EDTA Suppositories for the Removal of Systemically Toxic and Cytotoxic Heavy Metals

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On a daily basis, our bodies come in contact with harmful compounds that can cause numerous health challenges and a decreased quality of life. Harmful toxins are found in the air we breathe, the food we eat, and the water we drink. In today's environment, these toxins come in many types. One type often overlooked by the traditional health care system is toxic heavy metals. Common metals such as lead, mercury, aluminum, cadmium, and arsenic are widespread toxic elements that are exceptionally harmful to human physiology. Awareness of the dangers of these toxic heavy metals has increased over the last decade, but real understanding of their systemic cytotoxic danger is still emerging.

A "heavy metal" is a metal with high atomic weight and specific gravity greater than four. With both slow and prolonged (chronic) exposure, as well as acute gross exposure, inorganic heavy metal contact generates systemic intracellular and extracellular cytotoxins to the brain, nervous system, and body. Nearly, any exposure to inorganic heavy metals is likely cytotoxic. Therefore, it's important to educate our patients and ourselves so that we take sensible protective and preventative measures against exposure.

There is also a fundamental difference between organic and inorganic metals and minerals. Organic metals and minerals occur naturally with carbon attached, generally in whole food sources. For example, the common banana contains *organically complexed* calcium, iron, magnesium, phosphorus, potassium, zinc, copper, manganese, and selenium. In trace amounts, these are not harmful; in fact, they are required and essential to maintain health. The body can process and utilize these organically complexed elements when consumed in their *organic* (containing living carbon) form. Inorganic sources, those without active carbon, come from synthetic (inert) chemicals and toxic environmental substances, where they are inhaled, absorbed through skin, or otherwise ingested to the detriment of the patient. Please be aware that those nutritional (non-toxic) elements we considered nutritional in the banana can be highly toxic when presented to the body in inorganic form.

Exposure at work and/or home to heavy metals is of concern. The most dangerous metals are the heavy metals, such as antimony, arsenic, bismuth, cadmium, cerium, chromium, cobalt, copper, gallium, gold, iron, lead, manganese, mercury, nickel, platinum, silver, tellurium, thallium, tin, uranium, vanadium, and zinc. As mentioned before, many of these organically complexed elements (metals) and minerals are actually good for the body and are required to maintain a proper level of energy, health, and wellness. However, a single exposure, large or small, of any one inorganic metal may cause acute and/or chronic toxicity. Heavy metal toxicity could lead to a number of health problems, including, but not limited to, damaged or reduced mental and central nervous function, lower energy levels, damage to the brain, blood composition, lungs, kidneys, liver, and other vital organs. Long-term exposure

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with EDTA was the standard treatment for lead poisoning. Due to its rapidly expanding acceptance, ground-breaking doctors like Norman Clark, MD, observed peripheral benefits such as improvement in cardiovascular health (i.e., cholesterol and arterial plaque removal) and thus discovered EDTA's ability to chelate more than just inorganic lead.

Since 1955, hundreds of papers have been published on the effects of chelation therapy in a variety of chronic diseases, with the vast majority reporting favorable results. EDTA, a man-made amino acid, works best when it is introduced to the body directly into the blood. While intravenous (IV) administration has been around since the late 1940s, the oral route of administration was introduced in the mid-1970s, and the use of EDTA in suppository form was developed in the late 1990s.

Bruce Halstead, MD, a pioneer in EDTA Chelation therapy, suggested that placing EDTA in a rectal suppository could be an effective alternative to the IV route of administration, especially in the treatment of lead toxicity for children in third-world countries who could not easily tolerate or afford IV Chelation therapy. This began the introduction of rectal administration of EDTA in the late 1990s. Research has shown that EDTA suppositories can remove toxic metals from the body very effectively. A study conducted by Ted Rozema, MD, showed that ten consecutive days of treatment with EDTA suppositories significantly reduced blood lead levels in children exposed to high levels of lead. Between the introduction of 1,000 mg. suppository and the time a urine specimen was collected nine hours later, the urinary lead excretion in the children dramatically increased from 4.23 mcd/gL to 325.55 mcd/gL[2]. In another study conducted by Maureen Pelletier, MD, CCN, at the Living Longer Institute in Cincinnati, Ohio, EDTA suppositories were tested on a number of patients. The results showed significant increases in the secretion of arsenic, lead, and cadmium through the bowels and arsenic, lead, mercury, cadmium, and nickel through the urine.[2]

EDTA suppositories are gradually gaining momentum in alternative medicine as an effective substitute for IV administration. For EDTA to be most effective, it should be introduced directly into the blood. This is why it has traditionally only been offered intravenously. Although the IV administration is well-known and has been used for many years, there are disadvantages. The invasive IV administration procedure requires the patient to visit their doctor's office to receive EDTA by an IV drip for one to three hours, usually once to twice weekly for at least 30 treatments. A single large dose of EDTA, which can range anywhere from 1,500 mg to 3,000 mg, depending on body weight, is administered over a short period of time, which can be very strenuous on the liver and kidneys. This is why liver and kidney function must be closely monitored during IV chelation. Some patients may not qualify for repeated IV treatment due to stenosis, occlusion, vein integrity, or other complications associated with long-term IV administration. Finally, the cost for IV chelation therapy can run into the thousands of dollars.

With EDTA suppositories, the disadvantages of IV therapy are avoided, while an effective treatment is maintained. The use of a suppository is non-invasive and can be done from the comfort of a patient's own home without the direct supervision of a doctor. EDTA is administered at night before the patient goes to bed, which is the best time of day to chelate. Since the human body is in a state of rest and repair while sleeping, the EDTA moves through the blood more slowly providing more effective results. In a study done by The Biological Test Center, EDTA via rectal route of administration has been shown to stay in the body longer with an eight-hour half-life compared to a 1.5 hour half-life with the IV route, and the blood-to-tissue ratios (EDTA in blood/tissue) are higher with suppositories, allowing the EDTA more time to chelate.[3]

There is also an oral route of EDTA administration. The biggest disadvantage is that the EDTA has to pass through the gastro-intestinal (GI) tract, where digestive enzymes and acids break down the EDTA and diminish its effectiveness. Although no two studies can agree on an exact figure, consensus says

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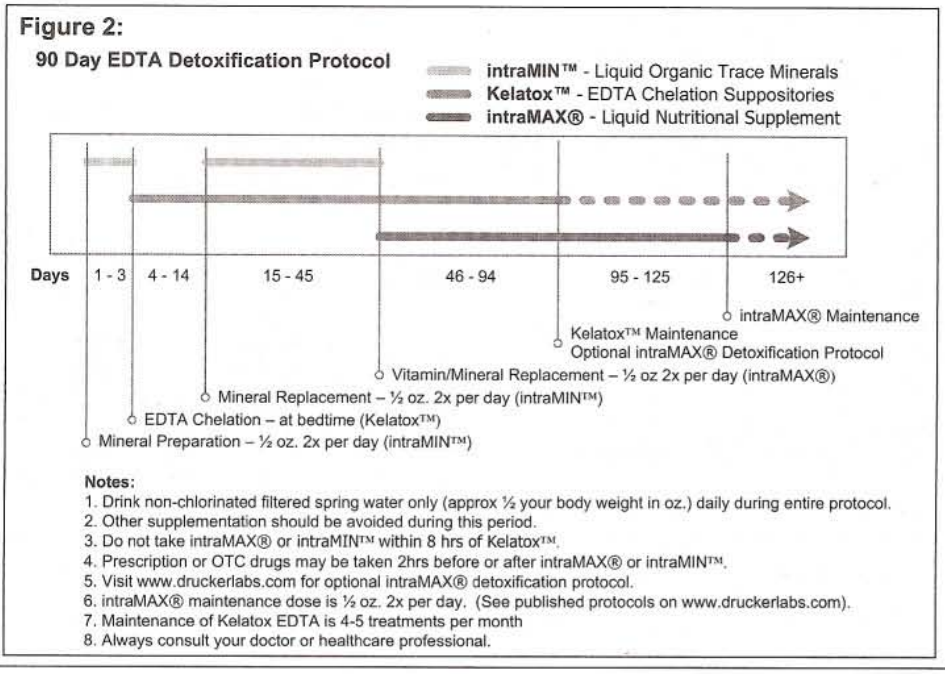
Figure 2:



Notes:
1. Drink non-chlorinated filtered spring water only (approx ½ your body weight in oz.) daily during entire protocol.
2. Other supplementation should be avoided during this period.
3. Do not take intraMAX® or intraMIN™ within 8 hrs of Kelatox™.
4. Prescription or OTC drugs may be taken 2hrs before or after intraMAX® or intraMIN™.
5. Visit www.druckerlabs.com for optional intraMAX® detoxification protocol.
6. intraMAX® maintenance dose is ½ oz. 2x per day. (See published protocols on www.druckerlabs.com).
7. Maintenance of Kelatox EDTA is 4-5 treatments per month
8. Always consult your doctor or healthcare professional.

may result in slowly progressing physical, muscular, and neurological degenerative processes that mimic Alzheimer's disease, Parkinson's disease, muscular dystrophy, and multiple sclerosis.[1]

Acute toxicity is relatively easy to diagnose due to immediate and severe symptom onset, usually with known exposure or ingestion. Symptoms of acute heavy metal toxicity may include the following:

- nausea
- vomiting
- headaches
- sweating
- difficulty breathing
- neuro-cognitive difficulties (speech, reasoning)
- convulsions

Symptoms of chronic exposure are similar to those of acute exposure, but are much harder to associate to a specific cause, because the symptoms generally develop slowly over years of sustained exposure. Patients may fail to seek treatment or diagnosis due to the chronic nature of symptoms. Diagnosing a person with chronic heavy metal exposure can be difficult, because chronic exposure symptoms may present themselves as various other ailments and can include the following:

- nausea
- impaired cognitive, motor, and language
- nervousness and emotional instability
- insomnia
- muscle and joint pain
- allergies
- headaches
- general and chronic malaise
- weakened immunity
- auto-immunity
- intestinal dysbiosis, irritable bowels, etc.
- allergies
- pain and inflammation

There are several valid testing methods that are effective in determining the level of heavy metals in the body. A few examples include fecal analysis and urinalysis, hair analysis, and blood analysis. Each type of test may yield a slightly different picture of what is going on in the body at a specific time. Hair analysis gives a snapshot of the inert heavy metals in the body at the time of the hair's growth. Toxic elements may be 200 to 300 times more highly concentrated in hair than in blood or urine; therefore, hair has become one of the tissues of choice for detection of recent and chronic exposure to inorganic heavy metals. Specific blood analysis can measure the level of inorganic heavy metals in the body at the time the blood is drawn. Also, specific fecal analysis and urinalysis can measure the level of inorganic heavy metals being excreted by the body pre- and post-treatment. None of these tests are meant to be stand-alone, but should be used in conjunction with one another to present a comprehensive view of the role inert heavy metals are playing in a person's body.

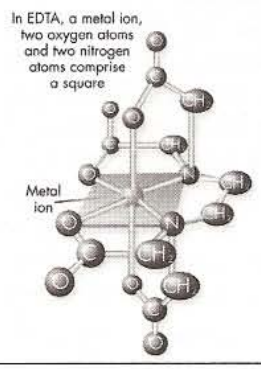
Can a body rid itself of inorganic toxic heavy metals? No. The human body has no physiologic or metabolic capacity or ability to remove inert (toxic) heavy metals from extra-cellular spaces, interstitial fluids, or fatty tissue. Because of this, chelation therapy has become the treatment of choice for this process. Chelation therapy helps reduce the levels of inert heavy metals in the body, thereby reducing the production of free radicals and preventing peroxidation or breakdown of cell membranes, DNA, enzymes, lipoproteins, and many other key metabolic and neurological functions. Additionally, reducing "free-radical" threats and damage may free up the body's natural healing mechanisms, so it can focus on halting and possibly even reversing the progression of disease.

What is a chelate? A chelate is a molecular compound, such as Ethylene Diamine Tetraacetic Acid (EDTA), formed when a metal ion is bounded by two or more atomic groups within a molecule. EDTA has been known as a broad-based chelator of heavy metals since the 1920s when it was used industrially, and now is one of the most widely used chelating agents in medicine with the capacity to attach and remove (chelate) almost every positive ion in the periodic table. (See Figure 1 for EDTA affinity.)

The history of EDTA's use in treating humans goes back nearly 60 years. During the 1950s, EDTA was utilized by US Navy doctors who had to deal with lead poisoning in sailors who had been tasked with painting ships with inorganic (inert, synthetic, and toxic), lead-based paint. By the mid 1950s, chelation ➤

Figure 1:

Calculating the formation constant, or the stength of the metal/ion chelate



The chelation of metal ions by deprotonated EDTA molecules (designated Y^{-4}) can be quantified by a term called the **formation constant** (K_f), and is calculated using the following equation:

$$K_f = \text{the EDTA-metal complex concentration} \times \left[\frac{1}{(\text{metal ion concentration})(Y^{-4}\text{ concentration})} \right]$$

The concentration or value of each metal/ion (see chart to the right) is directly correlated to the strength of the bond formed when attached to an EDTA molecule. The higher the metal/ion concentration, the stronger the chelate or bond.

Source: CRITICAL STABILITY CONSTANTS, Volume 1, p204-211 A.E. Martell & R.M. Smith 1974

metal	ion	metal/ion concentration
Iron (Ferric)	Fe^{3+}	25.10
Mercury	Hg^{2+}	21.70
Copper	Cu^{2+}	18.80
Lead	Pb^{2+}	18.04
Nickel	Ni^{2+}	18.00
Zinc	Zn^{2+}	16.50
Cadmium	Cd^{2+}	16.40
Aluminum	Al^{3+}	16.10
Iron (Ferrous)	Fe^{2+}	14.32
Manganese	Mn^{2+}	13.70
Calcium	Ca^{2+}	10.69
Magnesium	Mg^{2+}	8.79
Sodium	Na^{+}	1.66
Potassium	K^{+}	0.80

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that passing through the GI tract reduces the absorption rate of oral EDTA to approximately 5%-15%. Because of this low absorption rate, a patient would have to take approximately seven to 20 times as much oral EDTA to get the same amount of EDTA in the blood as they would with the IV or rectal route of administration. Two main problems with taking such large quantities of oral EDTA to achieve similar results is that it exponentially increases the cost and could irritate the stomach and/or intestines. Though the oral route of administration is used, it's commonly known that EDTA cannot hold its integrity passing through the GI tract.[4]

While EDTA Chelation therapy can be effective in removing heavy metals from the system, it does come with a few side effects. The patient may experience a number of side effects from detoxification including aches, fatigue, or rashes. These are all temporary and will likely cease once the body is cleansed. The more important issue for the physician is that EDTA's affinity for positive ions will remove beneficial minerals from the body. (See Figure 1.) To restore homeostasis, the patient must receive a mineral supplement with all organic trace minerals formulated in proper balance. Use of an organic carbon-based mineral supplement is the most appropriate choice.

Nature intended the body to receive complex nutrient compounds bound with organic carbon from whole food sources. Unfortunately, modern agricultural practices have depleted much of the naturally occurring, organic soil-based "microcomplexes™" from our soils, and thus they are no longer in our food. What has been put into our depleted agricultural soils are herbicides, pesticides, fungicides, synthetic chemicals, heavy metal toxins, and a host of other harmful additives the body takes in. A supplement containing these organic carbon microcomplexes works in concert with EDTA to attach to unwanted elements and compounds in the body and further detoxifies the system.

Carbon exhibits a remarkable affinity to bond with other small atoms, and its small size makes it capable of forming multiple bonds. Carrying high electronegativity (2.55/4.0) on the Pauling Scale, organic carbon (as when formulated in solution using intraCELL™ V Technology) is attracted to most other elements that carry lower electronegativity. It bonds easily with toxic substances, causing depolymerization of nutritional complexes and compounds of excessive size or density that enter the body. They are changed into simpler, non-toxic, organic polymers, stimulating mitosis and purging the neutralized toxin via the cytochrome P-450 II pathway, urine, and epidermis.

Through polymerization, organic microcomplexes combine with mineral molecules and trace elements to make them part of the microcomplexes' own structures. This action makes the mineral molecules and trace elements available to the cell in organic form. In the same process, organic microcomplexes combine with food nutrients, enzymes, co-enzymes, peptides, amino acids, herbal extracts, phyto-nutrients, and other beneficial elements and molecules and transports these fractions into the cell. This exceptional nutritional uptake is particularly important during and after EDTA chelation.

Successful EDTA chelation requires a 90-day sustained application, with additional time required for nutritional preparation and recovery. (See Figure 2, which contains a suggested chelation protocol.) A combination of intraMIN™, Kelatox™, and intraMAX® provides a powerful and convenient at-home EDTA solution.

Notes

1. International Occupational Safety and Health Information Centre. *Basics of Chemical Safety.* Chapter 7. Geneva, Switzerland: International Labour Organization; September1999.
2. Unpublished studies were conducted for World Health Products, Inc., Salt Lake City, Utah.
3. Ellithorpe R, Masur P, Gum G, Button G, Pfadnhauer EH, Settineri RA. Effective and efficient absorption, distribution, and elimination of cana EDTA rectal chelation suppositories. *JANA.* Publication pending.
4. Elia M, Behrens R, Northrop C, Wraight P, Neale G. Evaluation of mannitol, lactulose and 51Cr-labelled ethylenediaminetetra-acetate as markers of intestinal permeability in man. *U.K. Clin Sci* (London). 1987 Aug;73(2):197-204.

Ronald E. Partain Sr., RPh, CCN, graduated from the University of Arizona Pharmacy School in June of 1968 and started his own pharmacy practice in 1974. In 1984, he began a compounding practice and was one of only five compounding pharmacists in the state of California working with various types of hormone and pain medicines. In 1996, Mr. Partain created a vitamin and food supplement section in his pharmacy, believing the industry was heading in that direction and subsequently completed his certification as a clinical nutritionist (CCN) in 2000. His focus now is really multi-faceted as he looks at helping people understand their hormones and the relationship of exercise, diet, and proper nutrition, enhancing cellular energy and cleansing for overall well-being. Mr. Partain also takes serious interest in detoxification of heavy metals and other environmental toxins, enhancing and improving body energy at the cellular level and optimizing the heath and function of the intestinal tract, liver, kidneys, and adrenal system.

Richard Drucker, BS, MS, ND, PhD, has a Masters of Science in Natural Health and Doctorate in Naturopathy as well as a Doctorate in Natural Health with a specialty in natural Immunology. He is a highly respected doctor in the field of natural health and the CEO of Drucker Labs, which manufactures and distributes health, wellness, and nutritional products. These products use a breakthrough technology called intraCELL™ V, which yields unique carbon-bond organic microcomplexed™ structures that are highly bioavailable and extremely effective. His patient practice focuses on Quantum Physics and nutritional therapies.

Joe Fawcett, DC, CCSP, is the spokesperson and in-house doctor for Drucker Labs. He received his BA from Tabor College, Hillsboro, Kansas, where he attended on a football scholarship, was President of his graduating class, and the outstanding graduate in the History department. He graduated from Palmer College of Chiropractic, Davenport, Iowa, where he was awarded the prestigious John Connolly Award as the outstanding graduate of 1984. Dr. Fawcett had a successful chiropractic practice in Fresno, California until 2001. He is a Certified Chiropractic Sports Physician and a board eligible Chiropractic Orthopedist.

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