Lead Exposure Still Kills Nearly 1 in 5

Analysis by Dr. Joseph Mercola ✓ Fact Checked

December 14, 2022
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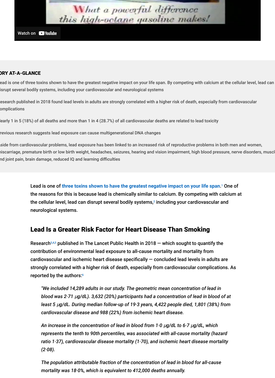

STORY AT-A-GLANCE

- Lead is one of three toxins shown to have the greatest negative impact on your life span. By competing with calcium at the cellular level, lead can disrupt several bodily systems, including your cardiovascular and neurological systems
- Research published in 2019 found lead levels in adults are strongly correlated with a higher risk of death, especially from cardiovascular complications
- Nearly 1 in 5 (18%) of all deaths and more than 1 in 4 (28.7%) of all cardiovascular deaths are related to lead toxicity
- Previous research suggests lead exposure can cause multigenerational DNA changes
- Aside from cardiovascular problems, lead exposure has been linked to an increased risk of reproductive problems in both men and women, miscarriage, premature birth or low birth weight, headaches, seizures, hearing and vision impairment, high blood pressure, nerve disorders, muscle and joint pain, brain damage, reduced IQ and learning difficulties

Lead is one of three toxins shown to have the greatest negative impact on your life span.[1] One of the reasons for this is because lead is chemically similar to calcium. By competing with calcium at the cellular level, lead can disrupt several bodily systems,[2] including your cardiovascular and neurological systems.

Lead Is a Greater Risk Factor for Heart Disease Than Smoking

Research[3,4] published in The Lancet Public Health in 2018 — which sought to quantify the contribution of environmental lead exposure to all-cause mortality and mortality from cardiovascular and ischemic heart disease specifically — concluded lead levels in adults are strongly correlated with a higher risk of death, especially from cardiovascular complications. As reported by the authors:[5]

> *"We included 14,289 adults in our study. The geometric mean concentration of lead in blood was 2·71 µg/dL; 3,632 (25%) participants had a concentration of lead in blood of at least 5 µg/dL. During median follow-up of 19·3 years, 4,422 people died, 1,891 (18%) from cardiovascular disease and 988 (22%) from ischemic heart disease.*
>
> *An increase in the concentration of lead in blood from 1·0 µg/dL to 6·7 µg/dL, which represents the tenth to 90th percentiles, was associated with all-cause mortality (hazard ratio 1·37), cardiovascular disease mortality (1·70), and ischemic heart disease mortality (2·08).*
>
> *The population attributable fraction of the concentration of lead in blood for all-cause mortality was 18·0%, which is equivalent to 412,000 deaths annually.*
>
> *Respective fractions were 28·7% for cardiovascular disease mortality and 37·4% for ischemic heart disease mortality, which correspond to 216,000 deaths a year from cardiovascular disease and 185,000 deaths a year from ischemic heart disease."*

Lead Has Multigenerational Impacts

When nearly 1 in 5 (18%) of all deaths and more than 1 in 4 (28.7%) of all cardiovascular deaths are related to lead toxicity, it would certainly make sense for doctors to check patients' lead levels. Yet, that almost never happens.

> **"Failure to address lead not only risks the patient's life, but also that of their children and grandchildren, especially if it's a female patient."**

Instead, patients with symptoms of heart disease are simply given a statin, which does absolutely nothing to address this toxic underlying cause. This is an egregious error, considering lead exposure has multigenerational impacts. This means failure to address lead not only risks the patient's life, but also that of their children and grandchildren, especially if it's a female patient. As reported by The Allegheny Front in 2016:[6]

> *"[Research] out of Wayne State University suggests lead exposure can ... cause changes to DNA that might affect several generations. 'When a mother drinks leaded water ... she's exposing her fetus, so that's going to directly affect brain development of her baby,' says Doug Ruden, co-author of the study and Director of Epigenomics at Wayne State's Institute of Environmental Health Sciences.*
>
> *'What most people don't realize is that you're also expressing the germ line cells, and that can affect the grandchildren, and even potentially beyond that.'*
>
> *Ruden's study looked at blood lead levels in 35 mothers and their babies in Detroit. They observed a correlation between elevated blood lead levels in the mothers and changes in DNA.*
>
> *'If the mothers had high blood lead levels when they were born, then their grandchildren have changes in their DNA,' he says. And the changes in the DNA we were looking at weren't permanent changes. They're what we call epigenetic mutations'...*
>
> *"The way you think about it is — if a mother is pregnant with a baby, she's also carrying the baby's children too ... Because it's like a Russian doll. All of the eggs that a person has in life are actually developed in the fetus, during the fetal period, and all the sperm progenitor cells in the boy babies, the boy fetuses, are also present in the fetus," he says."*

Health Risks Associated With Lead Exposure

There is no known safe exposure to lead, and exposure — aside from heart disease — has been linked to an increased risk of reproductive problems in both men and women, miscarriage, premature birth or low birth weight, headaches, seizures, hearing and vision impairment, high blood pressure,[7,8] nerve disorders, muscle and joint pain, brain damage, reduced IQ and learning difficulties.

Symptoms of chronic exposure or lead poisoning usually don't appear until years later, but sudden high exposure to lead has been known to induce insanity rather rapidly.

All of these neurological impacts can be explained by the fact that, in your brain, lead disrupts neurons that use calcium to transmit information.[9] The presence of lead will cause some neurons to fire more and decrease the signals in others. Other research has demonstrated that lead:[10]

- Generates superoxide and hydrogen peroxide, which in turn reacts with nitric oxide and produces peroxynitrites
- Stimulates vascular smooth muscle cell proliferation and phenotypic transformation
- Disturbs vascular smooth muscle calcium signaling
- Modifies vascular response to vasoactive antagonists
- Raises plasminogen activator inhibitor-1 production
- Suppresses proteoglycan production
- Causes endothelial injury
- Impedes endothelial repair
- Inhibits angiogenesis
- Promotes inflammation

Corruption Has Allowed Environmental Lead to Proliferate

Leaded gasoline was for decades a primary source of lead exposure in the general population. The U.S. introduced leaded gas in 1923, to make the fuel more efficient and reduce engine knocking. This was done despite the well-recognized hazards of lead exposure, and despite the fact that 10% alcohol fuel based ethanol achieve the same goals, all while having the added benefit of clean combustion, which eliminated soot emissions.

The only reason lead was selected was because manufacturing the lead additive, tetra-ethyl lead, would allow them to make greater profits. As explained in the video above, by adding a percentage of alcohol to the gasoline, the oil industry stood to lose up to 20% of its petroleum sales, depending on how much alcohol was added. On the other hand, by adding lead to gasoline, the oil industry had a product it could control in its entirety, and that was their aim.

The auto and chemical industries used the same techniques back then as they do now; promoting, defending, manipulating government officials, and molding public opinion to profit from a toxic product, all while knowing exactly the kind of harm it causes.

Manipulated science, industry propaganda and political corruption allowed lead to remain in gasoline for 80 years, until Clair Patterson, Ph.D., was finally successful in getting it removed. Patterson is an unsung public health hero of the 20th century that most people have never heard of. The featured video is a 30-minute summary of the evolution of leaded gas and, ultimately, its removal.

Patterson first began his health crusade to eliminate environmental lead in 1965, with the publication of his book, "Contaminated and Natural Lead Environments of Man." It would be 11 years before he finally succeeded, after fighting against the massive lobbying power of the oil and auto industries.

Then, as now, these industries used their influence to launch a massive discrediting campaign against him and his research. In 1971, he was excluded from a National Research Council (NRC) panel on atmospheric lead contamination, even though he was the world expert on the subject at that time.

Despite these massive discrediting efforts, he doggedly pursued the elimination of lead from gasoline, which finally occurred in 1986. Thanks to Patterson's persistence, blood lead levels in Americans dropped by 80% by the late 1990s.

How to Get Lead Out of Your Body

Eliminating lead can be a long and arduous journey that needs to be done very carefully to avoid creating more harm in the process. A scientific review[11] published in 2016 highlighted the benefits of chelation therapy using edetate disodium (EDTA).

According to that paper,[12] EDTA chelation effectively lowered the risk for future cardiovascular events, with a number needed to treat (NNT) of 12 to prevent one cardiovascular event over five years. Mainstream health care, however, still maintains that EDTA chelation therapy is a form of quackery that has no discernible benefit.

EDTA does have its risks, however, as it draws out not only lead but also important minerals. (This is part of why chelation must be done with a qualified doctor who can monitor your nutritional status and recommend appropriate supplementation.)

A far safer and more readily available alternative is N-acetyl-cysteine (NAC), a precursor to glutathione, which your body requires for efficient detoxification. A study[13] from 2008 found NAC protected against lead-induced genotoxicity in human liver cancer cells (HepG2 cells). As noted in that paper:[14]

> *"[NAC] has an impressive list of protective effects including: antioxidant activity, decrease of the biologically effective dose of carcinogens, anti-inflammatory activity, immunological effects, inhibition of progression to malignancy and metastasis, and protection from the adverse effects of chemoprevention and chemotherapeutic agents.*
>
> *[We] hypothesized that the antioxidant, n-acetyl-l-cysteine attenuates oxidative stress and genotoxicity, and thereby provides cellular protection against lead toxicity ...*
>
> *[The] addition of NAC in vitro showed a significant reduction ($p < 0.05$) in the comet tail length, percentage of DNA cleavage, comet tail moment, as well as comet tail arm respectively in cells co-treated with NAC and lead nitrate.*
>
> *Findings from these studies demonstrated that NAC inhibits malondialdehyde (MDA) production and genotoxicity in lead nitrate-treated HepG2cells in a dose-dependent manner."*

Shortly after it was discovered that NAC also provides several benefits in the treatment of COVID-19, the U.S. Food and Drug Administration started cracking down on NAC, claiming it's excluded from the definition of a dietary supplement. As a result of the FDA's bogus crackdown on this supplement, which has been sold as such for 57 years, Amazon quit selling it. Fortunately, it's still available in many other places.

Sauna bathing can also be a useful strategy to remove nearly every toxin from your body including lead. In the U.S. this means either a far or near infrared sauna. My personal preference, as I have previously discussed, is a near IR sauna as it will also help with photodetoxification that far IR sauna cannot do. I personally use it three times a week. Using it every day is not a good strategy. Every other day is ideal.

Common Sources of Lead Exposure

Of course, successfully eliminating lead from your body also requires you to stop putting more in. Today, gasoline exhaust is not a source of lead. Instead, primary sources include:

- Drinking water
- Cigarette smoke
- Lead paint in older homes
- Cheaply made household objects and children's toys and apparel — As just one example, Disney character clothing was recalled in late November 2022 due to high levels of lead in the textile ink. More than 80,000 pieces of clothing were recalled[15,16]

Strategies to Avoid Lead Poisoning

To protect yourself and your family against lead exposure, consider the following recommendations:

- If your home was built before 1978, get it inspected to determine whether it has any lead paint — Lead paint removal must be done by a certified professional to ensure safety, as the dust is highly toxic. For more information on this, see the U.S. Environmental Protection Agency's "Lead-Based Paint Resources" page.[17]
- Get your water tested for lead — Millions of older water service lines across the U.S. are made from lead and could be carrying contaminated water into your home on a daily basis. Your safest and most economical choice to get lead out of your water supply is to use a high-quality filter rated for lead removal.
- Be mindful that certain household objects may contain lead — For information about lead-containing products and recalls, see the Consumer Products Safety Commission's website.[18]
- Get your child tested for lead — Ideally, all children should be tested at ages 1 and 2, and again at ages 3 and 4 if you live in an older home. It's also recommended to test your child's level whenever there's concern about exposure. Also get yourself tested for lead, especially if your doctor suspects you have heart disease. A level of 3.5 mcg/dL or higher is considered dangerous.[19]
- Use filtered cold water for drinking or cooking. Never cook or mix infant formula using unfiltered hot water from the tap.

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Guillermoo
Joined On 6/7/2015 8:47:48 AM
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As reported by Dr. Mercola some strategies that are excellent for detoxifying are a low EMF IR sauna infrared sauna along with B-lipoic acid. Minerals like magnesium, zinc, selenium, potassium, and iodine are also important for detoxification. when your body has heavy metals in it, they attract EMFs. Electromagnetic fields in turn affect your body's metabolism and functioning, as well as your ability to effectively eliminate toxins and heavy metals. www.sciencedirect.com/science/article/abs/pii/S0891584999000362 ,,,

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Guillermus
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Metallothionein has been shown to be able to bind to a variety of metal compounds, including cadmium, mercury, lead, and arsenic. There are four major isoforms of metallothionein expressed in the human body. Large amounts are synthesized, mainly in the liver and kidneys. Its synthesis depends on the availability of trace elements, such as zinc, copper and selenium, and the amino acids histidine and cysteine. Cysteine is a sulfur-based amino acid that acts as a precursor to metallothionein, a protein that can bind heavy metals for proper detoxification. It can also further combat heavy metal toxicity by neutralizing free radicals, reducing oxidative stress, and decreasing inflammation.

By consuming foods with cysteine, metallothionein levels can, in theory, be increased. Whey protein from undenatured whey protein powder is one of the most important sources of cysteine in the diet. Cruciferous vegetables that are high in plant-based cysteine can increase metallothionein levels. Flavonoids can directly have metals by acting as natural chelators. By binding to heavy metals, flavonoids form larger chelate complexes that prevent heavy metals from forming free radicals.

Researchers have identified metal-chelate complexes from proteins in Chlorella that may explain its ability to detoxify heavy metal poisoning. Unlike Chlorella, Spirulina contains a phytochemical called phycocyanin that can bind to and detoxify heavy metals. Chlorella are capable of producing polysaccharides in the cell wall as a protective mechanism against heavy metal toxicity, which stimulates metabolic activity within the cell. As a result, at low concentrations the heavy metal is not harmful to microalgae and does not negatively affect their growth. ... link spinner.com/_v978-1-5548-8841-6_14 (2012)

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Chlorella vulgaris significantly decreased blood and tissue lead levels. Additional research suggested that C9 treatment has advantages as a chelating agent to help protect the heart from lead poisoning induced toxicity
pubmed.ncbi.nlm.nih.gov/18684395/ (2008) Numerous studies show that Chlorella aids in the body's removal of heavy metals, including arsenic, cadmium, and lead that are present in cigarette smoke. sprinks.times.ac.in/6119 (2013)
www.bingenuousdental.com/blogs/chlorella-science/chlorella-assists-de... (2022) The direct contamination of bodies of water, due to discharges of residual water contaminated with heavy metals, is an important problem that has worsened in recent decades, due to the fact that heavy metals can alter the proper functioning of ecosystems

The objective of this study was to determine the biosorption capacity of the heavy metals Hg, Cd and Pb by the microalgae Chlorella vulgaris and Scenedesmus obliquus. Chlorella vulgaris had the highest biosorption with 98.77 1.65% for Cd, 92.45 3.95% for Pb and 81.78 1.26% for Hg. doaat.uniroma.eu/...articulo (2022) — Flavonoids can directly heavy metals by acting as natural chelators. By binding to heavy metals, flavonoids form larger chelate complexes that prevent heavy metals from forming free radicals.

In addition, flavonoid-metal chelate complexes have higher antioxidant activity than flavonoids alone, meaning they can further reduce oxidative stress. This study reveals the flavonoid lead (Pb) chelating efficacy of the flavonoid morin using physicochemical and theoretical deep-shell spectroscopy. The efficacy of morin in the presence of other flavonoids (naringin) and polyphenols (ellagic acid) giving rise to synergistic combination has also been confirmed from spectroscopic studies. www.ncbi.nlm.nih.gov/...PMC6288805 (2018)

Mark as Spam · Posted On: 12/14/2022 2:06:03 AM

Like · Dislike

Jostairee
Joined On 1/5/2012 11:13:54 AM
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Sheesh, nice et Gui, nice, another shining example of Get With the Program, Tucios Are the Stuff of Life. No end in our modern society where profit trump sanity. Like the information the other day highlighting how HIV contaminated meat's where just shipped off to third world countries so as not to lose profit. Isn't broken cell Chlorella extracts the best advice to chelate a variety of toxic junk to remove from our bodies? Isn't Spirulina and Spirulina extracts better at removal of toxic junk putting lead, a deadly heavy metal neurotoxin, into gasoline; releasing ozone-destroying Freon into the stratosphere; and unleashing the scourge of chlorofluorocarbons, implicated in aerosols and just about every piece of foamed plastic choking the world's landfills and waterways.

Once upon a time—with the aid of an aggressive and sustained public-relations program funded by a trio of mighty corporations that have long since turned the proper-these industrial scientists and public-health heroes of the past into boys, Clint Eastwood, who called Midgley his "greatest discovery", in link www.roadandtrack.com/car-culture/a39356456/the-man-who-poisoned-the-wo... (2022)

Mark as Spam · Posted On: 12/14/2022 6:12:36 AM

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RandyFast
Joined On 5/6/2010 8:42:42 PM
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Hi, Gui. I'm quite certain that the majority of lead laden products are coming from China. Of course, most people who are aware of this, don't voice it, after all, we wouldn't want to show our "racism" now - would we! Children's toys from China have been found to contain many contaminants.

Mark as Spam · Posted On: 12/14/2022 6:55:21 AM

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grufu
Joined On 11/13/2012 8:03:55 AM
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In the R&T article, Standard Oil was mentioned, but not Rockefeller. hmmm???

Mark as Spam · Posted On: 12/14/2022 7:11:33 AM

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Jostairee
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More great links Gui to show an expanded view of this subject. Randy, we also wouldn't want to expose how when the general public here gets completely fed up with Bad Spirit, the machine just moves operations overseas and carry's on without missing a step. Like more Illegal Gain of Function from here to China, parish the thought.

Mark as Spam · Posted On: 12/14/2022 7:13:45 AM

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Guillermus
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Very true Randy, lead contamination and lead poisoning are major problems throughout China. At least 15 percent of Chinese children suffer from lead poisoning from lead found in paint, food, water, and other sources. Lead poisoning can cause numerous health problems, including kidney failure and brain damage. In 2007, numerous Chinese-made products were pulled from shelves in what may be a record year for toy recalls. US regulatory agencies and companies instituted numerous recalls of defective, dangerous, or toxic products, including toothpaste, children's jewelry, toys, tools, dog food, baby bibs, tires, and computer batteries. The common link between many of these products: They were made in China and contain lead paint.

In fact, a Canadian study published in September 2007 showed that while 91 percent of product recalls since 1988 were products made in China, 15 percent of recalls were due to design flaws. The many problems with lead paint, toxic dog food and other products made in China have led the Chinese government to better regulate manufacturers. Chinese officials have crack down on some flagrant violations, including the death of 18 children in a country with more than a billion people and thousands of manufacturers, some of whom disappear one day only to reappear later under a different name or in a different location. health.howstuffworks.com/wellness/prevention/a-china-lead-poisoning.

Mark as Spam · Posted On: 12/14/2022 7:47:51 AM

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Guillermus
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Of course Grufu, business success did not earn Rockefeller the respect of public opinion. On the contrary, it was even said that he was "the greatest conspiracy criminal." The American people thus showed their contempt for a new and reduced circle of businessmen, of which Rockefeller was the greatest exponent, who were accused of using all kinds of tricks to put the resources of power to work at their service. The career of the businessman with German roots was dotted with controversial episodes that demonstrated an indomitable desire for success, with no qualms about detecting the necessary means to achieve it or who were the victims of it.

The beginning of Rockefeller's success, that on January 10, 1870 he founded Standard Oil, the company with which he would become lord and master of the American oil business. By then he had already reinforced his dominant position in the region, thanks to a series of agreements with the railway companies to obtain privileged rates on their shipments in exchange for guaranteeing volumes that were not available to their competitors. It was during these years that he made one of the most controversial moves of his business career, a true reflection of his Darwinian conception of the business world, according to which only the strongest are likely to survive.

To avoid the harmful effects of competition, Rockefeller sponsored several attempts to create a kind of consortium in which he intended to bring together all the refineries in the region. To encourage them to join, they had to be supported by considerable discounts on their rail fares; those who refused would suffer serious difficulties in continuing to develop their business. "We are going to buy all the Standard refineries. We will give everyone a chance to join/those who refuse will go under. If you don't sell us your property, it will sink", Rockefeller himself even said.

Mark as Spam · Posted On: 12/14/2022 7:50:15 AM

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quinine
Joined On 6/16/2010 8:32:29 AM
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For a while you could not buy NAC on Amazon. However, I purchased NAC on Amazon last week so they are back to selling it again. www.amazon.com/s?k=NAC&crid=3S0ZZY1T1G0B4&qsprefix=nac%2Caps%2C7...

Mark as Spam · Posted On: 12/14/2022 8:41:08 AM

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RandyFast
Joined On 5/6/2010 8:42:42 PM
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Gui, I know that you would have knowledge of what I mentioned. There are 100 different reasons that people are getting sick, yet, in almost every instance today, Covid 19 — Just China is so wonderfully accommodating! It seems as if millions of Chinese are no longer taking the "covid measures" BS. They are fighting back!

Mark as Spam · Posted On: 12/14/2022 9:24:04 AM

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bee70578
Joined On 12/6/2014 6:03:10 PM
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Hi Gui - A comment from my nutritionist when I was detoxing mercury was not to do too much infrared at one sitting (just ten minutes) or it could bring out more long-term mercury deposits stored in the bones like the body could deal with and worsen the condition. Since she had worked through the protocol herself I tend to trust that and hope it may be helpful to some here. She also mentioned that a long hot shower could cause similar issues.

Mark as Spam · Posted On: 12/15/2022 3:53:32 AM

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HanneKoplev
Joined On 7/30/2013 1:15:23 AM
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Please note that blood level of Lead is not a biomarker for the amount of Lead stored in internal organs. In this article the storage of Lead in bones are diagnosed with an interesting methods. www.ncbi.nlm.nih.gov/...PMC2974797/ Association of Cumulative Lead Exposure with Parkinson's Disease

Reply · Mark as Spam · Posted On: 12/14/2022 4:12:47 AM

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Guillermus
Joined On 6/7/2015 8:47:48 AM
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Yes, bones and other possibilities for measuring lead in the body. Lead is distributed throughout the body to reach the brain, liver, kidneys, and bones. It is deposited in teeth and bones, where it accumulates over time. Human exposure is usually assessed by measuring the concentration of lead in the blood. Bone Pb (BoPb) represents about 90% of the total amount of lead in adults (70% in children). There is a strong association between BoPb levels and serum lead levels of lead exposed adults. The findings of this study indicated the potential role of the skeleton as an important source of endogenous labile lead that may not be adequately discerned through measurement of BPb levels.

Urine lead (UPb) collection is favored for long-term biomonitoring, especially for occupational exposures. Lead present in bone passes into the blood during pregnancy and becomes a source of exposure to the developing fetus. Although lead excreted in hair has been suggested for lead exposure assessment, extensive debate continues regarding lead in hair (HPb) as a biomarker. Hair is a biological sample that is easily and non-invasively collected at minimal cost and easily stored and transported to the laboratory for analysis.

Like hair, nails have many superficial advantages as a biomarker of lead exposure, especially since sample collection is non-invasive and simple, and samples are highly stable after collection and do not require special storage conditions. Nail lead (NPb) is considered to reflect long-term exposure because this compartment remains isolated from other metabolic activities in the body.

Mark as Spam · Posted On: 12/14/2022 4:51:17 AM

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Guillermus
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Lead's ability to cross the blood-brain barrier is due in large part to its ability to substitute for calcium ions. Within the brain, lead induced damage to the prefrontal cerebral cortex, hippocampus, and cerebellum can lead to a variety of neurological disorders, including brain damage, mental retardation, behavioral problems, nerve damage, and possibly Alzheimer's disease, Parkinson's disease, and schizophrenia. At the molecular level, lead interferes with the regulatory action of calcium on cellular functions and alters many intracellular biochemical activities. Experimental studies have also shown that lead exposure can have genotoxic effects, especially on cells in the brain, bone marrow, liver, and lungs. This document presents an overview of biomarkers of lead exposure and discusses the neurotoxic effects of lead in children, adults, and experimental animals. www.ncbi.nlm.nih.gov/...PMC2882639

Mark as Spam · Posted On: 12/14/2022 4:41:48 AM

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realrose
Joined On 11/10/2011 8:39:01 AM
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This bone absorption of lead is precisely the reason you do not want to make bone broth from calf's animals, known to have high lead levels from their grez feed or crush or whatever confined animals are being fed these days.

Mark as Spam · Posted On: 12/14/2022 9:10:02 AM

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DebbyW
Joined On 5/27/2010 9:07:35 AM
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My granddaughter, when she was tested for lead at around one, had borderline levels. My daughter tracked it down to her daughter chewing and sucking on my daughter's wooden rocking chair. My daughter's dentist, the gave her daughter Chlorella and the levels dropped. She'd cut the pill into quarters and put it on her daughter's tongue. All her kids loved the taste of it.

Reply · Mark as Spam · Posted On: 12/14/2022 6:47:40 AM

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Guillermus
Joined On 6/7/2015 8:47:48 AM
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Good management. Yes, due to its comprehensive amino acid profile, Chlorella Growth Factor (CGF), and high levels of DHA and EPA omega-3 fatty acids, Chlorella is a detoxifying superfood. Chlorella's high concentration of chlorophyll contributes to its detoxifying properties. Regular use of chlorella can help repair faulty genetic material in our cells, preventing our health and slowing the rate at which we age. Chlorella removes contaminants such as mercury and can aid in detoxifying the body of neurotoxins such as fluoride, aluminum, lead or cadmium for the removal of various harmful chemicals from the body, such as pesticides and radioactive radiation damage.

As Dr. Mercola reported, some studies have shown that chlorella can help detoxify, improve immune system health, regulate blood pressure levels, and combat the effects of oxidative stress. Chlorella extract treatment also significantly reduced lead in research published in the "Journal entitled International Immunopharmacology" demonstrated its ability to produce chelating effects and "lower blood lead levels," particularly when administered simultaneously pubmed.ncbi.nlm.nih.gov/21420028 (2011)

Mark as Spam · Posted On: 12/14/2022 9:39:22 AM

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jamNjim
Joined On 2/23/2008 11:15:56 PM
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This is going to be long, so brace yourselves! I want to try and explain some of the complexities that were involved when it came to tetra-ethyl lead and the automotive industry. Tetra-ethyl lead not only did all the things Dr. Mercola pointed out, but it was a LUBRICANT for the 1950's, most of your lead-free engines were a wet-bath system whether it was either lubricated or throttle-body fuel injected. Either one sat on top of the intake manifold and the air/fuel mixture was distributed to each cylinder via a cast iron manifold and air. This acted as a coolant and lubricant for the entire upper-end of the valve-train/rocker and cylinder-head values.

This was part of the design an engine (back in the day) was baked into the cake. To suddenly remove lead from gasoline meant COMPLETELY redesigning the engines! That can't be done overnight. Back in the 20's when this was known, the technology to get around this dilemma wasn't quite there. The only way around this was to install dual-seat (hardened) valve seats and alloy-stales & exhaust valves. If you were a car-lover with an unlimited budget, that's what you did. You took your hands to a machine shop and had the upgrades made. If you were on a tight budget, you bought a few gallons of tetra-ethyl lead and mixed your own gasoline.

Anyone who owns an old tractor (mac) has to do this to keep from burning up the valves and destroying the valve seats to the heads. Anyway, the auto manufacturers were faced with hardening the valve seats and upgrading the valves. This added cost because you needed certain grades of steel in order to heat treatment the valve seats. Cast iron (only the heads) was stable off, didn't lend itself to this. It becomes brittle and cracks. More Nickle and other precious metals have to be added to the alloy to make this happen and that's very expensive! That's when ALUMINUM heads came out to the only choice to manufacture. ...continued.....

Mark as Spam · Posted On: 12/14/2022 6:26:13 AM

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jamNjim
Joined On 2/20/2008 11:15:54 PM
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Aluminum was more expensive than cast iron but it was way cheaper to cast and machine! Manufactures could easily machine the cutouts in the intake/exhaust ports to press fit the boat-steel valve seats....PROBLEM SOLVED NOT!! Anyone who lived through the 90's and owned a Chevy or Ford can probably recall having BLOWN HEAD GASKETS! That was because they had made the switch to aluminum without really changing anything else. Aluminum expands at about 10 times the rate as cast-iron. SO if you owned a Ford or Chevy with a small block V8 or the (especially) Fords 3.5 and 3.9 liters you probably had to have the head gaskets replaced around the 100,000 mile mark (give or take 20K).

This was because they simply took their molds for making cast-iron heads and poured aluminum in them to make aluminum heads. Aluminum requires thicker decks and higher clamping forces to compensate for thermal expansion. This was also when "Clamp-To-Yield" head bolts were introduced. Now you had fasteners that were smaller and they were literally stretched to their yield strength (breaking point) when installed and tightened. This again was done to compensate for the difference in thermal expansion between aluminum, steel, and cast-iron. At the point of yield, a bolt/fastener can grow and stretch with thermal expansion and not change the clamping force.

This was critical in preventing the aluminum heads from warping and blowing the head gaskets. However, it also meant the owner had to stay on top of maintenance! Every 30K (every time a Ford (in the 90's) would overheat would be around the 50,000 to 75,000 mile mark and for no fault of the car/manufacturer. That's when most thermostats for the cooling system would fail. Prior to 1968 that was no big deal. After 1990 it was bad! this happen, within the next 20,000 miles you blew a head gasket! This problem continued through the early 2000's! Continued.....

Mark as Spam · Posted On : 12/14/2020 6:29:56 AM
Like · Dislike

jamNjim
Joined On 2/20/2008 11:15:54 PM
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Manufacturers continued to redesign their old engines or simply designed new engines to get around this issue. By this time everyone had ditched the carburetor and Ford had developed a fuel injection for PORT FUEL injection. Air-fuel ratios could be better controlled which aided in preventing blown head gaskets (no pre-ignition). Around 2010 there was a revolution in head gasket design! I believe the company that did this is market first was Cometic. They developed a gasket that was 100% layered and it was ALL STEEL! No composite material! What I find interesting about this that back in the 60's, Chrysler V8s I disassembled all had steel head gaskets.

They were single layered, but they were steel. All the old mechanics I talked to said that Chrysler was able to do this due to the high Nickle content in their cast iron and their tight machining tolerances on the head and deck surfaces. I was perplexed about this. Dodge Big Blocks were a copy of Ford's Big Block FE engine. I never took one apart, but a 70 year old mechanic told me when I was 25 that a 427 FE Ford had no head gasket! I never debated that, but I can see where it is possible. With today's machining technology and these new head gasket designs, we have achieved near perfect head to block sealing.

It only took 50 years to get here! They removed lead from gasoline around 1978. It would until 2010 you could buy a car that was guaranteed not to blow a head gasket as a result of removing tetra-ethyl lead from gasoline. I know it's the price you have to pay for humanity. I'm going everyone just a snippet of information from my automotive knowledge. I'm a Mechanical Engineer and I've literally been studying this since 1976 (11 years old). When you make changes to something that an entire social-economic system is dependent around it has dramatic consequences (domino effect).

Mark as Spam · Posted On : 12/14/2020 6:55:36 AM
Like · Dislike

Evess
Joined On 3/7/2008 10:05:07 AM
Add as Friend · Send Message

fantastic posts thank you, explains a lot of what happened to my previous cars I thank you for sharing your knowledge...

Mark as Spam · Posted On : 12/14/2020 7:18:02 AM
Like · Dislike

Arlen1
Joined On 6/1/2005 1:45:38 PM
Add as Friend · Send Message

Jam, I know a lot of people that experienced the blown head gasket problem on Fords. I replaced a lot of head gaskets on 1990-2003 Ford Taurus with the V6. The Chevy's were a little better. I would like to remind everyone of the 2-cycle engines of days gone by. You can still buy a chain saw with a 2-stroke, but the rest of the 2-stroke world is obsolete! As Jam explained about lead lubricating the intake and combustion and valves, oil was mixed with gasoline to lubricate the engine on a 2-stroke.

The limitations of the modern 4-stroke is the valve train. The 2-stroke basically had no valve train. You only had a piston, rod, and crank. The main area of friction is the piston to cylinder interface. By mixing oil in the gasoline you eliminate the friction and you have near unlimited sprts. Valve trains are the limiting factor in most engines. The POLLUTION from burning oil is incredibly high! So the transition to 4-stroke technology was a no brainer. It was slow going and eventually technology won.

2-strokes are all but gone except for chain saws. What happened in the 70's the government putting the carriage before the horse. We were not technically ready for the mandated emissions. We were sacrificing our health for the government! Now with the government today with electric cars. Driving and EV's fine. However, if the electricity you charge that EV came from fossil fuels you just robbed Peter to pay Paul and you paid twice as much to do so! the most electricity from clean energy sources before we force the world to pay twice as much for a car that drives half as far.

Then there's the issue with batteries. People with 5 to 10 year old EV's are stuck with a great value now because they can't get a new battery. Anyone willing to make the sacrifices required to own an EV should be GUARANTEED access to new replacement batteries or they get a new car from the manufacturer! If my engine blows in my ICE car, I can rebuild/replace it! Batteries should be no different.

Mark as Spam · Posted On : 12/14/2020 7:35:30 AM
Like · Dislike

brianallen1
Joined On 6/7/2021 12:18:53 PM
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There was a guy in San Diego who made a lucrative living buying Ford Rangers with blown head gaskets. He would get them for a song and no dance, repair and resell.

Mark as Spam · Posted On : 12/14/2022 7:56:29 AM
Like · Dislike

Lw1959
Joined On 9/15/2011 8:36:46 AM
Add as Friend · Send Message

Fascinating! I remember hearing people having blown head gaskets and being soooo frustrated with it. We are a Toyota family. But that is another story. ;) Right now they won't stand behind their stupidly designed relay wires that they coated with wax for insulation (which is food for mice). The mice easily get into people' trucks and chew through the wiring causing the 4 wheel drive to fail and turning on numerous warning lights. $13,000 to fix after only 8 years and $41,000 cash! I have read numerous complaints online about many people having this same issue. Nope, Toyota won't recall! (unless there is system failure with the airbags which they would then have to!) Believe me where we live, if you don't have 4 wheel drive in the winter, it is downright dangerous!!!

Mark as Spam · Posted On : 12/14/2020 9:14:22 AM
Like · Dislike

rmelrose
Joined On 11/15/2011 8:59:01 AM
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Nice outline JamNjim, thanks! Explosive a lot. My guess is marine motors are also suspect. For some reason we had an ancient 2-stroke lawnmower, remember my dad fussing with the choke, and same with dancing around to rev up my 2-stroke bike.

Mark as Spam · Posted On : 12/14/2020 9:19:37 AM
Like · Dislike

Segstar
Joined On 5/10/2013 3:30:42 PM
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Good sermon Jimmy. For the todays GDI engines are by far the biggest POS ever made...Instead of the port injection which sprayed the gas INTO the valves and kept them clean, is now sprayed DIRECTLY into the cylinders to "supposedly" get better gas mileage and lower emissions... Gas is a great cleaner and spraying one the valves helped to keep them clean.. Today what we are witnessing is an epidemic of carbon gummed up engines...and it seems the 3.5 liter Ford V6 is GDI, and readily convertible to LPG !! asked my propane supplier which configuration is now 10 bun trucks were, and he told me port injection, as there are still so big 24 engines available here, except diesels. The one thing that bothers me about autogas is that it can be hard to find in certain places. None of the truck stops on I10, near me, sell it, but some have electric car rechargers, go figure??? www.sonomaevs.com/...Guide-Spd/ >>> www.epub.com/...Jalternative-fuelled-vehicles

Mark as Spam · Posted On : 12/14/2020 1:58:04 PM
Like · Dislike

grulla
Joined On 1/17/2012 8:03:55 AM
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I had a 1979 3 passenger Pinzgauer snow cat with a 6 cylinder Ford 300 cid PIU truck engine and Fordomatic transmission, assigned to me from 1984 until I retired in 2010, for the purpose of accessing a particular radio site in the winter, at a snow travel 10,000' all year. When the winter was over, I'd put the snow cat in summer storage with a full 60 gallons of aviation fuel, as the new load free gas could turn to varnish. Not sure if the aviation fuel industry has finally come out with lead free fuel today???

Mark as Spam · Posted On : 12/14/2022 11:17:28 AM
Like · Dislike

grulla
Joined On 1/17/2012 8:03:55 AM
Add as Friend · Send Message

"veg", those gasoline, direct injection (GDI) engines you mentioned are becoming more popular in the autogas (propane) industry vehicles as LPDI, (liquid propane direct injection), especially in Europe and Australia. But most of the bigger U.S. engines are still, as you described, port injection. But I believe the 5.3 liter Ford V8 is GDI, and readily convertible to LPDI. I asked my propane supplier which configuration is now 10 bun trucks were, and he told me port injection, as there are still so big 24 engines available here, except diesels. The one thing that bothers me about autogas is that it can be hard to find in certain places. None of the truck stops on I10, near me, sell it, but some have electric car rechargers, go figure???? www.sonomaevs.com/...Guide-Spd/ >>> www.epub.com/...Jalternative-fuelled-vehicles

Mark as Spam · Posted On : 12/14/2022 1:58:04 PM
Like · Dislike

Segstar
Joined On 5/10/2013 3:30:42 PM
Add as Friend · Send Message

Grulla these newer engines are really the shits. You really have to put a ton of maintenance in to keep em running...For anyone who has the older type engines try your best to keep em until these crap engines fail on the way side. I usually keep my vehicles until they croak and I maintain them pretty much myself ; I just had to part ways with my 2003 Oldsmobile silhouette, very reliable vehicle. Did soooo many long drives at least 10 Florida runs which is about 2300 KMS one way...Plus at least 3 NY trips every year. Son owned them on snooming car and hit the curb wrecking the control arm amongst other things before I thought in 5 years it was time to get rid of it, so I'm still sitting in me drive way and it owes me absolutely nutten, Very faithful ...Got a 2013 Chevy Malibu for him so he can leave my dam Enclave alone as he has lead foot sel cheers grulla old friend.

Mark as Spam · Posted On : 12/14/2022 4:21:04 PM
Like · Dislike

jamNjim
Joined On 2/20/2008 11:15:54 PM
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Segstar, yes the carburetor build up on the valves is a major problem with the direct injected engines. I have 211 Fs concerning. Every problem this technology was supposed to fix, created an equal number of new problems. The CNG conversion sounds like a possible solution to this. That's another baffling topic. The USA sits on one of the largest NG reserves in the world. Most of the wells are capped off. We have enough NG to power everything in the US. This alone would cut carbon emissions in half without destroying everything else to make this leap to all electric. It makes no sense.

Mark as Spam · Posted On : 12/14/2022 6:07:03 PM
Like · Dislike

grulla
Joined On 1/17/2012 8:03:55 AM
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"veg", I keep my 3 old fuel injected, two of which are MANUAL 4WD, old beaters going as well, and have an almost matching pair of 1987 Ranger PIU with 5 spd standard trans., and an EV Bronco II with auto trans. Then my late MIL left me a 4 liter, NO fuel Explorer with auto trans, whose electronic 4WD is a technical nightmare. I've had my fair share of electronic 4WD truck disappointments both at work and at home, they always don't seem to work when you need them, hence keeping the two old IFT manual 4WDs. The 2, 87s have the German Cologne, early computerized, 2.9 liter (180 cid) V6, direct fuel injected engines with easy distributor ignition.

I bought the Ranger brand new back in 1987, and as Arlen mentioned above, the head gasket blown, after my warranty expired, had to a keeper and I'll never give it up, and still drive the 4WD Ranger PIU to this day. And I had bought the EV Bronco II for my late wife in 96, and now drive it regularly with good gas mileage, but with a replaced engine. And be very careful with that Sea Foam when trying to cleanse your fuel system, as I learned that the hard way in the company Thiokol arsenal, (mentioned above post), back in the mid 80s, and was stuck in a smashed mountain top wilderness, at a 2300 trucks call emergency, due to over cleaning blockage. Luckily, I was able to attach a siphon hose from the mechanical, in, cab, mid-engined fuel pump, out through a window, to the gas tank filler pipe, and got us out of deep doo doo, or they could have found us two frozen stiffs the next day... lol.

Mark as Spam · Posted On : 12/15/2022 9:50:03 AM
Like · Dislike

ackerashen
Joined On 7/8/2013 3:01:14 PM
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Lots of interesting stuff jamNjim. The cheap engine light went on in my 2000 Ford Ranger pickup truck with 150,000 miles on it. It was diagnosed with a P0300 cylinder misfire. Cost $300 to repair. I'm sure I'll get a look at EPS, which was and is dominated by the gasoline. The light went off and stayed off until I sold it at 180,000 miles before I moved to Ecuador. I got 64 mpg on that beautiful car. Ethanol removes carbon. One of the things that scares people with flex fuel vehicles is that after they have driven many miles on only gasoline, when they use E85 there is much smoke in the exhaust. To many minds that means ethanol cannot be good for ICEs. Exactly the opposite. I was interested in natural gas to power my pizza delivery fleet in 80s.

One of the things about it I liked is that the people who made the system also included using the excess energy from the alternator to break down water to feed the oxygen and hydrogen back into the fuel to be burned. Simple and elegant. At the time, I thought that natural gas would be an interim step that was cleaner and produced less carbon, but it is still a fossil fuel so the carbon is still fossil. Then I read David Blumer's "Alcohol Can Be a Gas" www.alcoholcanbeagas.com All gasoline injected vehicles can run on 50% alcohol now. With a download into the CPU it can run on any blend including 100% alcohol.

The difference between a Reefuel cut and a regular cut is software. According to Blumer the software used in American cars is purposefully ineffective, but one can buy good software that is easy to download. Alcohol is made from sugars produced by photosynthesis from water and CO2 from the air. The CO2 that is produced from combustion is not fossil. It was recently removed from the air and is being recycled or reserved. The lies, protests and other nutters that are left after the sugars are fermented make good animal feed. Newsom is so proud of his food waste program. It could make alcohol, but he wants EVs. He's Elvira pet.

Mark as Spam · Posted On : 12/15/2022 9:55:06 PM
Like · Dislike

ColdTurkey
Joined On 12/16/2019 8:14:38 AM
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Back in the mid-1990s I had 59 EDTA chelation treatments, driving 300 miles round-trip for each. The first 30 were at one week intervals and the last at monthly intervals. 12 EDTA patients were treated at the medical doctor's office in the morning and another 12 in the afternoon. There were no negative effects with me nor with anyone else that I am aware of. Chelation was supposedly for those at have some form of illness, but my treatments were for prevention only. Sitting there for 3-1/2 hours each visit I heard many impressive accounts of success, with one elderly lady mentioning to me that her angina disappeared after only one treatment. Today I am 85 with no known health problems, and, of course, I do not regret those 60 300 mile trips. (First visit there was for physical exam by doctor). Weight 180 lb now available again on amazon.com. I take it daily now.

Reply · Mark as Spam · Posted On : 12/14/2022 10:57:31 AM
Like · Dislike

Segstar
Joined On 5/10/2013 3:30:42 PM
Add as Friend · Send Message

Good for you cold turkey in taking a pro active approach to your health..Underscores individual responsibility totally..cheers to many good healthy one ahead

Mark as Spam · Posted On : 12/14/2020 4:47:50 PM
Like · Dislike

lee70578
Joined On 1/24/2014 4:03:10 PM
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Hi Cold Turkey - Yes removing heavy metals can take a huge load off a chronic illness as well as the proper detox benefits. I found the attitude of UK doctors towards heavy metal toxicity comical and rude. One time I was only mention the word 'mercury' and you are deemed a tinfoil hat wearer and get no help from the NHS - even worse if you mention related Gi candidiasis. Interestingly locums from the rest of Europe, Germany, Poland, were much more helpful and understanding of the issues. The only State help I was offered for CFS was talking therapy

Mark as Spam · Posted On : 12/15/2020 5:57:36 AM
Like · Dislike

forbiddenhealing
Joined On 2/21/2011 9:51:43 AM
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Consider several doses of NaCl/clay (oral/rectal/vaginal) and Vit C/chaling cards to bowel tolerance(1-5l/day/day RACA, MSM, KZ; all to charge mobilize metals into bloodstream (Mega C adds tons of e-electrons to make NACnic, work better)... Then add cilantro, plus greens-zucchini-onion-garlic-eggs to solve sulfur intake... chlorella and or charcoal/clay/bentonite/ultraclay/humasorbe for final elimination. Nu/Nag/K will deplete during detox. Best to have a hair metal/mineral analysis to know levels and metals to target/minerals to correct. Resent in Stress to chart progress. ...Aluminum is most common problem, use silica-rich horsetail/FLV water or silica caps. Metal toxicity/mineral deficiencies are root causes of oxidative stress/inflammation and every disease!

Reply · Mark as Spam · Posted On : 12/14/2022 7:33:54 AM
Like · Dislike

Guillermus
Joined On 6/7/2015 8:47:48 AM
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Yes, Randall. Aluminum (Al) is linked to many brain diseases, including Alzheimer's disease (AD), Parkinson's disease (PD), and multiple sclerosis (MS). Exposure to aluminum occurs primarily through the human environment, work, and diet. Dietary exposure to aluminum can be through food, food additives, water, and contamination of aluminum equipment/utensils. It has been reported that citrate can increase Al absorption if it is present in sufficient quantity in the gastrointestinal tract to compete with other binding ligands. for Al. Dietary calcium increases the rate and amount of Al absorption.

Among these reactions affected by Al, there are effects on neurotransmitter synthesis, such as normal transport, neurotransmitter synthesis, synaptic transmission, protein phosphorylation or dephosphorylation, protein degradation, gene expression, perioxidation, and inflammatory responses. Al can bind to the histone-DNA complex and induce chromatin conformational changes and induce DNA topological changes. Al can also alter gene expression by inducing decreased transcriptional and tubulin synthesis, apoptosis and gene expression, decreased transferrin receptor expression, altered RNA polymerase expression, altered expression of transcription factors (nuclear factors, c-jun, c-fos, glutathione reductase, etc.).

In addition, Al causes mitochondrial dysfunction and adenine triphosphate (ATP) depletion. When it comes to toxins, aluminum is even more sinister. Dr. Stephanie Seneff has shown that aluminum, even in extra-low extracellular space, completely changes the voltage in the cell walls (voltage-gated channels) and has a profound effect on the microstructure of that matrix.
www.ncbi.nlm.nih.gov/...PMC6242647 www.mdpi.com/...1bm (2020) www.ncbi.nlm.nih.gov/...PMC4322242 (2014)

Mark as Spam · Posted On : 12/14/2022 8:20:44 AM
Like · Dislike

Guillermus
Joined On 6/7/2015 8:47:48 AM
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In the process of eliminating aluminum from the body, we must ensure the correct level, especially those elements that are antagonists to it. These include iron, zinc, selenium, silicon. The ratio of zinc to copper is also very important. When zinc in the body can effectively defend itself against the effects of this toxic element. Protein-called metallothionein are responsible for this and require efficient metabolism. In children who have metallothionein (protein-called metallothionein with sulfur and neurodevelopmental problems), metallothionein do not work properly and therefore cannot properly adjust the zinc to copper ratio.

The correct ratio of these two elements allows the removal of heavy metals and aluminum from the body. The adequate amount of metallothionein also determines the correct development of the immune system and the nervous system, as well as intestinal health. Metallothionein are also involved in the production of hydrochloric acid in the stomach and affect the perception of the texture and flavor of food. Many children with eating disorders have impaired sensory integration and therefore do not perceive taste and texture correctly. This is related, among other things, to impaired methylation and the lack of production of the proper metallothionein.

Studies conducted on hair samples to determine the correlation between mineral deficiencies and the body's toxic load showed a relationship between magnesium and zinc deficiency, and elevated levels of mercury and aluminum. Aluminum intravenously ranks first among the toxic elements found in children's bodies. Various sources claim that 17% of autistic children tested have a problem with excess aluminum in the blood. Actually, this percentage can be estimated at 90%.
www.lifelongedu.au/how-to-remove-aluminum-from-a-childs-body/

Mark as Spam · Posted On : 12/14/2022 8:26:09 AM
Like · Dislike

forbiddenhealing
Joined On 2/21/2011 9:51:43 AM
Add as Friend · Send Message

Thanks Gu., Why I emphasize hair analysis/blood levels are inaccurate in determining ensuccinated bonbons. Best to know body chemistry.

Mark as Spam · Posted On : 12/14/2022 8:08:43 AM
Like · Dislike

Martix
Joined On 10/19/2007 4:48:18 AM
Add as Friend · Send Message

Dear Capt, what about EDTA ??????

Mark as Spam · Posted On : 12/14/2022 1:35:20 AM
Like · Dislike

forbiddenhealing
Joined On 2/21/2011 9:51:43 AM
Add as Friend · Send Message

Martix, You can try EDTA or DMPS, watch mineral levels.

Mark as Spam · Posted On : 12/14/2022 1:20:25 PM
Like · Dislike

uel
Joined On 10/27/2008 11:13:12 PM
Add as Friend · Send Message

Spirulina is known to reduce lead toxicity. Many papers are available on PubMed. pubmed.ncbi.nlm.nih.gov

Reply · Mark as Spam · Posted On : 12/14/2022 12:11:28 AM
Like · Dislike

Guillermus
Joined On 6/7/2015 8:47:48 AM
Add as Friend · Send Message

Thank you uel. The present study was designed to investigate the neurotoxic effects of PS in albino rats and to evaluate the ameliorating role of garlic as well as Spirulina maxima against such toxic effects. It could be concluded that the adverse effects induced by lead acetate were markedly improved by co-treatment with S. maxima rather than with garlic, concomitant administration of garlic and spirulina with lead acetate ameliorated most of the undesirable effects. Co-administration of Spirulina platensis reverses oxidative damage induced by acute administration of lead acetate to rats. An effect that was shown to be mediated by the induction of caspase 3 gene expression in a similar rat model of lead-induced neurotoxicity.

pubmed.ncbi.nlm.nih.gov/30793417/ (2019) In these studies, it can be suggested that spirulina reduces the damage induced by PS, thanks to its high phenolic content and antioxidant capacity journals.sagepub.com/...0960327120950025 (2020) Spirulina treatment also decreased the weight of epididymal white adipose tissue and increased plasma high-density lipoprotein levels, which are normally reduced after lead exposure. www.sciencedirect.com/...S1756464620305865 (2021)

Mark as Spam · Posted On : 12/14/2022 4:08:31 AM
Like · Dislike

Guillermus
Joined On 6/7/2015 8:47:48 AM
Add as Friend · Send Message

Spirulina platensis and Chlorella vulgaris can be safely used as an effective option for the biosorption of heavy metals from aqueous solutions. www.sciencedirect.com/science/article/abs/pii/S2213343719302931 (2019) Based on the properties of spirulina, this review summarizes the latest findings on the neuroprotective function of spirulina, its positive effects on glial cell activation and on the treatment of neurodegenerative diseases, particularly PD, AD and EM. Several lines of evidence bear witness to peculiar neuroprotective mechanisms, including antioxidant and anti-inflammatory activities in the brain parenchyma, making spirulina a potential pharmacological agent in the prevention and treatment of these neurological disorders.

www.mdpi.com/...1476 (2021) The research highlights that C. vulgaris or S. platensis therapy can modulate lead acetate-promoted testicular dysfunction via antioxidant, immunomodulatory, anti-apoptotic potentials promoted testicular histoarchitecture, and androgen receptor restoration with better impacts by S. platensis compared to C. vulgaris .
assets.researchsquare.com/files.php?x=1842&u=996-2186-4950-6904-3...(2021)

Mark as Spam · Posted On : 12/14/2022 4:08:47 AM
Like · Dislike

grulla
Joined On 1/17/2012 8:03:55 AM
Add as Friend · Send Message

Spirulina, aka blue-green algae, but there are some subtle differences:
www.livestrong.com/article/269398-what-is-the-difference-between-spiru...

Mark as Spam · Posted On : 12/14/2022 8:11:47 AM
Like · Dislike

rmelrose
Joined On 11/10/2011 8:59:01 AM
Add as Friend · Send Message

sel - Yes, the readings do down, AND if you read some of what Chris Shade, PhD is saying, some natural detox elements are not great at grabbing or and escorting these toxins completely out of the body. Test levels can go down because these toxins are not all leaving, and instead some are being redistributed in the body. Please do your own research. Here's a good place to start www.quickwhoweconsiffic.com/why-sp... - (**pecia louise, the natural approach is way more desirable, yet more complete elimination is important, READ what Nicholas posted today. He is absorbing with a high strength absorbtive elements: clays, shejfit, charcoal, zeolites, fulvic acid, whatever effective binders, to insure these toxins actually leave.**

Mark as Spam · Posted On : 12/14/2022 9:26:37 AM
Like · Dislike

BookGal11
Joined On 11/19/2012 10:22:08 AM
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Since the government went on a crusade against lead paint, saying it was harmful to children, and since we know the government cares nothing about our health, gotta ask why there would be such against lead paint specifically? Could it be it prevented them from spying on you in your house?

Reply · Mark as Spam · Posted On : 12/14/2022 11:17:53 AM
Like · Dislike

memorysthlete
Joined On 12/3/2022 12:29:34 PM
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This is a fan question. A dental office worker! X-ray your teeth without placing a lead neck apron over your chest. If lead is supposedly effective in protecting against ionizing radiation, it would stand to reason that it could theoretically shield from some of non-ionizing radiation. I'm quite sure (without re-reading it at the moment) that Dr. Mercola even states in his EMF*Net book (which I highly recommend to everyone) that it would stand to reason that whatever is good in treating ionizing radiation is beneficial in helping non-ionizing radiation, even though he doesn't recommend iodine as an EMF field to the book, I take iodine for that reason (among other benefits, including thyroid).

I certainly question everything when it comes to the government and its agenda in regard to our health. Clearly, it does not care about our health. It would almost be fair to say that it wants the worst for our health, and is trying to kill us (if we've learned anything since the beginning of the Plandemic). See my above post about aluminum and other nano particles. Better yet, visit www.geoengineeringwatch.org and navigate to the "health" section on the bottom left side, watch the interview with world-renown physician (and sick) Dr. Mercola mentioned Dr. Klinghardt about aluminum.

Again, I am not dismissing the dangers of ingesting or inhaling lead – but I think we should be looking into other metals, too, and also questioning why the government would lead anything for our supposed benefit. Has it banned fluoride? What about glyphosate? Could it be the government is more concerned in protecting its precious resources, and that lead could be one of them? Question everything, folks.

Mark as Spam · Posted On : 12/14/2022 11:57:15 AM
Like · Dislike

badboy2
Joined On 11/15/2010 5:08:52 AM
Add as Friend · Send Message

The base medal of Gold Crowns is lead. The dental industry was able to turn lead into gold$$. Something even Merlin couldn't do. Back in the 1960's the use of lead fishing weight was banned in England around the local fishing parks. This was because the ducks in the parks were swallowing the small lead weights they found and was causing severe digestive problems to the ducks. . The good news is that calcium will bond to lead and remove this heavy toxic metal from the body. The addition of magnesium and vitamin B6 will help calcium out of the soft tissue.

Reply · Mark as Spam · Posted On : 12/14/2022 10:02:04 AM
Like · Dislike

Guillermus
Joined On 6/7/2015 8:47:48 AM
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An interesting information, badboy. A work was carried out by an engineering team from the University of Buenos Aires (UBA), and was headed by the chemical engineer Basilio Depasquale. As he explains, 94% of lead batteries fall into disuse each year, a situation that causes serious damage to health and the environment. 2,500,000 tons of lead produced annually worldwide, three quarters of which are used to make batteries used in cars, phones, laptops and other industries. Of these "junk batteries" only 6% is recycled, and the remaining 94% remains in the power of the informal market, which creates a latent danger of contamination to the environment and the population. the researchers pointed out. Although there are references that indicate that batteries have a useful life of no more than 48 months, in practice they last from 3 to 10 years depending on their type and quality, as well as the operating regime to which they are subjected. Starter batteries have the shortest useful life.

Mark as Spam · Posted On : 12/14/2022 12:19:30 PM
Like · Dislike

memorysthlete
Joined On 12/3/2022 12:29:34 PM
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Interesting to hear about calcium in regard lead removal. I wouldn't dismiss that the assault on calcium in recent years is possibly another among a long list to fit the agenda of the Great Reset. Let's not forget they want to protect resources, that they're trying to cut back on dairy farming, and that they want people ill and on pharmaceuticals, not healthy and better. Informing individuals to cut back on calcium appears to check all of those boxes. Most Americans only consume about half the amount of calcium their bodies require. Research has shown calcium may be an effective weapon against high blood pressure and heart attack.

(Could the ongoing wave of cardiac deaths be contributed in part to a vitamin or mineral deficiency, including deficiencies in such things as thiamine, selenium?) Calcium also facilitates the movement of nutrients across cell membranes. In addition, it helps nerve cells to communicate normally, aids muscle contraction, and promotes blood clotting. Perhaps the issue with calcium is that it may hinder the absorption of zinc and magnesium. Making sure to get enough zinc and magnesium should solve that issue. Calcium can also hinder iron absorption. For many people, that could be a good thing, to prevent iron overload.

Mark as Spam · Posted On : 12/14/2022 12:55:51 PM
Like · Dislike

Shasha
Joined On 5/10/2007 4:23:27 PM
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EDTA helps remove Ca/lead etc from blood vessels.

Reply · Mark as Spam · Posted On : 12/17/2022 4:12:21 PM
Like · Dislike

fearphin
Joined On 4/11/2022 10:47:12 AM
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Chan Patterson, I remember him, he worked at Cal Tech. My high school physics teacher dragged him into our class one day and he explained how he determined the age of the earth ("4.6 times ten to the ninth"). They did a lot of experiments with various ratios in a series of old rocks and projecting back in time to the origin. He also was of the opinion that a contributory factor in the fall of the Roman Empire was lead poisoning in the cities classes – via Pb (plumbum) coatings in aqueducts, water pipes (plumbing) and wine containers. He knew lead.

Reply · Mark as Spam · Posted On : 12/15/2022 12:54:57 PM
Like · Dislike

Kachi
Joined On 3/23/2008 2:00:04 AM
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Because Lead complains with Calcium you don't want to be Calcium deficient. Many yrs ago a woman was diagnosed having MS severe she was in a wheelchair and crazy for mental health. Fortunately a Vet friend thought her signs were very like lead poisoning. And she made major recovery using Calcium and Vitamin C.

Reply · Mark as Spam · Posted On : 12/15/2022 4:54:45 AM
Like · Dislike

dejure
Joined On 6/23/2009 3:38:11 PM
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ANECDOTE: To this day, I do not know much of my clients did, but one past to have me go through chelation therapy, which required about thirty four hour sessions. That was about 2003 and heart attack number two in. I went the whole route at Yates, Washington, at Dr. Cranston's clinic. "Sweet Jesus" pushed for a six way bypass back then. I passed, after looking at the trajectories that were indicated would come from it. I'm still here, in spite of some bad habits. Accordingly, I have to wonder. . . . . The first treatment required a pit to go after lead. A lot of research and I learned and do still to enjoy the benefits of cilantro, a natural chelator of lead.

Reply · Mark as Spam · Posted On : 12/14/2022 11:08:46 PM
Like · Dislike

Barbara Charlo
Joined On 3/8/2007 9:13:41 AM
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Emperor Constantine probably was affected by the amount of lead in the water brought into Rome via the aqueducts... and the lead in the crystal and pottery. He was radically insane.

Reply · Mark as Spam · Posted On : 12/14/2022 5:07:46 PM
Like · Dislike

brianallen1
Joined On 5/31/2021 10:12:38 AM
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And gave the people Roman Catholicism in the 4th century.

Mark as Spam · Posted On : 12/14/2022 8:44:12 PM
Like · Dislike

fearphin
Joined On 4/11/2022 10:47:12 AM
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Patterson was originally known for determining the age of the earth, which he calculated based on lead isotope ratios found in old rocks. He also was of the opinion that the fall of the Roman Empire was partially due to lead poisoning in the ruling classes.

Mark as Spam · Posted On : 12/15/2022 12:54:41 PM

cznapplegmail.com
Joined On 6/8/2021 11:28:08 AM
Add as Friend · Send Message

Ethanol(Alcohol) is subsidized. GMO corn is gas. Bad for small engines. End ALL subsidies. Free market world!

Reply · Mark as Spam · Posted On : 12/14/2022 2:03:27 PM

eekersharr
Joined On 7/8/2013 3:01:14 PM
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Alcohol can be made from any fermentable material as Henry Ford said in the 20s. It can be made from the food waste that Newsom is so proud of turning into compost. The waste could be fermented first to make ethanol to fuel SF's fleet. The real problem with alcohol is it is too easily decentralized. Every community could produce its own alcohol from yard and food waste. Like Johnny Appleseed, we could plant apples and other fruits as decorative trees and use the fruit to make cider and then fuel grade alcohol. Sounds like a block party to me.

Mark as Spam · Posted On : 12/15/2022 5:23:15 PM

Like · Dislike

sky1365
Joined On 6/28/2021 2:17:34 PM
Add as Friend · Send Message

Well that explains the high amounts of lead that have been discovered as one of the deadly ingredients in the bioweapon jab. Keep up your outstanding articles of truth.

Reply · Mark as Spam · Posted On : 12/14/2022 2:44:11 PM

lel36357
Joined On 3/19/2015 5:50:10 PM
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This article and all the comments were incredible! Thank you so much. I am the 3rd generation of massively lead poisoned people from both sides of my family, living in the Land "BEA" in Missouri, and this life has been hell on earth. I can't bear to even recount so many aspects of it. But when a naturopath in Kansas City recognized my lead problem, he tried to chelate it out of me. It released so much lead into my blood that I simply could not stand to go back and ever try it again. But we didn't know about NAC or Bentonite Clay at the time.

I remember a time when I stupidly had taken a course in making stained glass windows, and every time I would try to cut the lead, I could not see it and the pieces were always the wrong size. Expanding my vocabulary became so aggressive, I realized I had better quit touching the lead. Think you everyone. This was cathartic and anquishing for me to read your marvelous comments. One last question: Does the excessive lead in a person attract EMF's? I suspect it does.

Reply · Mark as Spam · Posted On : 12/14/2022 2:31:27 PM

Like · Dislike

memorysbliste
Joined On 12/3/2022 12:26:34 PM
Add as Friend · Send Message

To answer your question, lead technically attenuates radiation. That is why they'll place a lead vest across your torso when receiving an X-ray at the dentist--the lightly packed atoms in lead block the x-rays from reaching the other side. If you're concerned about EMF's and metals, I'd be more worried about aluminum. You won't be able to find a lab to test for it, and if you do, they'll do about it, but you can bank on the fact that it's in your system (how much, depends on where you live and other factors). As with many health issues, I would instead treat the symptoms by looking for the root cause.

Here is a helpful video of world-renown physician Dietrich Klinghardt (a mentor of Dr. Mercola) of the Sophia Health Institute in Washington discussing the impact of aluminum, combined with EMF, fluoride and glyphosate:
www.geoengineeringwatch.org/world-renowned-doctor-addresses-climate-en... Dr. Klinghardt recommends the use of an ionic foot bath for aluminum removal, in addition to horsetail tea (which includes silica). Silica can help get aluminum of the system. Dr. Mercola sells a nice silica formula that is top five. Dr. Mercola has recently posted that Dr. Klinghardt recommends glycine to push glyphosate out of the system. In regard to mitigating EMF, I use Dr. Mercola's book, EMF's, as my guide.

Mark as Spam · Posted On : 12/14/2022 4:14:40 PM

Like · Dislike

memorysbliste
Joined On 12/3/2022 12:29:34 PM
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I don't dismiss the problems associated with lead, though the issue I see would be pinpointing if lead is one of the lead culprits in regard to heavy metals and individual health challenges. I would venture to guess heavy metal testing would be the best way to go about identifying root causes in regard to heavy metal toxicity. As an example, the Amen Clinics performed brain SPECT scans of 100 pilots and saw evidence of significant brain toxicity in two-thirds of them. Lead was never banned from small plane aviation fuel. However, it is likely used in the ongoing geoengineering operations that verifiably include aluminum, strontium, barium, molds, poly-fibers, nano-particles and graphene.

Dr. Mercola has previously acknowledged geoengineering, and one of his early mentors, Dr. Klinghardt, has discussed in detail the ramifications of aluminum. Dr. Klinghardt has said much of Alzheimer's and Autism is caused by aluminum from geoengineering, especially when it's combined with glyphosate, EMF and fluoride, to become a super toxin. Thus, how do we know that the pilots from the SPECT scans weren't actually suffering from aluminum (or other metal) toxicity? How can we say for sure that other neurological issues aren't actually due to aluminum poisoning?

This isn't to say lead is a cop-out, though that testing for all heavy metals is probably a wise choice. It's also worth noting that there are few labs in the world that will test for sans aluminum. As Dr. Klinghardt has pointed out, there's a cover-up there, and there were only a select few across the pond that could find it. Safe detoxing is probably good for everyone. I would encourage folks to also investigate aluminum removal (along with the other aforementioned elements listed above). The majority of us likely have aluminum floating around in our systems -- some more so than others.

Reply · Mark as Spam · Posted On : 12/14/2022 1:36:25 AM

Like · Dislike

memorysbliste
Joined On 12/3/2022 12:29:36 PM
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No regulation has required that lead be removed from lipstick. When lipstick was tested in 30 national brands, lead was found in 60 percent of them. In 2012, researchers at UC Berkley found lead in 24 of 32 lip products tested. The government had lead removed from gasoline and paint, but it was left in small aviation fuel. It is also used in geoengineering. Thus, lead can be in the air you breathe. A piece of lead the size of a grain is enough to kill an eagle. Did this poor bald eagle die from eating something tainted, or possibly by simply flying in tainted skies? Link: www.wdrb.com/news/bernheim-forest-bald-eagle-believed-to-have-died-fro...

Reply · Mark as Spam · Posted On : 12/14/2022 1:06:33 AM

Like · Dislike

memorysbliste
Joined On 12/3/2022 12:29:36 PM
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Should be looking at MTBE. ...LEAD might be a death benefit compared to MTBE this was added to gasoline to lower emissions.... The kicker is the EPA was shown how this was and the Oil Companies had already developed a safer and cheaper way to lower emissions but the EPA told them to use the MTBE. ... MAYBE THESE GOVERNMENT OFFICIALS WERE EATING LEAD

Reply · Mark as Spam · Posted On : 12/14/2022 9:37:02 AM

Like · Dislike

solbers12
Joined On 3/13/2018 8:01:14 AM
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According to IMDb, actress Allison Hayes was suspected died from lead poisoning from a calcium supplement. Are calcium supplements suspected for lead poisoning? Does a USP version help with this?

Reply · Mark as Spam · Posted On : 12/14/2022 9:27:50 AM

Like · Dislike

Guillermo
Joined On 4/7/2015 8:47:48 AM
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Yes, Dr. Henry Dieter prescribed a nutritional supplement to a young woman suffering from very painful periods. It was about film and television star Allison Hayes. In this case, it was a calcium supplement derived from bone bone. She took it daily but she got sicker and weaker. By 1967 she had to give up her acting career, since she could not walk without the aid of a cane. Hayes saw many doctors (32 in all) but to no avail. Hayes died of leukemia, which could have been triggered by lead poisoning or the more than 300 X-rays she underwent at the hands of those "22 frustrated doctors," the calcium supplement she took was made from horse bone. Lead is stored in our bones, so by taking supplements made from horse, we are exposing ourselves to lead.

This led to more than 70 brands of calcium supplements being extensively tested for lead content. As you can see at 3:39 in my video, the lead concentrations "varied in 300 different ways", and some were two, three, or even four times the amount a child can tolerate in a day. More than half of the most common "naturally sourced" supplements, such as those containing oyster shell, had lead concentrations above the maximum recommended amount for children. Calcium carbonate (calcium chelate or calcium from oyster shell) has also been found to contain concentrations of lead comparable to those found in animal bones. nutritionfacts.org/...lead-in-calcium-supplements/

Mark as Spam · Posted On : 12/14/2022 9:56:32 AM

Like · Dislike

jjl1348
Joined On 7/3/2019 5:14:49 AM
Add as Friend · Send Message

Very interesting Guy. Thank you.

Mark as Spam · Posted On : 12/14/2022 1:34:08 PM

Like · Dislike

memorysbliste
Joined On 12/3/2022 12:29:34 PM
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You want to avoid calcium supplements made from bone meal, oyster shells or dolomite, as they can contain high amounts of lead. Americans consume only about half the dietary calcium their bodies require. Calcium deficiency has been shown to increase lead absorption and lead retention. Thus, I would contend that an intake of less calcium is more dangerous than supplementing, as long as you can find a good source. Keep in mind that the body cannot absorb more than 500 mg of calcium at all time, and Vitamin D is needed to help absorb it. You also want to be sure to get enough daily magnesium regardless. Sea Pollagenic mineral water is a good source of calcium (at least before it was poisoned by Neolia, so take it for what it's worth).

Mark as Spam · Posted On : 12/14/2022 6:23:00 PM

Like · Dislike

Napper
Joined On 6/29/2006 11:54:54 AM
Add as Friend · Send Message

There is a lady (bedsafemama) who has lost many things for lead as both her children were lead poisoned. Look for her website, instagram and other accounts to follow her. She also has recommended some safe options and you can look them up on her website (has links to amazon and other places to buy these things).

Reply · Mark as Spam · Posted On : 12/14/2022 9:08:49 AM

Like · Dislike

Segstar
Joined On 1/3/2012 3:30:42 PM
Add as Friend · Send Message

I wonder if they still make bullets with Lead?? Today it is "gripped" through different avenues and what Lad me to ask the question... The end result is still the same... Got Lead in yer pencil?

Reply · Mark as Spam · Posted On : 12/14/2022 9:02:26 AM

Like · Dislike

rnelrose
Joined On 11/15/2011 8:59:01 AM
Add as Friend · Send Message

I think "they" are working on replacement, however lead shot is still an issue in deer season.

Mark as Spam · Posted On : 12/14/2022 9:11:02 AM

Like · Dislike

Segstar
Joined On 1/3/2012 3:30:42 PM
Add as Friend · Send Message

Dear lord, poor deer and humans animals eating the meat.... In the madness every going to stop.. Likely not, sneaky proponents will always find a way. By the way one of the best detoxifiers I came and across and use periodically is Modified Citrus Pectin. The lab results are stunning and the other low thing is does not deplete the body of other minerals. Dr Elias is the dude that formulated this gem. Expensive tho but worth it me thinks...

Mark as Spam · Posted On : 12/14/2022 9:17:06 AM

Like · Dislike

brianallen1
Joined On 6/17/2021 10:12:38 AM
Add as Friend · Send Message

Oh, dear! They sure are delicious and nutritious.

Mark as Spam · Posted On : 12/14/2022 10:21:46 AM

Like · Dislike

Segstar
Joined On 1/3/2012 3:30:42 PM
Add as Friend · Send Message

Aye indeed down to the very bone my good sir...

Mark as Spam · Posted On : 12/14/2022 10:26:55 AM

Like · Dislike

Guillermo
Joined On 4/7/2015 8:47:48 AM
Add as Friend · Send Message

The American Academy of Pediatrics (AAP) strongly supports regulations that reduce children's access to firearms. Lead poisoning has long been associated with the use of firearms. Numerous studies conducted since the 1970s have found elevated blood lead levels in people who frequent or work at indoor shooting ranges, including adolescents and young adults. In the United States alone, there are an estimated 14,000 to 18,000 shooting ranges. The discharge of dust and gases of Pb is a consequence of the shots of firearms. Shooting at shooting ranges results in the discharge of lead dust, elevated exposures that are associated with a variety of adverse health outcomes. Women and children are among the recreational shooters who are at particular risk and do not receive the same health protections as occupational users of shooting ranges.

Lead escapes into the air when the firearm is fired. These lead particles can enter the body when someone inhales them. Also, they can get into the body if someone eats or drinks after shooting (or working) if they don't wash their hands first. Blood pieces (BLL) > 10 µg/dl, was reported in some shooters in 51 studies, 18 studies reported BLL > 30 µg/dl, 17 studies > 30 µg/dl, and 15 studies BLL > 40 µg/dl. The literature indicates that BLL in shooters is associated with Pb aerosol discharge from guns and airborne Pb at shooting ranges, the number of bullets discharged, and the caliber of fired gun.

Mark as Spam · Posted On : 12/14/2022 11:23:28 AM

Like · Dislike

Guillermo
Joined On 4/7/2015 8:47:48 AM
Add as Friend · Send Message

Those most at risk of lead poisoning are employees who work to clean the interior of the enclosed shooting range, especially if they are tasked with sweeping or vacuuming lead-containing dust without wearing proper protective equipment such as gloves and respirator masks that prevent inhalation of lead-containing dust. The highest blood lead levels ever found were recorded by the Baltimore City Health Department in a regular sweeper attendant at a shooting range amusement park. Recreational and competitive shooters using indoor shooting ranges are also at risk. Children's Hospital Boston reported four cases of adolescents with elevated blood lead levels, all of whom were competitive shooters at an indoor range or target range. dspanal.biomedcentral.com/...10.1186/1471-0384-4-1 www.cdc.gov/.../...0304a0723.pdf ---- www.wb.mpha.gov.on.ca/content/uploads/sites/12/2015/04/Lead-and-Firing-... ---- epi.dph.nyshealth.gov/bwi/strobos/LeadExposureFiringRangeFactsheet.pdf

Mark as Spam · Posted On : 12/14/2022 11:34:02 AM

Like · Dislike

K.Schlenz
Joined On 7/24/2011 2:48:46 PM
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I was so happy that Dr. Mercola wrote this article on the dangers of lead. I would highly suggest Lead Safe Mama for additional information on products which contain lead. Tamara Rubin, the Lead Safe Mama had a child with lead poisoning and she is an activist who has been testing all kinds of products for lead. What surprised me was reading about the lead in salt! And all the glass and plates, cooking pans and pots, dishware and toys, and much more. It's everywhere. Many years ago my husband had a heat analyst done which found he had very high lead levels. 10 years later he was diagnosed with stage 4 cancer and heart disease despite eating clean and taking Q10 and other supplements.

Reply · Mark as Spam · Posted On : 12/14/2022 8:50:15 AM

Like · Dislike

Pine9958
Joined On 3/19/2015 6:42:04 AM
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Bentonite clay makes an effective detox drink. There is plenty of information here
eatbeautiful.net/how-why-drink-bentonite-clay-radiation-detox

Reply · Mark as Spam · Posted On : 12/14/2022 7:20:28 AM

Like · Dislike

jjl1348
Joined On 7/3/2019 5:14:49 AM
Add as Friend · Send Message

Bentonite clay.

Excellent article. Thank you.

Reply | Mark as Spam | Posted On 12/14/2022 4:06:30 AM

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