Niu, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Spleen Damage: Chemically Induced (AC 9) (CK 18)

Fluoride can suppress the activation of p38MAPK pathway in mice spleen lymphocytes and further influences the function of the immune system.

Pubmed Data : Biol Trace Elem Res. 2016 Oct ;173(2):333-8. Epub 2016 Feb 23. PMID: 26906276

Article Published Date : Sep 30, 2016

Authors : Zeyu Shi, Yaqi Zhan, Junxing Zhao, Jinming Wang, Haili Ma

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Fluoride induces immunotoxicity by regulating riboflavin transport and metabolism partly through IL-17A in the spleen.

Pubmed Data : J Hazard Mater. 2024 Sep 5 ;476:135085. Epub 2024 Jul 2. PMID: 38968825

Article Published Date : Sep 05, 2024

Authors : Yurou Qiao, Yukun Cui, Yanjia Tan, Cuicui Zhuang, Xiang Li, Yufei Yong, Xinying Zhang, Xuting Ren, Miaomiao Cai, Jie Yang, Yilin Lang, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Drug-Induced Nutrient Depletion: Riboflavin (B-2) : CK(2) : AC(1), Low Immune Function: Chemically-Induced : CK(4) : AC(2), Mitochondrial Dysfunction : CK(618) : AC(262), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Gene expression and alterations of antioxidant enzymes in spleen of rats exposed to fluoride.

Pubmed Data : J Trace Elem Med Biol. 2022 Jul ;72:126966. Epub 2022 Mar 9. PMID: 35286942

Article Published Date : Jun 30, 2022

Authors : A Shashi, Sukanya Thakur

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Genotoxicity of fluoride subacute exposure in rats and selenium intervention.

Pubmed Data : Chemosphere. 2021 Mar ;266:128978. Epub 2020 Nov 17. PMID: **33298328**

Article Published Date : Feb 28, 2021

Authors : Jelena Radovanović, Biljana Antonijević, Stoimir Kolarević, Sanja Milutinović-Smiljanić, Jelena Mandić, Branka Vuković-Gačić, Zorica Bulat, Marijana Ćurčić, Margareta Kračun-Kolarević, Karolina Sunjog, Jovana Kostić-Vuković, Jovana Jovanović Marić, Evica Antonijević-Miljaković, Danijela Đukić-Ćosić, Aleksandra Buha Djordjevic, Dragana Javorac, Katarina Baralić, Zoran Mandinić

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Pharmacological Actions : Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Neurotoxic : CK(2838) : AC(702)

Sodium fluoride (NaF) causes toxic effects on splenic development in mice.

Pubmed Data : Oncotarget. 2017 Jan 17 ;8(3):4703-4717. PMID: **28002795**

Article Published Date : Jan 16, 2017

Authors : Ping Kuang, Huidan Deng, Hengmin Cui, Lian Chen, Jing Fang, Zhicai Zuo, Junliang Deng, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride impairs splenic innate immunity via inactivation of TLR2/MyD88 signaling pathway in mice.

Pubmed Data : Chemosphere. 2019 Dec ;237:124437. Epub 2019 Jul 23. PMID: **31356994**

Article Published Date : Nov 30, 2019

Authors : Ping Kuang, Hongrui Guo, Huidan Deng, Hengmin Cui, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Sodium fluoride induces the splenic apoptosis.

Pubmed Data : Aging (Albany NY). 2016 Dec 27 ;8(12):3552-3567. PMID: **28039491**

Article Published Date : Dec 26, 2016

Authors : Huidan Deng, Ping Kuang, Hengmin Cui, Lian Chen, Qin Luo, Jing Fang, Zhicai Zuo, Junliang Deng, Xun Wang, Ling Zhao

Study Type : Animal Study, In Vitro Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Sodium fluoride suppresses spleen development through MAPK/ERK signaling pathway in mice.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Aug ;241:113764. Epub 2022 Jun 13. PMID: **35709673**

Article Published Date : Jul 31, 2022

Authors : Ping Kuang, Hengmin Cui, Li Yu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Suppressive effects of sodium fluoride on cultured splenic lymphocyte proliferation in mice.

Pubmed Data : Oncotarget. 2016 Sep 20 ;7(38):61905-61915. PMID: **27542206**

Article Published Date : Sep 19, 2016

Authors : Ping Kuang, Huidan Deng, Hengmin Cui, Lian Chen, Hongrui Guo, Jing Fang, Zhicai Zuo, Junliang Deng, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Steptococcus Mutans Infections (AC 1) (CK 1)

Theobromine though nonfluoridated toothpaste showed greater zones of inhibition than other commercially available fluoridated kid's toothpastes.

Pubmed Data : Dent Res J (Isfahan). 2019 Mar-Apr;16(2):76-80. PMID: **30820200**

Article Published Date : Feb 28, 2019

Authors : Arthi Lakshmi, C Vishnurekha, Parisa Norouzi Baghkomeh

Study Type : In Vitro Study
Additional Links
Substances : Cocoa : CK(1608) : AC(214)
Diseases : Enterococcus Infections : CK(76) : AC(62), Steptococcus Mutans Infections : CK(467) : AC(157)
Pharmacological Actions : Antimicrobial : CK(1531) : AC(781)
Additional Keywords : Superiority of Natural Substances versus Drugs : CK(1855) : AC(392)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Stroke (AC 1) (CK 10)

Long-term excessive fluoride exposure from drinking water may increase the risk of stroke prevalence, indicating fluoride overexposure as a potential risk factor for stroke.

Pubmed Data : Toxics. 2024 Sep 18 ;12(9). Epub 2024 Sep 18. PMID: **39330607**

Article Published Date : Sep 18, 2024

Authors : Lin Yuan, Hongna Sun, Yue Li, Zhifeng Xing, Shihui Yin, Fengyu Xie, Jing Zhou, Shuang Li, Liaowei Wu, Wei Huang, Teng Wang, Yanhui Gao, Lijun Zhao, Dianjun Sun

Study Type : Human Study
Additional Links
Diseases : Stroke : CK(4172) : AC(718)
Problem Substances : Fluoride : CK(1815) : AC(454)

TSH: Elevated (AC 1) (CK 10)

High iodine and high fluorine adversely effects the intelligence and health of children.

Pubmed Data : Zhonghua Liu Xing Bing Xue Za Zhi. 1994 Oct;15(5):296-8. PMID: **7859263**

Article Published Date : Oct 01, 1994

Authors : Y Yang, X Wang, X Guo

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), TSH: Elevated : CK(20) : AC(2)
Problem Substances : Fluoride : CK(1815) : AC(454), Iodine: Excess : CK(10) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Testicular Injury: Chemical/Metal Induced (AC 17) (CK 33)

Abnormal spermatogenesis following sodium fluoride exposure is associated with the downregulation of CREM and ACT in the mouse testis.

Pubmed Data : Toxicol Ind Health. 2018 Apr ;34(4):219-227. Epub 2018 Mar 12. PMID: **29529942**

Article Published Date : Mar 31, 2018

Authors : Chong Wang, Yan Chen, Ram Kumar Manthari, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Cell cycle arrest and gene expression profiling of testis in mice exposed to fluoride.

Pubmed Data : Environ Toxicol. 2017 May ;32(5):1558-1565. Epub 2016 Nov 14. PMID: **27862939**

Article Published Date : Apr 30, 2017

Authors : Kai Su, Zilong Sun, Ruiyan Niu, Ying Lei, Jing Cheng, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)

Effects of fluoride on PIWI-interacting RNA expression profiling in testis of mice.

Pubmed Data : Chemosphere. 2021 Apr ;269:128727. Epub 2020 Oct 24. PMID: **33213873**

Article Published Date : Mar 31, 2021

Authors : Yanyan Li, Min Cheng, Yangfei Zhao, Jinming Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Exposure of fluoride with streptozotocin-induced diabetes aggravates testicular damage and spermatozoa parameters in mice.

Pubmed Data : J Toxicol. 2019 ;2019:5269380. Epub 2019 Dec 3. PMID: **31885555**

Article Published Date : Dec 31, 2018

Authors : Manuel Sánchez-Gutiérrez, Evelia Martínez-Loredo, Eduardo Osiris Madrigal-Santillán, Gabriel Betanzos-Cabrera, Araceli Hernández-Zavala, María Angélica Mojica-Villegas, Jeannett Alejandra Izquierdo-Vega

Study Type : Animal Study
Additional Links
Diseases : Diabetic Complications : CK(4283) : AC(1544), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure alters the ultra-structure of sperm flagellum via reducing key protein expressions in testis.

Pubmed Data : Chemosphere. 2020 May ;246:125772. Epub 2019 Dec 30. PMID: **31901658**

Article Published Date : Apr 30, 2020

Authors : Chen Liang, Yuyang He, Yu Liu, Yan Gao, Yongli Han, Xiang Li, Yangfei Zhao, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Sperm Quality: Low : CK(611) : AC(121), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure arrests the acrosome formation during spermatogenesis.

Pubmed Data : Chemosphere. 2019 Jul ;226:874-882. Epub 2019 Apr 5. PMID: **31509916**

Article Published Date : Jun 30, 2019

Authors : Shanshan Jiang, Chen Liang, Yan Gao, Yu Liu, Yongli Han, Jundong Wang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure changed the structure and the expressions of Y chromosome related genes in testes.

Pubmed Data : Chemosphere. 2016 Oct ;161:292-299. Epub 2016 Jul 18. PMID: **27441988**

Article Published Date : Sep 30, 2016

Authors : Jinling Cao, Yan Chen, Jianjie Chen, Hanghang Yan, Meiyan Li, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induced testicular toxicities in adult Wistar rats.

Pubmed Data : Toxicol Mech Methods. 2021 Jun ;31(5):383-392. Epub 2021 Feb 28. PMID: **33641618**

Article Published Date : May 31, 2021

Authors : Priyankar Pal, Prabir Kumar Mukhopadhyay

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride induces pyroptosis via IL-17A-mediated caspase-1/11-dependent pathways and Bifidobacterium intervention in testis.

Pubmed Data : Sci Total Environ. 2024 May 20 ;926:172036. Epub 2024 Mar 28. PMID: **38554964**

Article Published Date : May 19, 2024

Authors : Ao Cheng, Huifeng Luo, Bingchao Fan, Qing Xiang, Zhaochen Nie, Shuang Feng, Yurou Qiao, Yue Wu, Qianlong Zhu, Rongxiu Liu, Xiaochao Song, Xiang Li, Jianhai Zhang

Study Type : Animal Study
Additional Links
Substances : Bifidobacterium : CK(1540) : AC(254)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Interleukin-17 downregulation : CK(484) : AC(187)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Ginseng and banaba leaf extracts could protect against fluoride induced testicular damage.

Pubmed Data : Biol Trace Elem Res. 2017 Jun ;177(2):331-344. Epub 2016 Nov 16. PMID: **27854046**

Article Published Date : May 31, 2017

Authors : Saumya Sm, P Mahaboob Basha

Study Type : Animal Study
Additional Links
Substances : Banaba : CK(36) : AC(20), Ginseng : CK(4190) : AC(1902)
Diseases : Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Cytoprotective : CK(797) : AC(393)
Additional Keywords : Plant Extracts : CK(18030) : AC(6728)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Hesperidin/chitosan nanogel mitigates apoptosis and endoplasmic reticulum stress in fluoride and aluminum-induced testicular injury.

Pubmed Data : Biol Trace Elem Res. 2023 Dec 13. Epub 2023 Dec 13. PMID: **38087036**

Article Published Date : Dec 12, 2023

Authors : Nora S Deiab, Ahmad S Kodous, Mohamed K Mahfouz, Alshaimaa M Said, Mohamed Mohamady Ghobashy, Omayma A R Abozaid

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Aluminum Toxicity : CK(685) : AC(308), Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)

Melatonin ameliorated sodium fluoride-induced testicular metabolic stress.

Pubmed Data : Biol Trace Elem Res. 2019 Dec 11. Epub 2019 Dec 11. PMID: **31828722**

Article Published Date : Dec 10, 2019

Authors : Jitendra Kumar, Chandana Haldar, Rakesh Verma

Study Type : Animal Study
Additional Links
Substances : Melatonin : CK(2743) : AC(904)
Diseases : Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Antioxidants : CK(32218) : AC(14161), Cyclooxygenase 2 Inhibitors : CK(2067) : AC(1279), Heme oxygenase-1 up-regulation : CK(1225) : AC(756), NF-kappaB Inhibitor : CK(5541) : AC(3374), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

N-acetylcysteine alleviates fluoride-induced testicular apoptosis by modulating IRE1α/JNK signaling and nuclear Nrf2 activation.

Pubmed Data : Reprod Toxicol. 2019 03 ;84:98-107. Epub 2019 Jan 8. PMID: **30633982**

Article Published Date : Dec 31, 2018

Authors : Yazhen Hu, Yawei Wang, Ting Yan, Demin Feng, Yue Ba, Huizhen Zhang, Jingyuan Zhu, Xuemin Cheng, Liuxin Cui, Hui Huang

Study Type : Animal Study
Additional Links
Substances : NAC (N-acetyl-L-cysteine) : CK(1429) : AC(366)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Riboflavin alleviates fluoride-induced ferroptosis by IL-17A-independent system Xc-/GPX4 pathway and iron metabolism in testicular Leydig cells.

Pubmed Data : Environ Pollut. 2024 Jan 8 ;344:123332. Epub 2024 Jan 8. PMID: **38199481**

Article Published Date : Jan 07, 2024

Authors : Xiang Li, Jie Yang, Erbao Shi, Yiguang Lu, Xiaochao Song, Huifeng Luo, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links

Substances : Riboflavin (Vitamin B-2) : CK(409) : AC(71)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Royal jelly reduces fluoride induced testicular damage and infertility.

Pubmed Data : Reprod Sci. 2023 May 12. Epub 2023 May 12. PMID: **37171774**

Article Published Date : May 11, 2023

Authors : Gozde Parlak, Abdullah Aslan, Gaffari Turk, Tuncay Kuloglu, Merve Kavak Balgetir, Ozlem Gok, Seda Beyaz, Akif Evren Parlak, Serap Dayan Cinkara

Study Type : Animal Study
Additional Links
Substances : Royal Jelly : CK(634) : AC(234)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Nrf2 activation : CK(2908) : AC(1762)
Problem Substances : Fluoride : CK(1815) : AC(454)

Sodium fluoride disrupts testosterone biosynthesis by affecting the steroidogenic pathway in TM3 Leydig cells.

Pubmed Data : Chemosphere. 2018 Dec ;212:447-455. Epub 2018 Aug 22. PMID: **30165274**

Article Published Date : Nov 30, 2018

Authors : Banu Orta Yilmaz, Ahu Korkut, Melike Erkan

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Low Testosterone : CK(852) : AC(140), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

This study proved that oxidative stress probably play a major role in NaF-induced apoptosis of Sertoli cells.

Pubmed Data : Int J Environ Health Res. 2015 ;25(1):1-9. Epub 2014 Feb 13. PMID: **24521312**

Article Published Date : Dec 31, 2014

Authors : Yang Yang, Hui Huang, Yue Ba, Xue-Min Cheng, Liu-Xin Cui

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Testicular Injury: Fluoride-Induced (AC 1) (CK 2)

Fluoride exposure during puberty induces testicular impairment via ER stress-triggered apoptosis in mice.

Pubmed Data : Food Chem Toxicol. 2024 Jul ;189:114773. Epub 2024 May 31. PMID: **38823497**

Article Published Date : Jul 01, 2024

Authors : Rong Wang, Wenjing Gong, Yumeng Jiang, Qizi Yin, Ziyue Wang, Jie Wu, Mingming Zhang, Mengyuan Li, Yehao Liu, Juan Wang, Yuanhua Chen, Yanli Ji

Study Type : Animal Study
Additional Links
Diseases : Testicular Injury: Fluoride-Induced : CK(2) : AC(1)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Fluoride : CK(1815) : AC(454)

Thyroid Diseases (AC 1) (CK 2)

Sesamin alleviated fluoride - induced thyroid endocrine disruption.

Pubmed Data : Aquat Toxicol. 2023 Aug ;261:106625. Epub 2023 Jul 4. PMID: **37407302**

Article Published Date : Jul 31, 2023

Authors : Tianyu Wang, Shanshan Wu, Jianjie Chen, Lijuan Li, Jinling Cao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Thyroid Diseases : CK(348) : AC(52)
Pharmacological Actions : Cytoprotective : CK(797) : AC(393)
Additional Keywords : Gene Expression Regulation : CK(1399) : AC(621)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Thyroid Dysfunction (AC 3) (CK 41)

Exposure to high-fluoride drinking water appears to non-linearly affect thyroid function and increase TSH release in children.

Pubmed Data : Environ Res. 2024 Feb 1 ;242:117759. Epub 2023 Nov 28. PMID: **38029816**

Article Published Date : Jan 31, 2024

Authors : Inga Iamandii, Lisa De Pasquale, Maria Edvige Giannone, Federica Veneri, Luigi Generali, Ugo Consolo, Linda S Birnbaum, Jacqueline Castenmiller, Thorhallur I Halldorsson, Tommaso Filippini, Marco Vinceti

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Goiter: Exophthalmic : CK(32) : AC(3), Hypothyroidism : CK(847) : AC(148), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Fluoride exposure was associated with alterations in maternal thyroid hormone levels.

Pubmed Data : Environ Int. 2024 Jan 12 ;184:108442. Epub 2024 Jan 12. PMID: **38237505**

Article Published Date : Jan 11, 2024

Authors : Meaghan Hall, Rick Hornung, Jonathan Chevrier, Pierre Ayotte, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Low-moderate fluoride exposure is associated with alterations in childhood thyroid function.

Pubmed Data : Environ Int. 2020 Jan ;134:105229. Epub 2019 Nov 4. PMID: **31698198**

Article Published Date : Dec 31, 2019

Authors : Mengwei Wang, Ling Liu, Huijun Li, Yonggang Li, Hongliang Liu, Changchun Hou, Qiang Zeng, Pei Li, Qian Zhao, Lixin Dong, Guoyu Zhou, Xingchen Yu, Li Liu, Qing Guan, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Thyroid Dysfunction : CK(86) : AC(13)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Tourette Syndrome (AC 1) (CK 2)

Sodium flouride exposure during pregnancy may interfere with normal development and increase the risk of neurological and psychiatric disorders in adulthood.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2010 Jun;14(6):507-12. PMID: **20712257**

Article Published Date : Jun 01, 2010

Authors : P Flace, V Benagiano, D Vermesan, R Sabatini, A M Inchingolo, A Inchingolo, P Auteri, G Ambrosi, A Tarullo, R Cagiano

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Huntington Disease : CK(222) : AC(103), Obsessive-Compulsive Disorder : CK(421) : AC(77), Prenatal Chemical Exposures : CK(2428) : AC(530), Schizophrenia : CK(1080) : AC(191), Tourette Syndrome : CK(207) : AC(30)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Teratogenic : CK(325) : AC(66)

Uterine Diseases (AC 1) (CK 2)

Female reproductive function is inhibited by NaF and that exposure to NaF causes ovarian and uterine structural damage.

Pubmed Data : Food Chem Toxicol. 2013 Feb 28. Epub 2013 Feb 28. PMID: **23459146**

Article Published Date : Feb 28, 2013

Authors : Yongjiang Zhou, Hailing Zhang, Junlin He, Xuemei Chen, Yubing Ding, Yingxiong Wang Xueqing Liu

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Ovarian Diseases : CK(33) : AC(16), Uterine Diseases : CK(1291) : AC(335)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Vascular Calcification (AC 1) (CK 10)

There is an association of vascular fluoride uptake with vascular calcification and coronary artery disease.

Pubmed Data : Nucl Med Commun. 2012 Jan ;33(1):14-20. PMID: **21946616**

Article Published Date : Jan 01, 2012

Authors : Yuxin Li, Gholam R Berenji, Wisam F Shaba, Bashir Tafti, Ella Yevdayev, Simin Dadparvar

Study Type : Human Study

Additional Links

Diseases : Arterial Calcification : CK(268) : AC(45), Ectopic Calcification : CK(1125) : AC(185), Vascular Calcification : CK(443) : AC(82)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Vitamin A Deficiency (AC 1) (CK 2)

Sodium fluoride led to a significant decrease in vitamin A levels in rats exposed to 20ppm.

Pubmed Data : Int J Dev Neurosci. 2015 Sep 18. Epub 2015 Sep 18. PMID: **26390955**

Article Published Date : Sep 17, 2015

Authors : Rajkiran Reddy Reddy Banala, Karnati Pratap Reddy

Study Type : Animal Study

Additional Links

Diseases : Oxidative Stress : CK(13443) : AC(5499), Vitamin A Deficiency : CK(137) : AC(28)

Additional Keywords : Increased Risk : CK(8492) : AC(1109)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Category : Adverse Pharmacological Actions

Abortive (AC 1) (CK 10)

An increased risk of spontaneous abortion among fabrication workers has been linked to fluoride compound and photoresist and developed solvents (PDS) exposure.

Pubmed Data : Am J Ind Med. 1995 Dec ;28(6):751-69. PMID: **8588562**

Article Published Date : Dec 01, 1995

Authors : S H Swan, J J Beaumont, S K Hammond, J VonBehren, R S Green, M F Hallock, S R Woskie, C J Hines, M B Schenker

Study Type : Human Study

Additional Links
Diseases : Abortion: Spontaneous : CK(325) : AC(42), Infertility: Female : CK(741) : AC(180)
Problem Substances : Fluoride : CK(1815) : AC(454), Photoresist and developed solvents (PDS) : CK(10) : AC(1)
Adverse Pharmacological Actions : Abortive : CK(57) : AC(9), Anti-Fertility : CK(112) : AC(21)

Acetylcholinesterase inhibitor (xenobiotic) (AC 1) (CK 2)

Fluoride may go through the blood-brain barrier and accumulate in rat hippocampus, and inhibit the activity of cholinesterase.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2003 Apr ;21(2):102-4. PMID: **14761523**

Article Published Date : Apr 01, 2003

Authors : Jin-xia Zhai, Zhi-yong Guo, Chuan-lai Hu, Qi-nan Wang, Qi-xing Zhu

Study Type : Animal Study
Additional Links
Diseases : Blood-Brain-Barrier Disorders : CK(31) : AC(18), Brain Injury: Hippocampal Damage : CK(44) : AC(21)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(8) : AC(4), Neurotoxic : CK(2838) : AC(702)

Anti-Fertility (AC 12) (CK 50)

"Decreased in vitro fertility in male rats exposed to fluoride-induced oxidative stress damage and mitochondrial transmembrane potential loss."

Pubmed Data : Toxicol Appl Pharmacol. 2008 Aug 1 ;230(3):352-7. Epub 2008 Mar 28. PMID: **18455746**

Article Published Date : Aug 01, 2008

Authors : Jeannett A Izquierdo-Vega, Manuel Sánchez-Gutiérrez, Luz María Del Razo

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21), Oxidant : CK(646) : AC(246)

An increased risk of spontaneous abortion among fabrication workers has been linked to fluoride compound and photoresist and developed solvents (PDS) exposure.

Pubmed Data : Am J Ind Med. 1995 Dec ;28(6):751-69. PMID: **8588562**

Article Published Date : Dec 01, 1995

Authors : S H Swan, J J Beaumont, S K Hammond, J VonBehren, R S Green, M F Hallock, S R Woskie, C J Hines, M B Schenker

Study Type : Human Study
Additional Links
Diseases : Abortion: Spontaneous : CK(325) : AC(42), Infertility: Female : CK(741) : AC(180)
Problem Substances : Fluoride : CK(1815) : AC(454), Photoresist and developed solvents (PDS) : CK(10) : AC(1)
Adverse Pharmacological Actions : Abortive : CK(57) : AC(9), Anti-Fertility : CK(112) : AC(21)

Exposure to high fluoride concentrations in drinking water is associated with decreased birth rates.

Pubmed Data : J Toxicol Environ Health. 1994 May ;42(1):109-21. PMID: **8169995**

Article Published Date : May 01, 1994

Authors : S C Freni

Study Type : Meta Analysis
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Infertility: Male : CK(1668) : AC(424)
Additional Keywords : Causes Of Decreased Birth Rates : CK(20) : AC(1)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Female reproductive function is inhibited by NaF and that exposure to NaF causes ovarian and uterine structural damage.

Pubmed Data : Food Chem Toxicol. 2013 Feb 28. Epub 2013 Feb 28. PMID: **23459146**

Article Published Date : Feb 28, 2013

Authors : Yongjiang Zhou, Hailing Zhang, Junlin He, Xuemei Chen, Yubing Ding, Yingxiong Wang Xueqing Liu

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Ovarian Diseases : CK(33) : AC(16), Uterine Diseases : CK(1291) : AC(335)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fertility impairment in mice on a low fluoride intake has been observed.

Pubmed Data : Science. 1972 Sep 8 ;177(4052):893-4. PMID: **5054644**

Article Published Date : Sep 08, 1972

Authors : H H Messer, W D Armstrong, L Singer

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Fluoride-induced apoptosis and gene expression profiling in mice sperm in vivo has been obsered.

Pubmed Data : Arch Toxicol. 2011 Nov ;85(11):1441-52. Epub 2011 Feb 22. PMID: **21340527**

Article Published Date : Nov 01, 2011

Authors : Zilong Sun, Ruiyan Niu, Bin Wang, Zhibin Jiao, Jinming Wang, Jianhai Zhang, Shaolin Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Azoospermic : CK(4) : AC(2), Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Count: Low : CK(116) : AC(25), Sperm Quality: Low : CK(611) : AC(121)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Microdose vasal injection of sodium fluoride in the rat interferes with fertlity.

Pubmed Data : Reprod Toxicol. 1991 ;5(6):505-12. PMID: **1839778**

Article Published Date : Jan 01, 1991

Authors : N J Chinoy, M V Rao, M V Narayana, E Neelakanta

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride administrated in drinking water of 2, 4, and 6 ppm concentration for 6 months to male rats adversely affected their fertility and reproductive system.

Pubmed Data : Toxicol Ind Health. 2007 Oct;23(9):507-13. PMID: **18681235**

Article Published Date : Oct 01, 2007

Authors : R S Gupta, T I Khan, D Agrawal, J B S Kachhawa

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Infertility: Male : CK(1668) : AC(424), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride could reduce sperm motility, capacitation, and the acrosome reaction leading to poor fertilization and suppressed embryonic development.

Pubmed Data : Andrology. 2015 Apr 8. Epub 2015 Apr 8. PMID: **25854509**

Article Published Date : Apr 07, 2015

Authors : Jin Kim, Woo-Sung Kwon, Md Saidur Rahman, June-Sub Lee, Sung-Jae Yoon, Yoo-Jin Park, Young-Ah You, Myung-Geol Pang

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride epigenetically impaired mouse oocyte maturation and embryonic development.

Pubmed Data : Environ Sci Technol. 2014 Sep 2 ;48(17):10398-405. Epub 2014 Aug 14. PMID: **25102367**

Article Published Date : Sep 01, 2014

Authors : Mingzhe Fu, Xinying Wu, Jie He, Yong Zhang, Song Hua

Study Type : Animal Study
Additional Links
Diseases : Infertility : CK(2481) : AC(656)
Additional Keywords : Dose Response : CK(1769) : AC(700), Embryonic Development : CK(3) : AC(2), Gene Expression : CK(282) : AC(104), Prenatal Epigenetic Programming : CK(66) : AC(18)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Sodium fluoride treatment impairs the subsequent embryonic developmental potential of the oocytes.

Pubmed Data : Environ Toxicol. 2015 May 26. Epub 2015 May 26. PMID: **26011085**

Article Published Date : May 25, 2015

Authors : Shuang Liang, Ming-Hui Zhao, Sun A Ock, Nam-Hyung Kim, Xiang-Shun Cui

Study Type : Animal Study
Additional Links
Diseases : Infertility: Female : CK(741) : AC(180), Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

The administration of high concentrations of fluoride to female mice results in ovarian damage and significantly reduces the number and the fertilization potential of mature oocytes.

Pubmed Data : PLoS One. 2015 ;10(6):e0129594. Epub 2015 Jun 8. PMID: **26053026**

Article Published Date : Dec 31, 2014

Authors : Songna Yin, Chao Song, Haibo Wu, Xin Chen, Yong Zhang

Study Type : Animal Study
Additional Links
Diseases : Female Reproductive Development Abnormalities : CK(86) : AC(31), Infertility: Female : CK(741) : AC(180)
Additional Keywords : Gene Expression : CK(282) : AC(104)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21)

Apoptotic (AC 29) (CK 62)

A mini review of fluoride-induced apoptotic pathways.

Pubmed Data : Environ Sci Pollut Res Int. 2018 Dec ;25(34):33926-33935. Epub 2018 Oct 18. PMID: **30338467**

Article Published Date : Nov 30, 2018

Authors : Qin Wei, Huidan Deng, Hengmin Cui, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Apoptosis and inflammation involved with fluoride-induced bone injuries.

Pubmed Data : Nutrients. 2024 Jul 31 ;16(15). Epub 2024 Jul 31. PMID: **39125380**

Article Published Date : Jul 30, 2024

Authors : Miao Wang, Kangting Luo, Tongtong Sha, Qian Li, Zaichao Dong, Yanjie Dou, Huanxia Zhang, Guoyu Zhou, Yue Ba, Fangfang Yu

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Arsenic-fluoride co-exposure induced endoplasmic reticulum stress resulting in apoptosis in rat heart and H9c2 cells.

Pubmed Data : Chemosphere. 2022 Feb ;288(Pt 2):132518. Epub 2021 Oct 9. PMID: **34637859**

Article Published Date : Jan 31, 2022

Authors : Meng Li, Jing Feng, Ying Cheng, Nisha Dong, Xiaolin Tian, Penghui Liu, Yannan Zhao, Yulan Qiu, Fengjie Tian, Yi Lyu, Qian Zhao, Cailing Wei, Meng Wang, Jiyu Yuan, Xiaodong Ying, Xuefeng Ren, Xiaoyan Yan

Study Type : In Vitro Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209)

Chronic fluoride exposure induces neuronal apoptosis and impairs neurogenesis and synaptic plasticity.

Pubmed Data : Chemosphere. 2019 Jan ;214:430-435. Epub 2018 Sep 17. PMID: **30273876**

Article Published Date : Dec 31, 2018

Authors : Pei Jiang, Gongying Li, Xueyuan Zhou, Changshui Wang, Yi Qiao, Dehua Liao, Dongmei Shi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Different effects of fluoride exposure on the three major bone cell types.

Pubmed Data : Biol Trace Elem Res. 2020 Jan ;193(1):226-233. Epub 2019 Mar 14. PMID: **30877522**

Article Published Date : Dec 31, 2019

Authors : Ningning Jiang, Fengyang Guo, Boyao Sun, Xiuyun Zhang, Hui Xu

Study Type : In Vitro Study
Additional Links
Diseases : Bone Diseases : CK(325) : AC(101), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Effect of fluoride exposure on mRNA expression of cav1.2 and calcium signal pathway apoptosis regulators in PC12 cells.

Pubmed Data : Environ Toxicol Pharmacol. 2017 Sep ;54:74-79. Epub 2017 Jun 30. PMID: **28697452**

Article Published Date : Aug 31, 2017

Authors : Qiuxia Liao, Rui Zhang, Xiaoyu Wang, Weiwei Nian, Lulu Ke, Wei Ouyang, Zigui Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Effects of fluoride on DNA damage and caspase-mediated apoptosis in the liver of rats.

Pubmed Data : Biol Trace Elem Res. 2015 Aug ;166(2):173-82. Epub 2015 Feb 20. PMID: **25693680**

Article Published Date : Jul 31, 2015

Authors : Guo Hua Song, Fu Bing Huang, Ji Ping Gao, Mao Lin Liu, Wen Biao Pang, Wei bin Li, Xiao Yan Yan, Mei Jun Huo, Xia Yang

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Excessive-fluoride intake can induce thyroid injury.

Pubmed Data : Zhonghua Yu Fang Yi Xue Za Zhi. 2018 Nov 6 ;52(11):1182-1187. PMID: **30419706**

Article Published Date : Nov 05, 2018

Authors : L Y Yu, Y S Cui, H L Liu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride exposure provokes mitochondria-mediated apoptosis and increases mitophagy in osteocytes.

Pubmed Data : Biol Trace Elem Res. 2023 Aug ;201(8):3994-4007. Epub 2022 Oct 18. PMID: **36255553**

Article Published Date : Jul 31, 2023

Authors : Yun Zhang, Fanhe Dong, Zihan Wang, Bingbing Xu, Tao Zhang, Qiqi Wang, Qiao Lin

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride induced tissue hypercalcemia, IL-17 mediated inflammation and apoptosis lead to cardiomyopathy.

Pubmed Data : Toxicology. 2018 Aug 1 ;406-407:44-57. Epub 2018 May 22. PMID: **29800585**

Article Published Date : Jul 31, 2018

Authors : Javed Ahsan Quadri, Saba Sarwar, Pinky, Parmita Kar, Seema Singh, Saumya Ranjan Mallick, Sudheer Arava, Tapash Chand Nag, Tara Sankar Roy, A Shariff

Study Type : Animal Study
Additional Links
Diseases : Cardiomyopathy : CK(358) : AC(160), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Fluoride induces apoptosis and alters collagen I expression in rat osteoblasts.

Pubmed Data : Toxicol Lett. 2011 Feb 5 ;200(3):133-8. Epub 2010 Nov 18. PMID: **21093551**

Article Published Date : Feb 04, 2011

Authors : Xiaoyan Yan, Xiaoting Yan, Alex Morrison, Tianlong Han, Qinglin Chen, Ji Li, Jundong Wang

Study Type : In Vitro Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride induces apoptosis in mammalian cells.

Pubmed Data : Anticancer Res. 2017 Sep ;37(9):4767-4777. PMID: **28870895**

Article Published Date : Aug 31, 2017

Authors : Daniel Araki Ribeiro, Caroline Margonato Cardoso, Veronica Quispe Yujra, Milena DE Barros Viana, Odair Aguiar, Luciana Pellegrini Pisani, Celina Tizuko Fujiyama Oshima

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride induces pyroptosis via IL-17A-mediated caspase-1/11-dependent pathways and Bifidobacterium intervention in testis.

Pubmed Data : Sci Total Environ. 2024 May 20 ;926:172036. Epub 2024 Mar 28. PMID: **38554964**

Article Published Date : May 19, 2024

Authors : Ao Cheng, Huifeng Luo, Bingchao Fan, Qing Xiang, Zhaochen Nie, Shuang Feng, Yurou Qiao, Yue Wu, Qianlong Zhu, Rongxiu Liu, Xiaochao Song, Xiang Li, Jianhai Zhang

Study Type : Animal Study
Additional Links
Substances : Bifidobacterium : CK(1540) : AC(254)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Pharmacological Actions : Anti-Inflammatory Agents : CK(35225) : AC(15297), Interleukin-17 downregulation : CK(484) : AC(187)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Fluoride-induced apoptosis in non-skeletal tissues of experimental animals.

Pubmed Data : Heliyon. 2023 Aug ;9(8):e18646. Epub 2023 Jul 29. PMID: **37560699**

Article Published Date : Jul 31, 2023

Authors : Linet Musungu Angwa, Sylvester Dodzi Nyadanu, Anne Murugi Kanyugo, Timothy Adampah, Gavin Pereira

Study Type : Meta Analysis, Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Human cultured IMR-32 neuronal-like and U87 glial-like cells have different patterns of toxicity under fluoride exposure.

Pubmed Data : PLoS One. 2021 ;16(6):e0251200. Epub 2021 Jun 17. PMID: **34138870**

Article Published Date : Dec 31, 2020

Authors : Bruna Puty, Leonardo Oliveira Bittencourt, Iago Cesar Nogueira, Marília Afonso Rabelo Buzalaf, Edivaldo Herculano Oliveira, Rafael Rodrigues Lima

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Mitochondrial respiratory chain dysfunction mediated by ROS is a primary point of fluoride-induced damage in Hepa1-6 cells.

Pubmed Data : Environ Pollut. 2019 Dec ;255(Pt 3):113359. Epub 2019 Oct 7. PMID: **31614248**

Article Published Date : Nov 30, 2019

Authors : Hong-Wei Wang, Yan Zhang, Pan-Pan Tan, Liu-Shu Jia, Yu Chen, Bian-Hua Zhou

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

PRKAA1 induces aberrant mitophagy in a PINK1/Parkin-dependent manner, contributing to fluoride-induced developmental neurotoxicity.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Apr 15 ;255:114772. Epub 2023 Mar 14. PMID: **36924562**

Article Published Date : Apr 14, 2023

Authors : Yanling Tang, Jingjing Zhang, Zeyu Hu, Wanjing Xu, Panpan Xu, Yue Ma, Hengrui Xing, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Sodium fluoride causes oxidative stress and apoptosis in cementoblasts.

Pubmed Data : Chem Biol Interact. 2018 Aug 18 ;294:34-39. Epub 2018 Aug 18. PMID: **30130527**

Article Published Date : Aug 17, 2018

Authors : Jing Ni, Yiming Li, Wu Zhang, Rong Shu, Zhe Zhong

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Gingivitis : CK(595) : AC(86)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Sodium fluoride causes oxidative stress and apoptosis in the mouse liver.

Pubmed Data : Aging (Albany NY). 2017 Jun 27 ;9(6):1623-1639. PMID: **28657544**

Article Published Date : Jun 26, 2017

Authors : Yujiao Lu, Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Sodium fluoride exposure compromises hair follicle growth and accelerates programmed cell death.

Pubmed Data : Biol Trace Elem Res. 2010 Jan 5. Epub 2010 Jan 5. PMID: **20049553**

Article Published Date : Jan 05, 2010

Authors : Zheng-hui Wang, Xiao-li Li, Zhuang-qun Yang, Min Xu

Study Type : In Vitro Study
Additional Links
Diseases : Hair Loss : CK(763) : AC(143), Hair Quality Problems : CK(32) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Sodium fluoride induces apoptosis in H9c2 cardiomyocytes.

Pubmed Data : Biol Trace Elem Res. 2015 Aug ;166(2):210-5. Epub 2015 Feb 25. PMID: **25707396**

Article Published Date : Jul 31, 2015

Authors : Xiaoyan Yan, Xia Yang, Xianhui Hao, Qiurong Ren, Jiping Gao, Yu Wang, Na Chang, Yulan Qiu, Guohua Song

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209)

Sodium fluoride induces apoptosis in mouse embryonic stem cells through ROS-dependent and caspase- and JNK-mediated pathways.

Pubmed Data : Toxicol Appl Pharmacol. 2012 Mar 15 ;259(3):329-37. Epub 2012 Jan 21. PMID: **22285274**

Article Published Date : Mar 14, 2012

Authors : Tam Dan Nguyen Ngoc, Young-Ok Son, Shin-Saeng Lim, Xianglin Shi, Jong-Ghee Kim, Jung Sun Heo, Youngji Choe, Young-Mi Jeon, Jeong-Chae Lee

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Sodium fluoride induces apoptosis in mouse splenocytes by activating ROS-dependent NF-κB signaling.

Pubmed Data : Oncotarget. 2017 Dec 29 ;8(70):114428-114441. Epub 2017 Dec 1. PMID: **29383091**

Article Published Date : Dec 28, 2017

Authors : Huidan Deng, Ping Kuang, Hengmin Cui, Qin Luo, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Immunotoxic : CK(507) : AC(127)

Sodium fluoride induces apoptosis in the kidney of rats through caspase-mediated pathways and DNA damage.

Pubmed Data : J Physiol Biochem. 2014 Sep ;70(3):857-68. Epub 2014 Aug 27. PMID: **25158646**

Article Published Date : Aug 31, 2014

Authors : Guo Hua Song, Ji Ping Gao, Chun Fang Wang, Chao Yang Chen, Xiao Yan Yan, Min Guo, Yu Wang, Fu Bing Huang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Renotoxic : CK(56) : AC(20)

Sodium fluoride induces the splenic apoptosis.

Pubmed Data : Aging (Albany NY). 2016 Dec 27 ;8(12):3552-3567. PMID: **28039491**

Article Published Date : Dec 26, 2016

Authors : Huidan Deng, Ping Kuang, Hengmin Cui, Lian Chen, Qin Luo, Jing Fang, Zhicai Zuo, Junliang Deng, Xun Wang, Ling Zhao

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Sodium fluoride may interfere with odontogenesis by inhibiting antioxidative enzymes and inducing programmed cell death.

Pubmed Data : J Oral Pathol Med. 2010 Aug 3. Epub 2010 Aug 3. PMID: **20738751**

Article Published Date : Aug 03, 2010

Authors : L F Jacinto-Alemán, J C Hernández-Guerrero, C Trejo-Solís, M D Jiménez-Farfán, A M Fernández-Presas

Study Type : In Vitro Study
Additional Links
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Sodium fluoride promotes apoptosis by generation of reactive oxygen species in human lymphocytes.

Pubmed Data : J Toxicol Environ Health A. 2014 ;77(21):1269-80. PMID: **25268553**

Article Published Date : Dec 31, 2013

Authors : Manivannan Jothiramajayam, Sonali Sinha, Manosij Ghosh, Anish Nag, Aditi Jana, Anita Mukherjee

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Genotoxic : CK(545) : AC(184)

The footprints of mitochondrial fission and apoptosis in fluoride-induced renal dysfunction.

Pubmed Data : Biol Trace Elem Res. 2024 Sep ;202(9):4125-4135. Epub 2023 Dec 7. PMID: **38057486**

Article Published Date : Aug 31, 2024

Authors : Qiyong Zuo, Lin Lin, Yuling Zhang, Mohammad Mehdi Ommati, Hongwei Wang, Jing Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

This study proved that oxidative stress probably play a major role in NaF-induced apoptosis of Sertoli cells.

Pubmed Data : Int J Environ Health Res. 2015 ;25(1):1-9. Epub 2014 Feb 13. PMID: **24521312**

Article Published Date : Dec 31, 2014

Authors : Yang Yang, Hui Huang, Yue Ba, Xue-Min Cheng, Liu-Xin Cui

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Testicular Injury: Chemical/Metal Induced : CK(754) : AC(374)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120)

Atherogenic (AC 1) (CK 1)

Sodium fluoride exposure may result in increased oxidative stress and increased reaction oxygen species (ROS) production.

Pubmed Data : Toxicol Lett. 2010 Jul 1;196(2):74-9. Epub 2010 Apr 22. PMID: **20399260**

Article Published Date : Jul 01, 2010

Authors : I Gutowska, I Baranowska-Bosiacka, M Baśkiewicz, B Milo, A Siennicka, M Marchlewicz, B Wiszniewska, B Machaliński, E Stachowska

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Atherogenic : CK(25) : AC(5), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Cardiotoxic (AC 18) (CK 38)

A new insight into fluoride induces cardiotoxicity.

Pubmed Data : Toxicology. 2024 Jan ;501:153688. Epub 2023 Nov 28. PMID: **38036095**

Article Published Date : Dec 31, 2023

Authors : Lulu Hou, Haiyan Dong, Enyu Zhang, Hongmin Lu, Yue Zhang, Hongjing Zhao, Mingwei Xing

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Arsenic-fluoride co-exposure induced endoplasmic reticulum stress resulting in apoptosis in rat heart and H9c2 cells.

Pubmed Data : Chemosphere. 2022 Feb ;288(Pt 2):132518. Epub 2021 Oct 9. PMID: **34637859**

Article Published Date : Jan 31, 2022

Authors : Meng Li, Jing Feng, Ying Cheng, Nisha Dong, Xiaolin Tian, Penghui Liu, Yannan Zhao, Yulan Qiu, Fengjie Tian, Yi Lyu, Qian Zhao, Cailing Wei, Meng Wang, Jiyu Yuan, Xiaodong Ying, Xuefeng Ren, Xiaoyan Yan

Study Type : In Vitro Study
Additional Links
Diseases : Arsenic Poisoning : CK(383) : AC(129), Fluoride Toxicity : CK(1389) : AC(376)

Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209)

Chronic fluoride exposure has an important role in pathogenesis of coronary artery ectasia.

Pubmed Data : Biol Trace Elem Res. 2011 Nov ;143(2):695-701. Epub 2010 Dec 7. PMID: **21136197**

Article Published Date : Nov 01, 2011

Authors : Ozkan Dede, Ercan Varol, Ahmet Altinbas, Simge Varol

Study Type : Human Study
Additional Links
Diseases : Coronary Artery Ecstasia : CK(10) : AC(1)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Chronic fluoride exposure is associated with myocardial damage which is attenuated with selenium and vitamin E.

Pubmed Data : Toxicol Int. 2011 Jul ;18(2):99-104. PMID: **21976813**

Article Published Date : Jul 01, 2011

Authors : Mahaboob P Basha, N S Sujitha

Study Type : Animal Study
Additional Links
Substances : Selenium : CK(1706) : AC(389), Vitamin E : CK(3039) : AC(570)
Pharmacological Actions : Cardioprotective : CK(8685) : AC(2877)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Effect of water fluoridation on the development of medial vascular calcification in uremic rats.

Pubmed Data : Toxicology. 2014 Apr 6 ;318:40-50. Epub 2014 Feb 18. PMID: **24561004**

Article Published Date : Apr 06, 2014

Authors : Ana Martín-Pardillos, Cecilia Sosa, Ángel Millán, Víctor Sorribas

Study Type : Animal Study
Additional Links
Diseases : Arterial Calcification : CK(268) : AC(45), Atheroma : CK(17) : AC(5), Atherosclerosis : CK(1964) : AC(771), Chronic Kidney Disease (CKD) : CK(1176) : AC(210), Ectopic Calcification : CK(1125) : AC(185), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Fluoride and arsenic exhibit cardiotoxic properties related to their pro-inflammatory effect.

Pubmed Data : Arch Toxicol. 2012 Mar 16. Epub 2012 Mar 16. PMID: **22422340**

Article Published Date : Mar 16, 2012

Authors : Yanqin Ma, Ruiyan Niu, Zilong Sun, Jinming Wang, Guangying Luo, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169), Interleukin-6 up-regulation : CK(41) : AC(10), Interleukin-8 up-regulation : CK(2) : AC(1), MCP-1 (CCL2) up-regulation : CK(7) : AC(2), P-selectin upregulation : CK(2) : AC(1), Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation : CK(4) : AC(2)

Fluoride induced tissue hypercalcemia, IL-17 mediated inflammation and apoptosis lead to cardiomyopathy.

Pubmed Data : Toxicology. 2018 Aug 1 ;406-407:44-57. Epub 2018 May 22. PMID: **29800585**

Article Published Date : Jul 31, 2018

Authors : Javed Ahsan Quadri, Saba Sarwar, Pinky, Parmita Kar, Seema Singh, Saumya Ranjan Mallick, Sudheer Arava, Tapash Chand Nag, Tara Sankar Roy, A Shariff

Study Type : Animal Study
Additional Links
Diseases : Cardiomyopathy : CK(358) : AC(160), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Fluoride induces apoptosis in H9c2 cardiomyocytes.

Pubmed Data : Chemosphere. 2017 May 1 ;182:159-165. Epub 2017 May 1. PMID: **28494360**

Article Published Date : Apr 30, 2017

Authors : Xiaoyan Yan, Lu Wang, Xia Yang, Yulan Qiu, Xiaolin Tian, Yi Lv, Fengjie Tian, Guohua Song, Tong Wang

Study Type : In Vitro Study
Additional Links
Diseases : Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Fluorine is a factor in premature aging, and related adverse health effects.

Pubmed Data : Ann Acad Med Stetin. 2004 ;50 Suppl 1:9-13. PMID: **16892576**

Article Published Date : Jan 01, 2004

Authors : Anna Machoy-Mokrzyńska

Study Type : Review
Additional Links
Diseases : Aging : CK(5992) : AC(1444), Arterial Calcification : CK(268) : AC(45)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Morphological changes and mitochondrial alterations on cardiomyocytes exposed to fluoride.

Pubmed Data : P R Health Sci J. 2023 Jun ;42(2):132-138. PMID: **37352535**

Article Published Date : May 31, 2023

Authors : Areli Limon-Rojas, Amaury Pozos-Guillén, Roberto Salgado-Delgado, Margarita Rodríguez Y Domínguez, Diana María Escobar-García

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)
Additional Keywords : Dose Response : CK(1769) : AC(700)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Prolonged ingestion of fluoride through drinking water, particularly with high doses, induced significant histopathological and biochemical changes leading to myocardial tissue damage.

Pubmed Data : Hum Exp Toxicol. 2005 Feb;24(2):79-87. PMID: **15850282**

Article Published Date : Feb 01, 2005

Authors : Ekrem Cicek, Gulsen Aydin, Mehmet Akdogan, Huseyin Okutan

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Quercetin has a protective effect against sodium fluoride induced oxidative stress in rat's heart.

Pubmed Data : Food Funct. 2012 Feb 8. Epub 2012 Feb 8. PMID: **22314573**

Article Published Date : Feb 08, 2012

Authors : Seyed Fazel Nabavi, Seyed Mohammad Nabavi, Morteza Mirzaei, Akbar Hajizadeh Moghaddam

Study Type : Animal Study
Additional Links
Substances : Quercetin : CK(1864) : AC(847)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Cardioprotective : CK(8685) : AC(2877)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Oxidant : CK(646) : AC(246)

Sodium fluoride exposure induces developmental toxicity and cardiotoxicity in zebrafish embryos.

Pubmed Data : Biol Trace Elem Res. 2024 Sep 17. Epub 2024 Sep 17. PMID: **39287768**

Article Published Date : Sep 16, 2024

Authors : Feiqing Wang, Fa Chen, Wen Song, Yanju Li, Haiyan Wu, Tingting Tian, Mengxian Tian, Dongxin Tang, Yang Liu

Study Type : Animal Study
Additional Links
Diseases : Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Sodium fluoride exposure may result in increased oxidative stress and increased reaction oxygen species (ROS) production.

Pubmed Data : Toxicol Lett. 2010 Jul 1;196(2):74-9. Epub 2010 Apr 22. PMID: **20399260**

Article Published Date : Jul 01, 2010

Authors : I Gutowska, I Baranowska-Bosiacka, M Baśkiewicz, B Milo, A Siennicka, M Marchlewicz, B Wiszniewska, B Machaliński, E Stachowska

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Atherogenic : CK(25) : AC(5), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Sodium fluoride induces apoptosis in H9c2 cardiomyocytes.

Pubmed Data : Biol Trace Elem Res. 2015 Aug ;166(2):210-5. Epub 2015 Feb 25. PMID: **25707396**

Article Published Date : Jul 31, 2015

Authors : Xiaoyan Yan, Xia Yang, Xianhui Hao, Qiurong Ren, Jiping Gao, Yu Wang, Na Chang, Yulan Qiu, Guohua Song

Study Type : In Vitro Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209)

Sodium fluoride induces hypertension and cardiac complications in animals.

Pubmed Data : Environ Toxicol. 2016 Jul 5. Epub 2016 Jul 5. PMID: **27378751**

Article Published Date : Jul 04, 2016

Authors : Ademola Adetokunbo Oyagbemi, Temidayo Olutayo Omobowale, Ebunoluwa Racheal Asenuga, Abiola Olumuyiwa Adejumobi, Temitayo Olabisi Ajibade, Temitope Moses Ige, Blessing Seun Ogunpolu, Adeolu Alex Adedapo, Momoh Audu Yakubu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Hypertensive : CK(266) : AC(30), Inflammatory : CK(541) : AC(169)

Terminalia arjuna protects mouse hearts against sodium flouride induced toxicity.

Pubmed Data : J Med Food. 2008 Dec;11(4):733-40. PMID: **19053867**

Article Published Date : Dec 01, 2008

Authors : Mahua Sinha, Prasenjit Manna, Parames C Sil

Study Type : Animal Study
Additional Links
Substances : Arjuna : CK(19) : AC(6), Terminalia : CK(85) : AC(49)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Cardioprotective : CK(8685) : AC(2877)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

These findings reveal that acute fluoride exposure causes sudden heart failure.

Pubmed Data : Int J Cardiol. 2017 Feb 15 ;229:96-101. Epub 2016 Nov 9. PMID: **27863940**

Article Published Date : Feb 14, 2017

Authors : Lakshmikanthan Panneerselvam, Azhwar Raghunath, Ekambaram Perumal

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Heart Failure : CK(1884) : AC(327)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209)

Cytotoxic (AC 2) (CK 2)

Cytotoxicity of the ingredients of commonly used toothpastes and mouthwashes on human gingival fibroblasts.

Pubmed Data : Front Dent. 2019 Nov-Dec;16(6):450-457. Epub 2019 Dec 20. PMID: **33089246**

Article Published Date : Oct 31, 2019

Authors : Masoumeh Hasani Tabatabaei, Farzaneh Sadeghi Mahounak, Nafiseh Asgari, Zohreh Moradi

Study Type : In Vitro Study
Additional Links
Problem Substances : Sodium Fluoride : CK(1446) : AC(393), Sodium lauryl sulfate : CK(47) : AC(8)
Adverse Pharmacological Actions : Cytotoxic : CK(285) : AC(125)

Sodium fluoride may exert its cytotoxic effects by disturbing tissue formation due to alterted cell interacctions.

Pubmed Data : Cell Biol Toxicol. 2010 Aug 1. Epub 2010 Aug 1. PMID: **20680429**

Article Published Date : Aug 01, 2010

Authors : Euridice Prado, Tilmann Wurtz, Didier Ferbus, El-Hassan Shabana, Nadine Forest, Ariane Berdal

Study Type : In Vitro Study
Additional Links
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cytotoxic : CK(285) : AC(125)

Diabetogenic (AC 1) (CK 2)

Supplementation of ginseng and banaba leaf extracts exhibited protective effects on fluoride toxicated STZ induced nephrotoxicity in mice.

Pubmed Data : Indian J Med Res. 2013 Feb ;137(2):370-9. PMID: **23563382**

Article Published Date : Jan 31, 2013

Authors : Mahaboob P Basha, S M Saumya

Study Type : Animal Study
Additional Links
Substances : Banaba : CK(36) : AC(20), Ginseng : CK(4190) : AC(1902)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Renoprotective : CK(4133) : AC(1932)
Additional Keywords : Plant Extracts : CK(18030) : AC(6728)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Diabetogenic : CK(340) : AC(58)

Dysbiotic (AC 1) (CK 2)

Alleviation of fluoride-induced colitis by tea polysaccharides.

Pubmed Data : J Hazard Mater. 2024 Sep 5 ;476:134858. Epub 2024 Jun 7. PMID: **38905983**

Article Published Date : Sep 05, 2024

Authors : Chenjun Zhao, Guijie Chen, Ying Huang, Yuxuan Zhang, Sichen Li, Zhiliang Jiang, Huihui Peng, Juan Wang, Daxiang Li, Ruyan Hou, Chuanyi Peng, Xiaochun Wan, Huimei Cai

Study Type : Animal Study
Additional Links

Substances : Tea : CK(4517) : AC(940)
Diseases : Colitis : CK(1495) : AC(715), Dysbiosis : CK(2010) : AC(579)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Dysbiotic : CK(2) : AC(1)

Embryotoxic (AC 1) (CK 2)

Effects of water fluoridation on early embryonic development of zebrafish.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Jan 15 ;270:115907. Epub 2024 Jan 4. PMID: **38176185**

Article Published Date : Jan 14, 2024

Authors : Ya-Lan Wei, Xin-Chen Lin, Ying-Ying Liu, Yu-Qing Lei, Xu-Dong Zhuang, Hai-Tao Zhang, Xin-Rui Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Embryotoxic : CK(20) : AC(11)

Endocrine Disruptor (AC 3) (CK 6)

Fluoride induces thyroid dysfunction in rats, which may be attenuated by protein and calcium supplementation.

Pubmed Data : Toxicol Ind Health. 2009 Feb;25(1):49-57. PMID: **19318504**

Article Published Date : Feb 01, 2009

Authors : H Wang, Z Yang, B Zhou, H Gao, X Yan, J Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

Sodium fluoride during gestation and lactation affects male reproduction in adult rats by decreasing spermatogenesis and steroidogenesis.

Pubmed Data : Naturwissenschaften. 2007 Jul;94(7):607-11. Epub 2007 Feb 22. PMID: **17318612**

Article Published Date : Jul 01, 2007

Authors : P Sreedhar Reddy, T Pushpalatha, P Sreenivasula Reddy

Study Type : Animal Study
Additional Links
Diseases : Breastfeeding Concerns: Chemical Exposure : CK(123) : AC(19), Hormone Insufficency : CK(30) : AC(8), Infertility: Male : CK(1668) : AC(424), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

Sodium fluoride may disrupt key genetic markers in developing embryos, potentially affecting normal growth.

Pubmed Data : Arch Toxicol. 2014 Feb ;88(2):241-8. Epub 2013 Sep 13. PMID: **24030355**

Article Published Date : Feb 01, 2014

Authors : Jia-Qiao Zhu, Yang-Jun Si, Lai-Yang Cheng, Bao-Zeng Xu, Qi-Wen Wang, Xiao Zhang, Heng Wang, Zong-Ping Liu

Study Type : Animal Study
Additional Links
Diseases : Fetal Origin of Adult Disease : CK(249) : AC(62)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor : CK(529) : AC(106)

Endocrine Disruptor: Testes (AC 1) (CK 1)

Combined Exposure to Fluoride and Microplastics Causes Sertoli Cell Damage and Reproductive Toxicity

Pubmed Data : Toxicology. 2024 Aug ;506:153849. Epub 2024 May 29. PMID: **38821197**

Article Published Date : Aug 01, 2024

Authors : Tan Ma, Huixian Cheng, Liang Kong, Chenghao Shen, Haibo Jin, Hongliang Li, Chun Pan, Jingyan Liang

Study Type : In Vitro Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor: Testes : CK(56) : AC(12)

Endocrine Disruptor: Thyroid (AC 1) (CK 2)

Fluoride could pose a great threat to thyroid endocrine system.

Pubmed Data : Aquat Toxicol. 2016 Feb ;171:48-58. Epub 2015 Dec 24. PMID: **26748264**

Article Published Date : Jan 31, 2016

Authors : Chen Jianjie, Xue Wenjuan, Cao Jinling, Song Jie, Jia Ruhui, Li Meiyan

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Endocrine Disruptor: Thyroid : CK(139) : AC(34)

Excitotoxic (AC 1) (CK 1)

This study suggests that excitotoxicity may be the central mechanism of autism spectrum disorders and that excitotoxins like aluminum, fluoride, and mercury may exacerbate excitotoxicity.

Pubmed Data : Curr Med Chem. 2009 ;16(2):157-70. PMID: **19149568**

Article Published Date : Jan 01, 2009

Authors : R L Blaylock, A Strunecka

Study Type : Review
Additional Links
Diseases : Autism : CK(942) : AC(162), Autism Spectrum Disorders : CK(3676) : AC(557), Brain: Microglial Activation : CK(192) : AC(114), Heavy Metal Toxicity : CK(2713) : AC(1019)
Additional Keywords : Heavy Metals and Autism : CK(89) : AC(15), Vaccine Research : CK(571) : AC(113)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Mercury : CK(885) : AC(213)
Adverse Pharmacological Actions : Excitotoxic : CK(40) : AC(10), Neurotoxic : CK(2838) : AC(702)

Gastrotoxic (AC 5) (CK 10)

Does fluoride exposure impact on the human microbiome?

Pubmed Data : Toxicol Lett. 2023 Apr 15 ;379:11-19. Epub 2023 Mar 4. PMID: **36871794**

Article Published Date : Apr 14, 2023

Authors : Gary P Moran, Lina Zgaga, Blánaid Daly, Mairead Harding, Therese Montgomery

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

Fluoride exposure cause colon microbiota dysbiosis by destroyed microenvironment and disturbed antimicrobial peptides expression in colon.

Pubmed Data : Environ Pollut. 2022 Jan 1 ;292(Pt B):118381. Epub 2021 Oct 18. PMID: **34673156**

Article Published Date : Dec 31, 2021

Authors : Shi-Quan Zhu, Jing Liu, Bo Han, Wen-Peng Zhao, Bian-Hua Zhou, Jing Zhao, Hong-Wei Wang

Study Type : Animal Study
Additional Links
Diseases : Dysbiosis : CK(2010) : AC(579), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

Luteolin may be a promising lead for the treatment of drug-induced gastroenteropathy.

Pubmed Data : Drug Chem Toxicol. 2020 Aug 5:1-13. Epub 2020 Aug 5. PMID: **32757682**

Article Published Date : Aug 04, 2020

Authors : Akinleye S Akinrinde, Kehinde O Soetan, Monsuru O Tijani

Study Type : Animal Study
Additional Links
Substances : Luteolin : CK(707) : AC(390)

Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Gastroprotective : CK(1653) : AC(686)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Diclofenac : CK(231) : AC(52), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

NaF-induced gut microbiota alteration mediates severe intestinal cell injury.

Pubmed Data : Ecotoxicol Environ Saf. 2024 Sep 15 ;283:116816. Epub 2024 Aug 2. PMID: **39096685**

Article Published Date : Sep 14, 2024

Authors : Haonan Huang, Yu Lin, Jinge Xin, Ning Sun, Zhifang Zhao, Hesong Wang, Lixiao Duan, Yanxi Zhou, Xingmei Liu, Jing Fang, Bo Jing, Kangcheng Pan, Yan Zeng, Dong Zeng, Hao Li, Hailin Ma, Yang Bai, Limin Wei, Xueqin Ni

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Antibiotics : CK(847) : AC(171), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

The dose-response effect of fluoride exposure on the gut microbiome.

Pubmed Data : Metabolites. 2023 Nov 17 ;13(11). Epub 2023 Nov 17. PMID: **37999254**

Article Published Date : Nov 16, 2023

Authors : Zhe Mo, Jian Wang, Xinyue Meng, Ailin Li, Zhe Li, Wenjun Que, Tuo Wang, Korto Fatti Tarnue, Xu Ma, Ying Liu, Shirui Yan, Lei Wu, Rui Zhang, Junrui Pei, Xiaofeng Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Gastrotoxic : CK(190) : AC(68)

Genotoxic (AC 3) (CK 4)

Genotoxicity of fluoride subacute exposure in rats and selenium intervention.

Pubmed Data : Chemosphere. 2021 Mar ;266:128978. Epub 2020 Nov 17. PMID: **33298328**

Article Published Date : Feb 28, 2021

Authors : Jelena Radovanović, Biljana Antonijević, Stoimir Kolarević, Sanja Milutinović-Smiljanić, Jelena Mandić, Branka Vuković-Gačić, Zorica Bulat, Marijana Ćurčić, Margareta Kračun-Kolarević, Karolina Sunjog, Jovana Kostić-Vuković, Jovana Jovanović Marić, Evica Antonijević-Miljaković, Danijela Đukić-Ćosić, Aleksandra Buha Djordjevic, Dragana Javorac, Katarina Baralić, Zoran Mandinić

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Pharmacological Actions : Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Neurotoxic : CK(2838) : AC(702)

Sodium flouride exposure during pregnancy may interfere with normal

development and increase the risk of neurological and psychiatric disorders in adulthood.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2010 Jun;14(6):507-12. PMID: **20712257**

Article Published Date : Jun 01, 2010

Authors : P Flace, V Benagiano, D Vermesan, R Sabatini, A M Inchingolo, A Inchingolo, P Auteri, G Ambrosi, A Tarullo, R Cagiano

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Huntington Disease : CK(222) : AC(103), Obsessive-Compulsive Disorder : CK(421) : AC(77), Prenatal Chemical Exposures : CK(2428) : AC(530), Schizophrenia : CK(1080) : AC(191), Tourette Syndrome : CK(207) : AC(30)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Teratogenic : CK(325) : AC(66)

Sodium fluoride promotes apoptosis by generation of reactive oxygen species in human lymphocytes.

Pubmed Data : J Toxicol Environ Health A. 2014 ;77(21):1269-80. PMID: **25268553**

Article Published Date : Dec 31, 2013

Authors : Manivannan Jothiramajayam, Sonali Sinha, Manosij Ghosh, Anish Nag, Aditi Jana, Anita Mukherjee

Study Type : In Vitro Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Genotoxic : CK(545) : AC(184)

Hepatotoxic (AC 9) (CK 24)

Effects of fluoride on DNA damage and caspase-mediated apoptosis in the liver of rats.

Pubmed Data : Biol Trace Elem Res. 2015 Aug ;166(2):173-82. Epub 2015 Feb 20. PMID: **25693680**

Article Published Date : Jul 31, 2015

Authors : Guo Hua Song, Fu Bing Huang, Ji Ping Gao, Mao Lin Liu, Wen Biao Pang, Wei bin Li, Xiao Yan Yan, Mei Jun Huo, Xia Yang

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Exposure to fluoride induces apoptosis in the liver, kidney, and heart of Xenopus laevis.

Pubmed Data : Acta Histochem. 2023 Apr ;125(3):151999. Epub 2023 Mar 9. PMID: **36905872**

Article Published Date : Mar 31, 2023

Authors : Siting Wang, Hongmei Ning, Liushuai Hua, Fei Ren, Lingli Chen, Zhisheng Ma, Rongbo Li, Yaming Ge, Zhihong Yin

Study Type : Animal Study

Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124), Renotoxic : CK(56) : AC(20)

Fluoridated tap water was associated with an increased risk of hepatic failure.

Pubmed Data : World J Pediatr. 2024 Oct ;20(10):1029-1042. Epub 2024 Jun 27. PMID: **38937407**

Article Published Date : Sep 30, 2024

Authors : Won Seok Lee, Ju Hee Kim, Boeun Han, Gi Chun Lee, Hye Ri Jung, Ye Jin Shin, Eun Kyo Ha, Eun Lee, Soonchul Lee, Man Yong Han

Study Type : Human Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Fluoride exposure induces mitochondrial damage and mitophagy via activation of the IL-17A pathway in hepatocytes.

Pubmed Data : Sci Total Environ. 2022 Jan 15 ;804:150184. Epub 2021 Sep 8. PMID: **34517333**

Article Published Date : Jan 14, 2022

Authors : Yangfei Zhao, Jinming Wang, Jianhai Zhang, Zilong Sun, Ruiyan Niu, Ram Kumar Manthari, Mohammad Mehdi Ommati, Shaolin Wang, Jundong Wang

Study Type : Animal Study, In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Mitochondrial Dysfunction : CK(618) : AC(262)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

High fluoride exposure damages kidney and liver function, triggering oxidative stress, apoptosis, and inflammation.

Pubmed Data : J Oral Biol Craniofac Res. 2024 ;14(6):735-745. Epub 2024 Oct 15. PMID: **39484005**

Article Published Date : Jan 01, 2024

Authors : Sirigala Lavanya, Kasirajan Hema Shree, Prathiba Ramani

Study Type : Review
Additional Links
Diseases : Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Lead enhances fluoride influence on apoptotic processes in the HepG2 liver cell line.

Pubmed Data : Toxicol Ind Health. 2016 Mar ;32(3):517-25. Epub 2013 Nov 5. PMID: **24193047**

Article Published Date : Feb 29, 2016

Authors : Izabela Gutowska, Irena Baranowska-Bosiacka, Ewa Siwiec, Małgorzata Szczuko, Agnieszka Kolasa, Anna Kondarewicz, Marta Rybicka, Małgorzata Dunaj-Stańczyk, Ireneusz Wiernicki, Dariusz Chlubek, Ewa Stachowska

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Lead Poisoning : CK(479) : AC(180)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)

Problem Substances : Fluoride : CK(1815) : AC(454), Lead : CK(684) : AC(227), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124)

Mitochondrial respiratory chain dysfunction mediated by ROS is a primary point of fluoride-induced damage in Hepa1-6 cells.

Pubmed Data : Environ Pollut. 2019 Dec ;255(Pt 3):113359. Epub 2019 Oct 7. PMID: **31614248**

Article Published Date : Nov 30, 2019

Authors : Hong-Wei Wang, Yan Zhang, Pan-Pan Tan, Liu-Shu Jia, Yu Chen, Bian-Hua Zhou

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Sodium fluoride administered through drinking water exhibits liver and kidney toxicity in mice.

Pubmed Data : Arch Toxicol. 2010 Sep 22. Epub 2010 Sep 22. PMID: **20859737**

Article Published Date : Sep 22, 2010

Authors : Ansuman Chattopadhyay, Santosh Podder, Soumik Agarwal, Shelley Bhattacharya

Study Type : Animal Study
Additional Links
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124), Nephrotoxic : CK(203) : AC(52)

Sodium fluoride causes oxidative stress and apoptosis in the mouse liver.

Pubmed Data : Aging (Albany NY). 2017 Jun 27 ;9(6):1623-1639. PMID: **28657544**

Article Published Date : Jun 26, 2017

Authors : Yujiao Lu, Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Hepatotoxic : CK(400) : AC(124)

Hypermethylation (AC 1) (CK 10)

Fluoride affects the epigenome of children including differentially methylated regions (DMRs) and CpG loci mapping to genes with key roles in psychiatric outcomes, social interaction, and cognition, as well as immunologic and metabolic phenotypes.

Pubmed Data : Sci Total Environ. 2024 Oct 20 ;948:174916. Epub 2024 Jul 20. PMID: **39038671**

Article Published Date : Oct 20, 2024

Authors : Anna K Ruehlmann, Kim M Cecil, Frank Lippert, Kimberly Yolton, Patrick H Ryan, Kelly J Brunst

Study Type : Human Study
Additional Links
Diseases :
Additional Keywords : Epigenetic Modification : CK(546) : AC(206)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Hypermethylation : CK(21) : AC(3)

Hypertensive (AC 2) (CK 4)

Fluoride exposure has been implicated as a potential risk factor for hypertension.

Pubmed Data : Cell Immunol. 1975 Oct ;19(2):194-200. PMID: **S0147-6513(24)00757-7**

Article Published Date : Oct 01, 1975

Authors : J L Theodor, R Senelar

Study Type : Animal Study
Additional Links
Diseases : Hypertension : CK(8603) : AC(1329)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Hypertensive : CK(266) : AC(30)

Sodium fluoride induces hypertension and cardiac complications in animals.

Pubmed Data : Environ Toxicol. 2016 Jul 5. Epub 2016 Jul 5. PMID: **27378751**

Article Published Date : Jul 04, 2016

Authors : Ademola Adetokunbo Oyagbemi, Temidayo Olutayo Omobowale, Ebunoluwa Racheal Asenuga, Abiola Olumuyiwa Adejumobi, Temitayo Olabisi Ajibade, Temitope Moses Ige, Blessing Seun Ogunpolu, Adeolu Alex Adedapo, Momoh Audu Yakubu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Hypertensive : CK(266) : AC(30), Inflammatory : CK(541) : AC(169)

Immunoreactive (AC 1) (CK 2)

High concentrations of fluoride to mice induces a decrease in CD4+ and CD8+ thymus T cells by harming TECs leading to the dysfunction of the thymus.

Pubmed Data : Biol Trace Elem Res. 2015 Aug 13. Epub 2015 Aug 13. PMID: **26267553**

Article Published Date : Aug 12, 2015

Authors : Songna Yin, Haibo Wu, Chao Song, Xin Chen, Yong Zhang

Study Type : Animal Study

Additional Links
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunoreactive : CK(261) : AC(59)

Immunosuppressive (AC 1) (CK 2)

These results show that sodium fluoride can reduce blood cellular and humoral immune function in mice.

Pubmed Data : Oncotarget. 2017 Oct 17 ;8(49):85504-85515. Epub 2017 Aug 10. PMID: **29156736**

Article Published Date : Oct 16, 2017

Authors : Hongrui Guo, Ping Kuang, Qin Luo, Hengmin Cui, Huidan Deng, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunosuppressive : CK(289) : AC(55)

Immunotoxic (AC 6) (CK 20)

Effect of fluoride exposure on different immune parameters in humans.

Pubmed Data : Immunopharmacol Immunotoxicol. 2011 Mar ;33(1):169-77. Epub 2010 Jun 10. PMID: **20536340**

Article Published Date : Feb 28, 2011

Authors : Berenice Hernández-Castro, Mónica Vigna-Pérez, Lesly Doníz-Padilla, María D Ortiz-Pérez, Esther Jiménez-Capdeville, Roberto González-Amaro, Lourdes Baranda

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Effects of prolonged fluoride exposure on innate immunity, intestinal mechanical, and immune barriers in mice.

Pubmed Data : Res Vet Sci. 2023 Nov ;164:105019. Epub 2023 Sep 14. PMID: **37729784**

Article Published Date : Oct 31, 2023

Authors : Yan Wang, Jing Xu, Hang Chen, Yuanbin Shu, Weiqi Peng, Chunxiao Lai, Ruiyang Kong, Ruiyang Lan, Lijing Huang, Jinge Xin, Ning Sun, Xueqin Ni, Yang Bai, Bangyuan Wu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Fluoride can damage the spleen of mice by perturbing Th1/Th2 cell balance.

Pubmed Data : Biol Trace Elem Res. 2021 Apr ;199(4):1493-1500. Epub 2020 Jul 24. PMID: **32710348**

Article Published Date : Mar 31, 2021

Authors : Yanyan Li, Xiaoping Du, Yangfei Zhao, Jinming Wang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Fluoride can suppress the activation of p38MAPK pathway in mice spleen lymphocytes and further influences the function of the immune system.

Pubmed Data : Biol Trace Elem Res. 2016 Oct ;173(2):333-8. Epub 2016 Feb 23. PMID: **26906276**

Article Published Date : Sep 30, 2016

Authors : Zeyu Shi, Yaqi Zhan, Junxing Zhao, Jinming Wang, Haili Ma

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Fluoride induces immunotoxicity by regulating riboflavin transport and metabolism partly through IL-17A in the spleen.

Pubmed Data : J Hazard Mater. 2024 Sep 5 ;476:135085. Epub 2024 Jul 2. PMID: **38968825**

Article Published Date : Sep 05, 2024

Authors : Yurou Qiao, Yukun Cui, Yanjia Tan, Cuicui Zhuang, Xiang Li, Yufei Yong, Xinying Zhang, Xuting Ren, Miaomiao Cai, Jie Yang, Yilin Lang, Jundong Wang, Chen Liang, Jianhai Zhang

Study Type : Animal Study
Additional Links
Diseases : Drug-Induced Nutrient Depletion: Riboflavin (B-2) : CK(2) : AC(1), Low Immune Function: Chemically-Induced : CK(4) : AC(2), Mitochondrial Dysfunction : CK(618) : AC(262), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Immunotoxic : CK(507) : AC(127)

Sodium fluoride induces apoptosis in mouse splenocytes by activating ROS-dependent NF-κB signaling.

Pubmed Data : Oncotarget. 2017 Dec 29 ;8(70):114428-114441. Epub 2017 Dec 1. PMID: **29383091**

Article Published Date : Dec 28, 2017

Authors : Huidan Deng, Ping Kuang, Hengmin Cui, Qin Luo, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Immunotoxic : CK(507) : AC(127)

Inflammatory (AC 10) (CK 26)

Association between dental fluorosis prevalence and inflammation levels in school-aged children with low-to-moderate fluoride exposure.

Pubmed Data : Environ Pollut. 2023 Mar 1 ;320:120995. Epub 2023 Jan 2. PMID: **36603756**

Article Published Date : Feb 28, 2023

Authors : Huayang Tang, Mengru Wang, Gaochun Li, Mengwei Wang, Chen Luo, Guoyu Zhou, Qian Zhao, Lixin Dong, Hongliang Liu, Yushan Cui, Li Liu, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : C-Reactive Protein : CK(3920) : AC(389), C-Reactive Protein : CK(3920) : AC(389), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Exposure to fluoride in the prenatal and neonatal period result in the increase in COX2 activity and increase in PGE2 concentration in rats brain.

Pubmed Data : Neurotoxicology. 2019 Sep ;74:81-90. Epub 2019 Jun 5. PMID: **31175943**

Article Published Date : Aug 31, 2019

Authors : Karolina Dec, Agnieszka Łukomska, Karolina Skonieczna-Żydecka, Agnieszka Kolasa-Wołosiuk, Maciej Tarnowski, Irena Baranowska-Bosiacka, Izabela Gutowska

Study Type : Animal Study
Additional Links
Diseases : Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Fluoride and arsenic exhibit cardiotoxic properties related to their pro-inflammatory effect.

Pubmed Data : Arch Toxicol. 2012 Mar 16. Epub 2012 Mar 16. PMID: **22422340**

Article Published Date : Mar 16, 2012

Authors : Yanqin Ma, Ruiyan Niu, Zilong Sun, Jinming Wang, Guangying Luo, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169), Interleukin-6 up-regulation : CK(41) : AC(10), Interleukin-8 up-regulation : CK(2) : AC(1), MCP-1 (CCL2) up-regulation : CK(7) : AC(2), P-selectin upregulation : CK(2) : AC(1), Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation : CK(4) : AC(2)

Fluoride induced tissue hypercalcemia, IL-17 mediated inflammation and apoptosis lead to cardiomyopathy.

Pubmed Data : Toxicology. 2018 Aug 1 ;406-407:44-57. Epub 2018 May 22. PMID: **29800585**

Article Published Date : Jul 31, 2018

Authors : Javed Ahsan Quadri, Saba Sarwar, Pinky, Parmita Kar, Seema Singh, Saumya Ranjan Mallick, Sudheer Arava, Tapash Chand Nag, Tara Sankar Roy, A Shariff

Study Type : Animal Study
Additional Links
Diseases : Cardiomyopathy : CK(358) : AC(160), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)

Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Fluoride promotes the secretion of inflammatory factors in microglia.

Pubmed Data : Environ Sci Pollut Res Int. 2024 Mar ;31(13):19844-19855. Epub 2024 Feb 17. PMID: **38367109**

Article Published Date : Feb 29, 2024

Authors : Qiuyi Zhang, Tao Li, Ruili Shi, Ruifang Qi, Xiaoqiong Hao, Baohui Ma

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Fluoride-induced neuron apoptosis and expressions of inflammatory factors by activating microglia in rat brain.

Pubmed Data : Mol Neurobiol. 2016 Sep ;53(7):4449-60. Epub 2015 Aug 8. PMID: **26253724**

Article Published Date : Aug 31, 2016

Authors : Nan Yan, Yan Liu, Shengnan Liu, Siqi Cao, Fei Wang, Zhengdong Wang, Shuhua Xi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169), Neurotoxic : CK(2838) : AC(702)

Sodium fluoride caused hepatic inflammatory responses and significantly inhibited the production of anti-inflammatory mediators.

Pubmed Data : Biol Trace Elem Res. 2018 Jul 30. Epub 2018 Jul 30. PMID: **30062462**

Article Published Date : Jul 29, 2018

Authors : Linlin Chen, Ping Kuang, Huan Liu, Qin Wei, Hengmin Cui, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Sodium fluoride exposure may result in increased oxidative stress and increased reaction oxygen species (ROS) production.

Pubmed Data : Toxicol Lett. 2010 Jul 1;196(2):74-9. Epub 2010 Apr 22. PMID: **20399260**

Article Published Date : Jul 01, 2010

Authors : I Gutowska, I Baranowska-Bosiacka, M Baśkiewicz, B Milo, A Siennicka, M Marchlewicz, B Wiszniewska, B Machaliński, E Stachowska

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Atherogenic : CK(25) : AC(5), Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169)

Sodium fluoride induces hypertension and cardiac complications in

animals.

Pubmed Data : Environ Toxicol. 2016 Jul 5. Epub 2016 Jul 5. PMID: **27378751**

Article Published Date : Jul 04, 2016

Authors : Ademola Adetokunbo Oyagbemi, Temidayo Olutayo Omobowale, Ebunoluwa Racheal Asenuga, Abiola Olumuyiwa Adejumobi, Temitayo Olabisi Ajibade, Temitope Moses Ige, Blessing Seun Ogunpolu, Adeolu Alex Adedapo, Momoh Audu Yakubu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Hypertensive : CK(266) : AC(30), Inflammatory : CK(541) : AC(169)

Sodium fluoride induces renal inflammatory responses by activating NF-κB signaling pathway and reducing anti-inflammatory cytokine expression.

Pubmed Data : Oncotarget. 2017 Jul 5. Epub 2017 Jul 5. PMID: **28708587**

Article Published Date : Jul 04, 2017

Authors : Qin Luo, Hengmin Cui, Huidan Deng, Ping Kuang, Huan Liu, Yujiao Lu, Jing Fang, Zhicai Zuo, Junliang Deng, Yinglun Li, Xun Wang, Ling Zhao

Study Type : Animal Study
Additional Links
Diseases : Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169)

Interleukin-1 up-regulation (AC 1) (CK 1)

Expression of SDF-1/CXCR4 and related inflammatory factors in sodium fluoride-treated hepatocytes.

Pubmed Data : PLoS One. 2024 ;19(6):e0302530. Epub 2024 Jun 21. PMID: **38905184**

Article Published Date : Dec 31, 2023

Authors : Rui Yang, Hongting Shen, Mingjun Wang, Yaqian Zhao, Shiling Zhu, Hong Jiang, Yanan Li, Guanglan Pu, Xun Chen, Ping Chen, Qing Lu, Jing Ma, Qiang Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Interleukin-1 up-regulation : CK(8) : AC(3), Interleukin-6 up-regulation : CK(41) : AC(10), Tumor necrosis factorα (TNFα) up-regulation : CK(65) : AC(11)

Interleukin-6 up-regulation (AC 2) (CK 3)

Expression of SDF-1/CXCR4 and related inflammatory factors in sodium fluoride-treated hepatocytes.

Pubmed Data : PLoS One. 2024 ;19(6):e0302530. Epub 2024 Jun 21. PMID: **38905184**

Article Published Date : Dec 31, 2023

Authors : Rui Yang, Hongting Shen, Mingjun Wang, Yaqian Zhao, Shiling Zhu, Hong Jiang, Yanan Li, Guanglan Pu, Xun Chen, Ping Chen, Qing Lu, Jing Ma, Qiang Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Interleukin-1 up-regulation : CK(8) : AC(3), Interleukin-6 up-regulation : CK(41) : AC(10), Tumor necrosis factorα (TNFα) up-regulation : CK(65) : AC(11)

Fluoride and arsenic exhibit cardiotoxic properties related to their pro-inflammatory effect.

Pubmed Data : Arch Toxicol. 2012 Mar 16. Epub 2012 Mar 16. PMID: **22422340**

Article Published Date : Mar 16, 2012

Authors : Yanqin Ma, Ruiyan Niu, Zilong Sun, Jinming Wang, Guangying Luo, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169), Interleukin-6 up-regulation : CK(41) : AC(10), Interleukin-8 up-regulation : CK(2) : AC(1), MCP-1 (CCL2) up-regulation : CK(7) : AC(2), P-selectin upregulation : CK(2) : AC(1), Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation : CK(4) : AC(2)

Interleukin-8 up-regulation (AC 1) (CK 2)

Fluoride and arsenic exhibit cardiotoxic properties related to their pro-inflammatory effect.

Pubmed Data : Arch Toxicol. 2012 Mar 16. Epub 2012 Mar 16. PMID: **22422340**

Article Published Date : Mar 16, 2012

Authors : Yanqin Ma, Ruiyan Niu, Zilong Sun, Jinming Wang, Guangying Luo, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169), Interleukin-6 up-regulation : CK(41) : AC(10), Interleukin-8 up-regulation : CK(2) : AC(1), MCP-1 (CCL2) up-regulation : CK(7) : AC(2), P-selectin upregulation : CK(2) : AC(1), Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation : CK(4) : AC(2)

MCP-1 (CCL2) up-regulation (AC 1) (CK 2)

Fluoride and arsenic exhibit cardiotoxic properties related to their pro-inflammatory effect.

Pubmed Data : Arch Toxicol. 2012 Mar 16. Epub 2012 Mar 16. PMID: **22422340**

Article Published Date : Mar 16, 2012

Authors : Yanqin Ma, Ruiyan Niu, Zilong Sun, Jinming Wang, Guangying Luo, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169), Interleukin-6 up-regulation : CK(41) : AC(10), Interleukin-8 up-regulation : CK(2) : AC(1), MCP-1 (CCL2) up-regulation : CK(7) : AC(2), P-selectin upregulation : CK(2) : AC(1), Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation : CK(4) : AC(2)

Nephrotoxic (AC 3) (CK 5)

High fluoride aggravates cadmium-mediated nephrotoxicity of renal tubular epithelial cells.

Pubmed Data : Sci Total Environ. 2024 Nov 25 ;953:175927. Epub 2024 Sep 3. PMID: **39236818**

Article Published Date : Nov 25, 2024

Authors : Dashuan Li, Chaolian Yang, Lu Sun, Zhenqin Zhao, Jiaqi Liu, Cheng Zhang, Dali Sun, Qinghai Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Apoptotic : CK(9052) : AC(7284)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Nephrotoxic : CK(203) : AC(52)

Sodium fluoride administered through drinking water exhibits liver and kidney toxicity in mice.

Pubmed Data : Arch Toxicol. 2010 Sep 22. Epub 2010 Sep 22. PMID: **20859737**

Article Published Date : Sep 22, 2010

Authors : Ansuman Chattopadhyay, Santosh Podder, Soumik Agarwal, Shelley Bhattacharya

Study Type : Animal Study
Additional Links
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124), Nephrotoxic : CK(203) : AC(52)

Sodium fluoride has adverse effects in the fetal kidney during pregnancy.

Pubmed Data : Environ Toxicol Pharmacol. 2024 Sep ;110:104545. Epub 2024 Aug 28. PMID: **39208996**

Article Published Date : Sep 01, 2024

Authors : Esaú Montañez-Rodriguez, Sabino Hazael Avila-Rojas, Ariana Guadalupe Jimenez-Dorantes, Juan Carlos León-Contreras, Rogelio Hernandez-Pando, JoséManuel Arreola-Guerra, Casimiro Gerarduzzi, María Estela Meléndez-Camargo, Luz M Del Razo, Olivier Christophe Barbier

Study Type : Animal Study
Additional Links
Diseases : Kidney Damage: Chemically-Induced : CK(542) : AC(270)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Nephrotoxic : CK(203) : AC(52)

Neurotoxic (AC 68) (CK 278)

A review of the effects of chronic fluorosis on the brain.

Pubmed Data : Ecotoxicol Environ Saf. 2022 Oct 1 ;244:114021. Epub 2022 Aug 29. PMID: **36049331**

Article Published Date : Sep 30, 2022

Authors : Chao Ren, Hui-Hua Li, Cai-Yi Zhang, Xi-Cheng Song

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Aluminium, fluoride and a combination of aluminium-fluoride treatments caused an increase in brain lipid peroxidation products and reactive oxygen species formation.

Pubmed Data : Pathophysiology. 2015 Mar ;22(1):39-48. Epub 2014 Dec 13. PMID: **25577494**

Article Published Date : Feb 28, 2015

Authors : Ibukun Dorcas Akinrinade, Adejoke Elizabeth Memudu, Olalekan Michael Ogundele, Olanrewaju Ibrahim Ajetunmobi

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain Inflammation : CK(1650) : AC(901), Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Increased Risk : CK(8492) : AC(1109), Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Aluminum appears to enhance the neurotoxic hazards caused by fluoride.

Pubmed Data : Drug Chem Toxicol. 2009 ;32(3):215-21. PMID: **19538017**

Article Published Date : Dec 31, 2008

Authors : Tanzeer Kaur, Rakesh K Bijarnia, Bimla Nehru

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum : CK(1061) : AC(349), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Autophagy may be involved in fluoride-induced learning impairment in rats.

Pubmed Data : Biol Trace Elem Res. 2020 Feb ;193(2):502-507. Epub 2019 May 20. PMID: **31111310**

Article Published Date : Jan 31, 2020

Authors : Chengzhi Zhang, Simeng Huo, Yumei Fan, Yanhui Gao, Yanmei Yang, Dianjun Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children residing in areas with higher than normal water fluoride levels demonstrated more impaired development of intelligence.

Pubmed Data : J Dent (Tehran). 2012 ;9(3):221-9. Epub 2012 Sep 30. PMID: **23119131**

Article Published Date : Dec 31, 2011

Authors : B Seraj, M Shahrabi, M Shadfar, R Ahmadi, M Fallahzadeh, H Farrokh Eslamlu, M J Kharazifard

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children who live in a fluorosis area have 5 times higher odds of developing low IQ than those who live in a nonfluorosis area or a slight fluorosis area.

Pubmed Data : Biol Trace Elem Res. 2008;126(1-3):115-20. Epub 2008 Aug 10. PMID: **18695947**

Article Published Date : Jan 01, 2008

Authors : Qin-Qing Tang, Jun Du, Heng-Hui Ma, Shao-Jun Jiang, Xiao-Jun Zhou

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children with fluorosis in coal-burning areas had impaired IQ and obviously had impaired verbal intelligence quotient.

Pubmed Data : Biol Trace Elem Res. 2021 Feb ;199(2):482-489. Epub 2020 May 3. PMID: **32363519**

Article Published Date : Jan 31, 2021

Authors : Didong Lou, Yan Luo, Jing Liu, Dan Zheng, Rongrong Ma, Fangping Chen, Yanni Yu, Zhizhong Guan

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Children's growth and intelligence can be adversely affected by fluoride and arsenic exposure in drinking water.

Pubmed Data : Environ Health Perspect. 2007 Apr;115(4):643-7. Epub 2007 Jan 9. PMID: **17450237**

Article Published Date : Apr 01, 2007

Authors : San-Xiang Wang, Zheng-Hui Wang, Xiao-Tian Cheng, Jun Li, Zhi-Ping Sang, Xiang-Dong Zhang, Ling-Ling Han, Xiao-Yan Qiao, Zhao-Ming Wu, Zhi-Quan Wang

Study Type : Human Study

Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Children: Impaired Growth : CK(50) : AC(4), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic exposure to fluoride affects GSH level and NOX4 expression.

Pubmed Data : Biomolecules. 2020 Mar 9 ;10(3). Epub 2020 Mar 9. PMID: **32182821**

Article Published Date : Mar 08, 2020

Authors : Karolina Dec, Agnieszka Łukomska, Karolina Skonieczna-Żydecka, Karolina Jakubczyk, Maciej Tarnowski, Anna Lubkowska, Irena Baranowska-Bosiacka, Daniel Styburski, Marta Skórka-Majewicz, Dominika Maciejewska, Izabela Gutowska

Study Type : Animal Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(12159) : AC(4162), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic exposure to high levels of fluoride in water was observed to be associated with lower intelligence quotient.

Pubmed Data : Iran J Public Health. 2013 Aug ;42(8):813-8. PMID: **26056634**

Article Published Date : Jul 31, 2013

Authors : Ramesh Nagarajappa, Piyush Pujara, Archana J Sharda, Kailash Asawa, Mridula Tak, Pankaj Aapaliya, Nikhil Bhanushali

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Chronic fluoride exposure induces neuronal apoptosis and impairs neurogenesis and synaptic plasticity.

Pubmed Data : Chemosphere. 2019 Jan ;214:430-435. Epub 2018 Sep 17. PMID: **30273876**

Article Published Date : Dec 31, 2018

Authors : Pei Jiang, Gongying Li, Xueyuan Zhou, Changshui Wang, Yi Qiao, Dehua Liao, Dongmei Shi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Circulating levels of autophagy markers were low in children with higher fluoride body burden and lower intelligence quotient scores.

Pubmed Data : Toxicol Appl Pharmacol. 2019 Sep 1 ;378:114608. Epub 2019 Jun 5. PMID: **31173788**

Article Published Date : Aug 31, 2019

Authors : Guoyu Zhou, Sha Tang, Lu Yang, Qiang Niu, Jingwen Chen, Tao Xia, Sumei Wang, Mengwei Wang, Qian Zhao, Ling Liu, Pei Li, Lixin Dong, Kedi Yang, Shun Zhang, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Cognitive decline of rats with chronic fluorosis is associated with alterations in hippocampal calpain signaling.

Pubmed Data : Biol Trace Elem Res. 2020 Oct ;197(2):495-506. Epub 2019 Dec 3. PMID: **31797207**

Article Published Date : Sep 30, 2020

Authors : Olga V Nadei, Irina A Khvorova, Natalia I Agalakova

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Combined effect of arsenic and fluoride at environmentally relevant concentrations in zebrafish (Danio rerio) brain.

Pubmed Data : Chemosphere. 2021 Apr ;269:128678. Epub 2020 Oct 21. PMID: **33127104**

Article Published Date : Mar 31, 2021

Authors : Paritosh Mondal, Pallab Shaw, Arpan Dey Bhowmik, Arindam Bandyopadhyay, Muthammal Sudarshan, Anindita Chakraborty, Ansuman Chattopadhyay

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Concentration of Fluoride in the ingested water was significantly associated with the IQ of children.

Pubmed Data : J Int Soc Prev Community Dent. 2017 ;7(5):252-258. Epub 2017 Sep 18. PMID: **29026697**

Article Published Date : Dec 31, 2016

Authors : Priyanka Razdan, Basavaraj Patthi, Jishnu Krishna Kumar, Nikhil Agnihotri, Prajakta Chaudhari, Monika Prasad

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Curcumin attenuates neurotoxicity induced by fluoride: An in vivo evidence.

Pubmed Data : Pharmacogn Mag. 2014 Jan ;10(37):61-5. PMID: **24696547**

Article Published Date : Dec 31, 2013

Authors : Chhavi Sharma, Pooja Suhalka, Piyu Sukhwal, Neha Jaiswal, Maheep Bhatnagar

Study Type : Animal Study
Additional Links
Substances : Curcumin : CK(6902) : AC(3215)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Developmental fluoride neurotoxicity: an updated review.

Pubmed Data : Environ Health. 2019 Dec 19 ;18(1):110. Epub 2019 Dec 19. PMID: **31856837**

Article Published Date : Dec 18, 2019

Authors : Philippe Grandjean

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Early exposure to fluoride may have neurotoxic effects on neurodevelopment affecting behavioral, cognitive and psychosomatic symptoms related to ADHD diagnosis.

Pubmed Data : Medicina (Kaunas). 2023 Apr 19 ;59(4). Epub 2023 Apr 19. PMID: **37109754**

Article Published Date : Apr 18, 2023

Authors : Gianluca Fiore, Federica Veneri, Rosaria Di Lorenzo, Luigi Generali, Marco Vinceti, Tommaso Filippini

Study Type : Review
Additional Links
Diseases : Attention Deficit Disorder with Hyperactivity : CK(633) : AC(84), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effect of fluoride exposure on mRNA expression of cav1.2 and calcium signal pathway apoptosis regulators in PC12 cells.

Pubmed Data : Environ Toxicol Pharmacol. 2017 Sep ;54:74-79. Epub 2017 Jun 30. PMID: **28697452**

Article Published Date : Aug 31, 2017

Authors : Qiuxia Liao, Rui Zhang, Xiaoyu Wang, Weiwei Nian, Lulu Ke, Wei Ouyang, Zigui Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Effect of hesperidin on fluoride-induced neurobehavioral and biochemical changes in rats.

Pubmed Data : J Biochem Mol Toxicol. 2020 Nov ;34(11):e22575. Epub 2020 Jul 5. PMID: **32627286**

Article Published Date : Oct 31, 2020

Authors : Pawan Jaiswal, Mukesh Mandal, Awanish Mishra

Study Type : Animal Study
Additional Links
Substances : Hesperidin : CK(845) : AC(358)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effects of fluoride on synapse morphology and myelin damage in mouse hippocampus.

Pubmed Data : Chemosphere. 2018 Mar ;194:628-633. Epub 2017 Dec 6. PMID: **29241138**

Article Published Date : Feb 28, 2018

Authors : Ruiyan Niu, Huijuan Chen, Ram Kumar Manthari, Zilong Sun, Jinming Wang, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Effects of neuron autophagy induced by arsenic and fluoride on spatial learning and memory in offspring rats.

Pubmed Data : Chemosphere. 2022 Dec ;308(Pt 2):136341. Epub 2022 Sep 7. PMID: **36087721**

Article Published Date : Nov 30, 2022

Authors : Qiuyi Zhao, Weizhe Pan, Jia Li, Shengnan Yu, Yan Liu, Xiaoli Zhang, Ruodi Qu, Qian Zhang, Ben Li, Xiaoyan Yan, Xuefeng Ren, Yulan Qiu

Study Type : Animal Study
Additional Links
Diseases : Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514), Neurodegenerative Diseases : CK(12159) : AC(4162), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Excessive fluoride and aluminium intake induces the progression of cell death which inhibit AChE activities and trigger the release of lysosomal and cell cycle proteins.

Pubmed Data : Pathophysiology. 2015 Jun ;22(2):105-15. Epub 2015 Apr 2. PMID: **25863844**

Article Published Date : May 31, 2015

Authors : Ibukun Dorcas Akinrinade, Adejoke Elizabeth Memudu, Olalekan Michael Ogundele

Study Type : Animal Study
Additional Links
Diseases : Neurodegenerative Diseases : CK(12159) : AC(4162)
Additional Keywords : Increased Risk : CK(8492) : AC(1109)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Excessive lysosomal stress response and consequently impaired autophagy contribute to fluoride-induced developmental neurotoxicity.

Pubmed Data : Biol Trace Elem Res. 2023 Sep ;201(9):4472-4483. Epub 2022 Dec 5. PMID: **36464725**

Article Published Date : Aug 31, 2023

Authors : Wanjing Xu, Zeyu Hu, Yanling Tang, Jingjing Zhang, Shangzhi Xu, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Developmental Disorder: Children : CK(148) : AC(19), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exercise alleviates fluoride-induced learning and memory impairment.

Pubmed Data : Biol Trace Elem Res. 2024 Jan 20. Epub 2024 Jan 20. PMID: **38244175**

Article Published Date : Jan 19, 2024

Authors : Lei Chai, Qiqi Cao, Ke Liu, Run Zhu, Hao Li, Yanghuan Yu, Jixiang Wang, Ruiyan Niu, Ding Zhang, Bo Yang, Mohammad Mehdi Ommati, Zilong Sun

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Therapeutic Actions : Exercise : CK(6247) : AC(999)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to fluoride and arsenic in drinking water is associated with decreased intelligence in children.

Pubmed Data : Cad Saude Publica. 2007;23 Suppl 4:S579-87. PMID: **18038039**

Article Published Date : Jan 01, 2007

Authors : Diana Rocha-Amador, Maria Elena Navarro, Leticia Carrizales, Raúl Morales, Jaqueline Calderón

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Exposure to high levels of fluoride may adversely influence children's intelligence development.

Pubmed Data : Zhongguo Dang Dai Er Ke Za Zhi. 2008 Dec;10(6):723-5. PMID: **19102839**

Article Published Date : Dec 01, 2008

Authors : Ming Liu, Cong Qian

Study Type : Meta Analysis
Additional Links
Diseases : Childhood Cognitive Disorders : CK(316) : AC(27), Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Extract of Ginkgo biloba leaves attenuates neurotoxic damages from high levels of fluoride.

Pubmed Data : J Trace Elem Med Biol. 2022 Sep 30 ;75:127088. Epub 2022 Sep 30. PMID: **36265321**

Article Published Date : Sep 29, 2022

Authors : Jie Xiang, Yan-Lin Ma, Jian Zou, Xiao-Xiao Zeng, Xiao Xiao, Yan-Long Yu, Yang-Ting Dong, Long-Yan Ran, Xiao-Lan Qi, Wei Hong, Yan-Hui Gao, Zhi-Zhong Guan

Study Type : Animal Study, In Vitro Study
Additional Links
Substances : Ginkgo biloba : CK(2025) : AC(644)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride and arsenic exposure impairs learning and memory and decreases mGluR5 expression in the hippocampus and cortex in rats.

Pubmed Data : PLoS One. 2014 ;9(4):e96041. Epub 2014 Apr 23. PMID: **24759735**

Article Published Date : Dec 31, 2013

Authors : Shoufang Jiang, Jing Su, Sanqiao Yao, Yanshu Zhang, Fuyuan Cao, Fei Wang, Huihui Wang, Jun Li, Shuhua Xi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155), Memory Disorders : CK(1570) : AC(514)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)

Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride exposure decreased neurite formation on cerebral cortical neurons of SD rats in vitro.

Pubmed Data : Environ Sci Pollut Res Int. 2021 Oct ;28(37):50975-50982. Epub 2021 May 11. PMID: **33977427**

Article Published Date : Sep 30, 2021

Authors : Hongmei Ning, Chong Li, Zhihong Yin, Dongfang Hu, Yaming Ge, Lingli Chen

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride exposure disrupts the cytoskeletal arrangement and ATP synthesis of HT-22 cell.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Apr 1 ;254:114718. Epub 2023 Mar 10. PMID: **36950989**

Article Published Date : Mar 31, 2023

Authors : Lingli Chen, Penghuan Jia, Yuye Liu, Rui Wang, Zhihong Yin, Dongfang Hu, Hongmei Ning, Yaming Ge

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride exposure induces neurotoxicity, leading to cell damage and emotional dysfunction, mitigated by physical activity in mice.

Pubmed Data : Biol Trace Elem Res. 2024 Oct 31. Epub 2024 Oct 31. PMID: **39480623**

Article Published Date : Oct 31, 2024

Authors : Mengjie Qi, Yue Wu, Han Shi, Jie Liu, Run Zhu, Jixiang Wang, Amna Rafique, Bo Yang, Ruiyan Niu, Ding Zhang, Zilong Sun

Study Type : Animal Study
Additional Links
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride in drinking water may produce developmental neurotoxicity

Pubmed Data : Neurotoxicol Teratol. 2015 ;47:96-101. Epub 2014 Nov 8. PMID: **25446012**

Article Published Date : Dec 31, 2014

Authors : Anna L Choi, Ying Zhang, Guifan Sun, David C Bellinger, Kanglin Wang, Xiao Jing Yang, Jin Shu Li, Quanmei Zheng, Yuanli Fu, Philippe Grandjean

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodevelopmental Disorders : CK(470) : AC(85)
Additional Keywords : Dose Response : CK(1769) : AC(700)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride in drinking water was negatively associated with cognitive function.

Pubmed Data : Neurotoxicol Teratol. 2023 ;100:107293. Epub 2023 Sep 9. PMID: **37690675**

Article Published Date : Dec 31, 2022

Authors : Tewodros Rango Godebo, Marc Jeuland, Redda Tekle-Haimanot, Biniyam Alemayehu, Arti Shankar, Amy Wolfe, Nati Phan

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride induced neurobehavioral impairments in experimental animals.

Pubmed Data : Biol Trace Elem Res. 2023 Mar ;201(3):1214-1236. Epub 2022 Apr 30. PMID: **35488996**

Article Published Date : Feb 28, 2023

Authors : Harsheema Ottappilakkil, Srija Babu, Satheeswaran Balasubramanian, Suryaa Manoharan, Ekambaram Perumal

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride levels in the 100-200 ppm range results in neurotoxicity in rats.

Pubmed Data : Biol Trace Elem Res. 2010 Jul 24. Epub 2010 Jul 24. PMID: **20658207**

Article Published Date : Jul 24, 2010

Authors : P Mahaboob Basha, Puja Rai, Shabana Begum

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Multi-Generational Effects : CK(4) : AC(2)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride may go through the blood-brain barrier and accumulate in rat hippocampus, and inhibit the activity of cholinesterase.

Pubmed Data : Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi. 2003 Apr ;21(2):102-4. PMID: **14761523**

Article Published Date : Apr 01, 2003

Authors : Jin-xia Zhai, Zhi-yong Guo, Chuan-lai Hu, Qi-nan Wang, Qi-xing Zhu

Study Type : Animal Study
Additional Links
Diseases : Blood-Brain-Barrier Disorders : CK(31) : AC(18), Brain Injury: Hippocampal Damage : CK(44) : AC(21)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Acetylcholinesterase inhibitor (xenobiotic) : CK(8) : AC(4), Neurotoxic : CK(2838) : AC(702)

Fluoride showed potent neuronal toxicity as evidenced by alterations of various molecular markers.

Pubmed Data : J Trace Elem Med Biol. 2024 Aug 23 ;86:127511. Epub 2024 Aug 23. PMID: **39216433**

Article Published Date : Aug 22, 2024

Authors : Sachindra Kumar, Ravindra Shantakumar Swamy, Rashmi Bhushan, Vishal Chhabra, Smita Shenoy, Krishna Murti, Shubhankar Kumar Singh, Nitesh Kumar

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride-induced alterations of synapse-related proteins in the cerebral cortex of ICR offspring mouse brain.

Pubmed Data : Chemosphere. 2018 Jun ;201:874-883. Epub 2018 Feb 27. PMID: **29567471**

Article Published Date : May 31, 2018

Authors : Yaming Ge, Lingli Chen, Zhihong Yin, Xiaochao Song, Tao Ruan, Liushuai Hua, Junwei Liu, Jundong Wang, Hongmei Ning

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride-induced cortical toxicity in rats: the role of excessive endoplasmic reticulum stress and its mediated defective autophagy.

Pubmed Data : Biol Trace Elem Res. 2023 Aug ;201(8):3850-3860. Epub 2022 Nov 3. PMID: **36327065**

Article Published Date : Jul 31, 2023

Authors : Jingjing Zhang, Yanling Tang, Wanjing Xu, Zeyu Hu, Shangzhi Xu, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Fluoride-induced neuron apoptosis and expressions of inflammatory factors by activating microglia in rat brain.

Pubmed Data : Mol Neurobiol. 2016 Sep ;53(7):4449-60. Epub 2015 Aug 8. PMID: **26253724**

Article Published Date : Aug 31, 2016

Authors : Nan Yan, Yan Liu, Shengnan Liu, Siqi Cao, Fei Wang, Zhengdong Wang, Shuhua Xi

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Inflammatory : CK(541) : AC(169), Neurotoxic : CK(2838) : AC(702)

Genotoxicity of fluoride subacute exposure in rats and selenium intervention.

Pubmed Data : Chemosphere. 2021 Mar ;266:128978. Epub 2020 Nov 17. PMID: **33298328**

Article Published Date : Feb 28, 2021

Authors : Jelena Radovanović, Biljana Antonijević, Stoimir Kolarević, Sanja Milutinović-Smiljanić, Jelena Mandić, Branka Vuković-Gačić, Zorica Bulat, Marijana Ćurčić, Margareta Kračun-Kolarević, Karolina Sunjog, Jovana Kostić-Vuković, Jovana Jovanović Marić, Evica Antonijević-Miljaković, Danijela Đukić-Ćosić, Aleksandra Buha Djordjevic, Dragana Javorac, Katarina Baralić, Zoran Mandinić

Study Type : In Vitro Study
Additional Links
Substances : Selenium : CK(1706) : AC(389)
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Spleen Damage: Chemically Induced : CK(2) : AC(9)
Pharmacological Actions : Genoprotective : CK(522) : AC(203)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Neurotoxic : CK(2838) : AC(702)

High fluoride exposure has multigenerational and cumulative adverse effects on thyroid status, brain health and learning memory in rats.

Pubmed Data : Biol Trace Elem Res. 2011 Jul 14. Epub 2011 Jul 14. PMID: **21755305**

Article Published Date : Jul 14, 2011

Authors : Piler Mahaboob Basha, Puja Rai, Shabana Begum

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Hypothyroidism : CK(847) : AC(148), Prenatal Chemical Exposures : CK(2428) : AC(530), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

High iodine and high fluorine adversely effects the intelligence and health of children.

Pubmed Data : Zhonghua Liu Xing Bing Xue Za Zhi. 1994 Oct;15(5):296-8. PMID: **7859263**

Article Published Date : Oct 01, 1994

Authors : Y Yang, X Wang, X Guo

Study Type : Human Study
Additional Links
Diseases : Childhood Chemical Exposures : CK(165) : AC(17), Childhood Cognitive Disorders : CK(316) : AC(27), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27), TSH: Elevated : CK(20) : AC(2)
Problem Substances : Fluoride : CK(1815) : AC(454), Iodine: Excess : CK(10) : AC(1)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Human cultured IMR-32 neuronal-like and U87 glial-like cells have different patterns of toxicity under fluoride exposure.

Pubmed Data : PLoS One. 2021 ;16(6):e0251200. Epub 2021 Jun 17. PMID: **34138870**

Article Published Date : Dec 31, 2020

Authors : Bruna Puty, Leonardo Oliveira Bittencourt, Iago Cesar Nogueira, Marília Afonso Rabelo Buzalaf, Edivaldo Herculano Oliveira, Rafael Rodrigues Lima

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Impacts of fluoride neurotoxicity and mitochondrial dysfunction on cognition and mental health.

Pubmed Data : Int J Environ Res Public Health. 2021 Dec 7 ;18(24). Epub 2021 Dec 7. PMID: **34948493**

Article Published Date : Dec 06, 2021

Authors : Emily A Adkins, Kelly J Brunst

Study Type : Review
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Inorganic fluoride and functions of brain.

Pubmed Data : Crit Rev Toxicol. 2020 Jan ;50(1):28-46. Epub 2020 Feb 19. PMID: **32073339**

Article Published Date : Dec 31, 2019

Authors : N I Agalakova, O V Nadei

Study Type : Review
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Iodine status modifies the association between fluoride exposure in pregnancy and preschool boys' intelligence.

Pubmed Data : Nutrients. 2022 Jul 16 ;14(14). Epub 2022 Jul 16. PMID: **35889877**

Article Published Date : Jul 15, 2022

Authors : Carly V Goodman, Meaghan Hall, Rivka Green, Jonathan Chevrier, Pierre Ayotte, Esperanza Angeles Martinez-Mier, Taylor McGuckin, John Krzeczkowski, David Flora, Richard Hornung, Bruce Lanphear, Christine Till

Study Type : Human Study
Additional Links
Substances : Iodine : CK(182) : AC(32)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Iodine Deficiency : CK(110) : AC(18), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Low glucose utilization and neurodegenerative changes caused by sodium fluoride exposure in rat's developmental brain.

Pubmed Data : Neuromolecular Med. 2014 Mar ;16(1):94-105. Epub 2013 Aug 28. PMID: **23982469**

Article Published Date : Feb 28, 2014

Authors : Chunyang Jiang, Shun Zhang, Hongliang Liu, Zhizhong Guan, Qiang Zeng, Cheng Zhang, Rongrong Lei, Tao Xia, Zhenglun Wang, Lu Yang, Yihu Chen, Xue Wu, Xiaofei Zhang, Yushan Cui, Linyu Yu, Aiguo Wang

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Memory Disorders : CK(1570) : AC(514)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Low-to-moderate fluoride exposure was associated with dysfunction of cholinergic system for children.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Nov 20 ;228:112959. Epub 2021 Nov 20. PMID: **34808511**

Article Published Date : Nov 19, 2021

Authors : Sumei Wang, Qian Zhao, Gaochun Li, Mengwei Wang, Hongliang Liu, Xingchen Yu, Jingwen Chen, Pei Li, Lixin Dong, Guoyu Zhou, Yushan Cui, Mengru Wang, Li Liu, Aiguo Wang

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Learning disorders : CK(517) : AC(155)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Maternal exposure to drinking water throughout pregnancy fluoridated at the level of 0.7 mg/L was associated with poorer inhibitory control and cognitive flexibility.

Pubmed Data : Sci Total Environ. 2023 Sep 15 ;891:164322. Epub 2023 May 25. PMID: **37236475**

Article Published Date : Sep 14, 2023

Authors : Deborah Dewey, Gillian England-Mason, Henry Ntanda, Andrea J Deane, Mandakini Jain, Nadia Barnieh, Gerald

F Giesbrecht, Nicole Letourneau,

Study Type : Human Study
Additional Links
Diseases : Developmental Disorder: Children : CK(148) : AC(19), Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Naringin alleviates fluoride-induced neurological impairment.

Pubmed Data : Sci Total Environ. 2024 Oct 22:177073. Epub 2024 Oct 22. PMID: **39447898**

Article Published Date : Oct 21, 2024

Authors : Yuhui Du, Guoqing Wang, Bin Liu, Meng Guo, Xi Yan, Ming Dou, Fangfang Yu, Yue Ba, Guoyu Zhou

Study Type : Animal Study
Additional Links
Substances : Citrus naringin : CK(440) : AC(245)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

PRKAA1 induces aberrant mitophagy in a PINK1/Parkin-dependent manner, contributing to fluoride-induced developmental neurotoxicity.

Pubmed Data : Ecotoxicol Environ Saf. 2023 Apr 15 ;255:114772. Epub 2023 Mar 14. PMID: **36924562**

Article Published Date : Apr 14, 2023

Authors : Yanling Tang, Jingjing Zhang, Zeyu Hu, Wanjing Xu, Panpan Xu, Yue Ma, Hengrui Xing, Qiang Niu

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Neurodegenerative Diseases : CK(12159) : AC(4162), Neurodevelopmental Disorders : CK(470) : AC(85)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Neurotoxic : CK(2838) : AC(702)

Potential role of fluoride in the etiopathogenesis of Alzheimer's disease.

Pubmed Data : Int J Mol Sci. 2018 Dec 9 ;19(12). Epub 2018 Dec 9. PMID: **30544885**

Article Published Date : Dec 08, 2018

Authors : Marta Goschorska, Irena Baranowska-Bosiacka, Izabela Gutowska, Emilia Metryka, Marta Skórka-Majewicz, Dariusz Chlubek

Study Type : Review
Additional Links
Diseases : Alzheimer's Disease : CK(4948) : AC(2148), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Prolonged fluoride exposure alters neurotransmission and oxidative stress in the zebrafish brain.

Pubmed Data : Neurotoxicology. 2022 Mar ;89:92-98. Epub 2022 Jan 20. PMID: **35065950**

Article Published Date : Feb 28, 2022

Authors : Eduardo Ronconi Dondossola, Suzielen Damin Pacheco, Sulingue Casagrande Visentin, Niuany Viel Mendes, Samira Leila Baldin, Henrique Teza Bernardo, Rahisa Scussel, Eduardo Pacheco Rico

Study Type : Animal Study
Additional Links

Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Rats exposed to low iodine and high fluoride exhibit changes in brain proteins that may be associated with neurotoxicity.

Pubmed Data : Arch Toxicol. 2010 Apr 3. Epub 2010 Apr 3. PMID: **20364248**

Article Published Date : Apr 03, 2010

Authors : Yaming Ge, Ruiyan Niu, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Prenatal Nutrition: Learning/Intelligence of Offspring : CK(116) : AC(14)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Rutin attenuates neurobehavioral deficits, oxidative stress, neuro-inflammation and apoptosis in fluoride treated rats.

Pubmed Data : Neurosci Lett. 2018 Aug 24 ;682:92-99. Epub 2018 Jun 13. PMID: **29908257**

Article Published Date : Aug 23, 2018

Authors : Kpobari W Nkpaa, Godspower I Onyeso

Study Type : Animal Study
Additional Links
Substances : Rutin : CK(460) : AC(221)
Diseases : Inflammation : CK(15536) : AC(5279), Lipid Peroxidation : CK(1901) : AC(774), Oxidative Stress : CK(13443) : AC(5499)
Pharmacological Actions : Anti-Apoptotic : CK(4942) : AC(3051), Antioxidants : CK(32218) : AC(14161), Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

School children residing in area with higher than normal water fluoride level demonstrated more impaired development of intelligence.

Pubmed Data : J Indian Soc Pedod Prev Dent. 2015 ;33(4):307-11. PMID: **26381633**

Article Published Date : Dec 31, 2014

Authors : Shibu Thomas Sebastian, S Sunitha

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Intelligence Quotient (IQ): Low/Impaired : CK(312) : AC(27)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Sirt3-mediated mitochondrial dysfunction is involved in fluoride-induced cognitive deficits.

Pubmed Data : Food Chem Toxicol. 2021 Dec ;158:112665. Epub 2021 Nov 12. PMID: **34780879**

Article Published Date : Nov 30, 2021

Authors : Dongmei Wang, Luyang Cao, Shunji Pan, Gang Wang, Lewei Wang, Ningyao Cao, Xueqin Hao

Study Type : Animal Study
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Cognitive Decline/Dysfunction : CK(5061) : AC(1005)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Sodium fluoride affects zebrafish behaviour and alters mRNA expressions of biomarker genes in the brain.

Pubmed Data : Environ Toxicol Pharmacol. 2015 Sep ;40(2):352-9. Epub 2015 Jul 14. PMID: **26245810**

Article Published Date : Aug 31, 2015

Authors : Debdip Mukhopadhyay, Pooja Priya, Ansuman Chattopadhyay

Study Type : Animal Study
Additional Links
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Synergistic oxidative impact of aluminum chloride and sodium fluoride exposure during early stages of brain development.

Pubmed Data : Environ Sci Pollut Res Int. 2019 Feb 20. Epub 2019 Feb 20. PMID: **30788699**

Article Published Date : Feb 19, 2019

Authors : Amal A Kinawy

Study Type : Animal Study
Additional Links
Diseases : Aluminum Toxicity : CK(685) : AC(308), Brain: Oxidative Stress : CK(635) : AC(345), Fluoride Toxicity : CK(1389) : AC(376)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Aluminum Chloride : CK(171) : AC(92), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

Taurine protected against sodium fluoride induced neurotoxicity.

Pubmed Data : Chem Biol Interact. 2016 Nov 11 ;261:1-10. Epub 2016 Nov 11. PMID: **27840156**

Article Published Date : Nov 10, 2016

Authors : Isaac A Adedara, Amos O Abolaji, Umar F Idris, Bolanle F Olabiyi, Esther M Onibiyo, TeminiJesu D Ojuade, Ebenezer O Farombi

Study Type : Animal Study
Additional Links
Substances : Taurine : CK(246) : AC(71)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Neuroprotective Agents : CK(17667) : AC(7641)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

The present study reveals that exposure to fluoride in early stages of rat development leads to impairment of memory in young offspring.

Pubmed Data : Int J Toxicol. 2019 ;38(5):405-414. Epub 2019 Jun 20. PMID: **31220985**

Article Published Date : Dec 31, 2018

Authors : Mariana Bartos, Fernanda Gumilar, Cristina E Gallegos, Cristina Bras, Sergio Dominguez, Liliana M Cancela, Alejandra Minetti

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Oxidative Stress : CK(13443) : AC(5499), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

The toxic effects of fluoride on the central nervous system may be related to the activition of microglia cells.

Pubmed Data : Mediators Inflamm. 2012 ;2012:102954. Epub 2012 Aug 13. PMID: **22933830**

Article Published Date : Jan 01, 2012

Authors : Xi Shuhua, Liu Ziyou, Yan Ling, Wang Fei, Guifan Sun

Study Type : In Vitro Study
Additional Links
Diseases : Brain: Microglial Activation : CK(192) : AC(114), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702), Oxidant : CK(646) : AC(246)

These findings indicate that chronic consumption of high concentrations of fluoride leads to a decrease in nerve conduction velocity.

Pubmed Data : Int J Toxicol. 2024 Nov 6:10915818241297082. Epub 2024 Nov 6. PMID: **39501888**

Article Published Date : Nov 05, 2024

Authors : Fernanda Marlen Enríquez-Sánchez, MiguelÁngel López-Vázquez, María Esther Olvera-Cortés, Liliana Valdez-Jiménez, Paola Trinidad Villalobos-Gutiérrez, María Isabel Pérez-Vega

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702), Neurotransmitter Interference : CK(32) : AC(8)

These findings provide deeper insights into roles of sodium fluoride in neuron damage.

Pubmed Data : Chemosphere. 2017 Jun 30 ;185:589-594. Epub 2017 Jun 30. PMID: **28719878**

Article Published Date : Jun 29, 2017

Authors : Lingli Chen, Hongmei Ning, Zhihong Yin, Xiaochao Song, Yongchao Feng, Hao Qin, Yi Li, Jundong Wang, Yaming Ge, Wenkui Wang

Study Type : In Vitro Study
Additional Links
Additional Keywords : Dose Response : CK(1769) : AC(700)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

This study has empirically demonstrated an association between more widespread exposure to fluoridated water and increased ADHD prevalence in U.S. children and adolescents.

Pubmed Data : Environ Health. 2015 ;14(1):17. Epub 2015 Feb 27. PMID: **25890329**

Article Published Date : Dec 31, 2014

Authors : Ashley J Malin, Christine Till

Study Type : Human Study
Additional Links
Diseases : Attention Deficit Hyperactivity Disorder : CK(535) : AC(67)
Additional Keywords : Toxic Substance Synergy : CK(29) : AC(7)
Problem Substances : Lead : CK(684) : AC(227), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702)

This study suggests that excitotoxicity may be the central mechanism of autism spectrum disorders and that excitotoxins like aluminum, fluoride, and mercury may exacerbate excitotoxicity.

Pubmed Data : Curr Med Chem. 2009 ;16(2):157-70. PMID: **19149568**

Article Published Date : Jan 01, 2009

Authors : R L Blaylock, A Strunecka

Study Type : Review
Additional Links
Diseases : Autism : CK(942) : AC(162), Autism Spectrum Disorders : CK(3676) : AC(557), Brain: Microglial Activation : CK(192) : AC(114), Heavy Metal Toxicity : CK(2713) : AC(1019)
Additional Keywords : Heavy Metals and Autism : CK(89) : AC(15), Vaccine Research : CK(571) : AC(113)
Problem Substances : Aluminum : CK(1061) : AC(349), Fluoride : CK(1815) : AC(454), Mercury : CK(885) : AC(213)
Adverse Pharmacological Actions : Excitotoxic : CK(40) : AC(10), Neurotoxic : CK(2838) : AC(702)

Neurotransmitter Interference (AC 1) (CK 2)

These findings indicate that chronic consumption of high concentrations of fluoride leads to a decrease in nerve conduction velocity.

Pubmed Data : Int J Toxicol. 2024 Nov 6:10915818241297082. Epub 2024 Nov 6. PMID: **39501888**

Article Published Date : Nov 05, 2024

Authors : Fernanda Marlen Enríquez-Sánchez, MiguelÁngel López-Vázquez, María Esther Olvera-Cortés, Liliana Valdez-Jiménez, Paola Trinidad Villalobos-Gutiérrez, María Isabel Pérez-Vega

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702), Neurotransmitter Interference : CK(32) : AC(8)

Oxidant (AC 9) (CK 12)

"Decreased in vitro fertility in male rats exposed to fluoride-induced oxidative stress damage and mitochondrial transmembrane potential loss."

Pubmed Data : Toxicol Appl Pharmacol. 2008 Aug 1 ;230(3):352-7. Epub 2008 Mar 28. PMID: **18455746**

Article Published Date : Aug 01, 2008

Authors : Jeannett A Izquierdo-Vega, Manuel Sánchez-Gutiérrez, Luz María Del Razo

Study Type : Animal Study
Additional Links
Diseases : Infertility: Male : CK(1668) : AC(424), Oxidative Stress : CK(13443) : AC(5499), Sperm Quality: Low : CK(611) : AC(121)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Anti-Fertility : CK(112) : AC(21), Oxidant : CK(646) : AC(246)

Focus on cognitive impairment induced by excessive fluoride: An update review.

Pubmed Data : Neuroscience. 2024 Oct 18 ;558:22-29. Epub 2024 Aug 11. PMID: **39137871**

Article Published Date : Oct 18, 2024

Authors : Yuhang Zhang, Yanhui Gao, Xiaona Liu

Study Type : Review
Additional Links
Diseases : Cognitive Decline/Dysfunction : CK(5061) : AC(1005), Mitochondrial Dysfunction : CK(618) : AC(262), Neurotoxicity : CK(49) : AC(27), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Oxidant : CK(646) : AC(246)

Quercetin has a protective effect against sodium fluoride induced oxidative stress in rat's heart.

Pubmed Data : Food Funct. 2012 Feb 8. Epub 2012 Feb 8. PMID: **22314573**

Article Published Date : Feb 08, 2012

Authors : Seyed Fazel Nabavi, Seyed Mohammad Nabavi, Morteza Mirzaei, Akbar Hajizadeh Moghaddam

Study Type : Animal Study
Additional Links
Substances : Quercetin : CK(1864) : AC(847)
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Pharmacological Actions : Antioxidants : CK(32218) : AC(14161), Cardioprotective : CK(8685) : AC(2877)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Oxidant : CK(646) : AC(246)

Sodium fluoride causes oxidative stress and apoptosis in cementoblasts.

Pubmed Data : Chem Biol Interact. 2018 Aug 18 ;294:34-39. Epub 2018 Aug 18. PMID: **30130527**

Article Published Date : Aug 17, 2018

Authors : Jing Ni, Yiming Li, Wu Zhang, Rong Shu, Zhe Zhong

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Gingivitis : CK(595) : AC(86)
Additional Keywords : Risk Factors : CK(14728) : AC(2072)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Sodium fluoride exposure compromises hair follicle growth and accelerates programmed cell death.

Pubmed Data : Biol Trace Elem Res. 2010 Jan 5. Epub 2010 Jan 5. PMID: **20049553**

Article Published Date : Jan 05, 2010

Authors : Zheng-hui Wang, Xiao-li Li, Zhuang-qun Yang, Min Xu

Study Type : In Vitro Study
Additional Links
Diseases : Hair Loss : CK(763) : AC(143), Hair Quality Problems : CK(32) : AC(5)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Sodium fluoride may interfere with odontogenesis by inhibiting antioxidative enzymes and inducing programmed cell death.

Pubmed Data : J Oral Pathol Med. 2010 Aug 3. Epub 2010 Aug 3. PMID: **20738751**

Article Published Date : Aug 03, 2010

Authors : L F Jacinto-Alemán, J C Hernández-Guerrero, C Trejo-Solís, M D Jiménez-Farfán, A M Fernández-Presas

Study Type : In Vitro Study
Additional Links

Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Oxidant : CK(646) : AC(246)

Sodium fluoride produces alterations in erythrocytes of the male rat through increased oxidative stress.

Pubmed Data : Int J Mol Sci. 2010;11(6):2443-52. Epub 2010 Jun 11. PMID: **20640162**

Article Published Date : Jan 01, 2010

Authors : José A Morales-González, José Gutiérrez-Salinas, Liliana García-Ortiz, María Del Carmen Chima-Galán, Eduardo Madrigal-Santillán, Jaime Esquivel-Soto, César Esquivel-Chirino, Manuel García-Luna Y González-Rubio

Study Type : Animal Study
Additional Links
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Oxidant : CK(646) : AC(246)

The toxic effects of fluoride on the central nervous system may be related to the activition of microglia cells.

Pubmed Data : Mediators Inflamm. 2012 ;2012:102954. Epub 2012 Aug 13. PMID: **22933830**

Article Published Date : Jan 01, 2012

Authors : Xi Shuhua, Liu Ziyou, Yan Ling, Wang Fei, Guifan Sun

Study Type : In Vitro Study
Additional Links
Diseases : Brain: Microglial Activation : CK(192) : AC(114), Neurodegenerative Diseases : CK(12159) : AC(4162)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Neurotoxic : CK(2838) : AC(702), Oxidant : CK(646) : AC(246)

These results suggest that fluoride generates reactive species that cause extensive oxidative modifications in human red blood cells.

Pubmed Data : Ecotoxicol Environ Saf. 2021 Jan 15 ;208:111611. Epub 2020 Nov 10. PMID: **33396131**

Article Published Date : Jan 14, 2021

Authors : Nikhil Maheshwari, Neha Qasim, Ruhi Anjum, Riaz Mahmood

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Oxidant : CK(646) : AC(246)

P-selectin upregulation (AC 1) (CK 2)

Fluoride and arsenic exhibit cardiotoxic properties related to their pro-inflammatory effect.

Pubmed Data : Arch Toxicol. 2012 Mar 16. Epub 2012 Mar 16. PMID: **22422340**

Article Published Date : Mar 16, 2012

Authors : Yanqin Ma, Ruiyan Niu, Zilong Sun, Jinming Wang, Guangying Luo, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)

Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169), Interleukin-6 up-regulation : CK(41) : AC(10), Interleukin-8 up-regulation : CK(2) : AC(1), MCP-1 (CCL2) up-regulation : CK(7) : AC(2), P-selectin upregulation : CK(2) : AC(1), Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation : CK(4) : AC(2)

Renotoxic (AC 4) (CK 15)

Evaluation of kidney injury biomarkers in an adult Mexican population environmentally exposed to fluoride and low arsenic levels.

Pubmed Data : Toxicol Appl Pharmacol. 2018 Aug 1 ;352:97-106. Epub 2018 May 22. PMID: **29800643**

Article Published Date : Jul 31, 2018

Authors : Monica I Jiménez-Córdova, Mariana Cárdenas-González, Guadalupe Aguilar-Madrid, Luz C Sanchez-Peña, Ángel Barrera-Hernández, Iván A Domínguez-Guerrero, Carmen González-Horta, Olivier C Barbier, Luz M Del Razo

Study Type : Human Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Additional Keywords : Synergistic Toxicity : CK(226) : AC(109)
Problem Substances : Arsenic : CK(595) : AC(181), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Renotoxic : CK(56) : AC(20)

Exposure to fluoride induces apoptosis in the liver, kidney, and heart of Xenopus laevis.

Pubmed Data : Acta Histochem. 2023 Apr ;125(3):151999. Epub 2023 Mar 9. PMID: **36905872**

Article Published Date : Mar 31, 2023

Authors : Siting Wang, Hongmei Ning, Liushuai Hua, Fei Ren, Lingli Chen, Zhisheng Ma, Rongbo Li, Yaming Ge, Zhihong Yin

Study Type : Animal Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Hepatotoxic : CK(400) : AC(124), Renotoxic : CK(56) : AC(20)

Sodium fluoride induces apoptosis in the kidney of rats through caspase-mediated pathways and DNA damage.

Pubmed Data : J Physiol Biochem. 2014 Sep ;70(3):857-68. Epub 2014 Aug 27. PMID: **25158646**

Article Published Date : Aug 31, 2014

Authors : Guo Hua Song, Ji Ping Gao, Chun Fang Wang, Chao Yang Chen, Xiao Yan Yan, Min Guo, Yu Wang, Fu Bing Huang

Study Type : Animal Study
Additional Links
Diseases : DNA damage : CK(2255) : AC(824), Fluoride Toxicity : CK(1389) : AC(376), Fluorosis : CK(262) : AC(42), Kidney Damage: Chemically-Induced : CK(542) : AC(270)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Apoptotic : CK(278) : AC(120), Renotoxic : CK(56) : AC(20)

Sodium fluoride induces nephrotoxicity via oxidative stress-regulated mitochondrial SIRT3 signaling pathway.

Pubmed Data : Sci Rep. 2017 Apr 6 ;7(1):672. Epub 2017 Apr 6. PMID: **28386112**

Article Published Date : Apr 05, 2017

Authors : Chao Song, Beibei Fu, Jingcheng Zhang, Jiamin Zhao, Mengke Yuan, Wei Peng, Yong Zhang, Haibo Wu

Study Type : In Vitro Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Kidney Damage: Chemically-Induced : CK(542) : AC(270), Oxidative Stress : CK(13443) : AC(5499)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Renotoxic : CK(56) : AC(20)

Teratogenic (AC 4) (CK 8)

Aloe vera protects against fluoride-induced teratogenic effects during pre- and postnatal development in mice.

Pubmed Data : Environ Sci Pollut Res Int. 2022 Sep ;29(42):63577-63587. Epub 2022 Apr 23. PMID: **35460489**

Article Published Date : Aug 31, 2022

Authors : Priyanka Mathur, Shilpa Choudhary, Pradeep Bhatnagar

Study Type : Animal Study
Additional Links
Substances : Aloe Vera : CK(878) : AC(253)
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Prenatal Chemical Exposures : CK(2428) : AC(530)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Teratogenic : CK(325) : AC(66)

Fluoride exposure over several generations results in adverse histopathological and biochemical changes in lung tissue.

Pubmed Data : J Appl Toxicol. 2003 Nov-Dec;23(6):437-46. PMID: **14635268**

Article Published Date : Nov 01, 2003

Authors : Gülsen Aydin, Ekrem Ciçek, Mehmet Akdoğan, Osman Gökalp

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376)
Problem Substances : Fluoride : CK(1815) : AC(454), Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Teratogenic : CK(325) : AC(66)

Low levels of selenium, fluoride and arsenic are toxic to rat embryos.

Pubmed Data : Wei Sheng Yan Jiu. 1999 Mar 30;28(2):74-6. PMID: **11939006**

Article Published Date : Mar 30, 1999

Authors : Y Li, M Sun, D Wu, X Chen

Study Type : Animal Study
Additional Links
Diseases : Birth Defects : CK(267) : AC(52), Prenatal Chemical Exposures : CK(2428) : AC(530)
Additional Keywords : Drug Synergy : CK(389) : AC(174)
Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454), Sodium Selenate : CK(11) : AC(8), Sodium Selenite : CK(23) : AC(16)
Adverse Pharmacological Actions : Teratogenic : CK(325) : AC(66)

Sodium flouride exposure during pregnancy may interfere with normal

development and increase the risk of neurological and psychiatric disorders in adulthood.

Pubmed Data : Eur Rev Med Pharmacol Sci. 2010 Jun;14(6):507-12. PMID: **20712257**

Article Published Date : Jun 01, 2010

Authors : P Flace, V Benagiano, D Vermesan, R Sabatini, A M Inchingolo, A Inchingolo, P Auteri, G Ambrosi, A Tarullo, R Cagiano

Study Type : Animal Study
Additional Links
Diseases : Fluoride Toxicity : CK(1389) : AC(376), Huntington Disease : CK(222) : AC(103), Obsessive-Compulsive Disorder : CK(421) : AC(77), Prenatal Chemical Exposures : CK(2428) : AC(530), Schizophrenia : CK(1080) : AC(191), Tourette Syndrome : CK(207) : AC(30)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Genotoxic : CK(545) : AC(184), Teratogenic : CK(325) : AC(66)

Tumor necrosis factorα (TNFα) up-regulation (AC 1) (CK 1)

Expression of SDF-1/CXCR4 and related inflammatory factors in sodium fluoride-treated hepatocytes.

Pubmed Data : PLoS One. 2024 ;19(6):e0302530. Epub 2024 Jun 21. PMID: **38905184**

Article Published Date : Dec 31, 2023

Authors : Rui Yang, Hongting Shen, Mingjun Wang, Yaqian Zhao, Shiling Zhu, Hong Jiang, Yanan Li, Guanglan Pu, Xun Chen, Ping Chen, Qing Lu, Jing Ma, Qiang Zhang

Study Type : In Vitro Study
Additional Links
Diseases : Chemically-Induced Liver Damage : CK(2167) : AC(1069), Fluoride Toxicity : CK(1389) : AC(376), Inflammation : CK(15536) : AC(5279)
Problem Substances : Sodium Fluoride : CK(1446) : AC(393)
Adverse Pharmacological Actions : Interleukin-1 up-regulation : CK(8) : AC(3), Interleukin-6 up-regulation : CK(41) : AC(10), Tumor necrosis factorα (TNFα) up-regulation : CK(65) : AC(11)

Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation (AC 1) (CK 2)

Fluoride and arsenic exhibit cardiotoxic properties related to their pro-inflammatory effect.

Pubmed Data : Arch Toxicol. 2012 Mar 16. Epub 2012 Mar 16. PMID: **22422340**

Article Published Date : Mar 16, 2012

Authors : Yanqin Ma, Ruiyan Niu, Zilong Sun, Jinming Wang, Guangying Luo, Jianhai Zhang, Jundong Wang

Study Type : Animal Study
Additional Links
Diseases : Cardiovascular Diseases : CK(17124) : AC(2826)

Problem Substances : Arsenic : CK(595) : AC(181), Fluoride : CK(1815) : AC(454)
Adverse Pharmacological Actions : Cardiotoxic : CK(1168) : AC(209), Inflammatory : CK(541) : AC(169), Interleukin-6 up-regulation : CK(41) : AC(10), Interleukin-8 up-regulation : CK(2) : AC(1), MCP-1 (CCL2) up-regulation : CK(7) : AC(2), P-selectin upregulation : CK(2) : AC(1), Vascular Cell Adhesion Molecule-1 (VCAM-1) Up-Regulation : CK(4) : AC(2)