

## **Summary of Chelation Therapy**

**this is IV chelation for metal detox, not chelation for cancer therapy**

EDTA stands for disodium salt of ethylene diaminetetraacetic acid. That's a mouthful! Now you know why physicians just call it EDTA. EDTA is also sometimes known as disodium edetate or edethamil disodium.

EDTA is a synthetic amino acid that was developed in Germany in 1931 for use in the printing textile industry to prevent hard water stains during the dyeing process. EDTA is a chemical chelator, a substance which forms a strong chemical bond with certain other molecules, changing their basic properties. Its primary effect in medical use is that it binds to unwanted calcium and heavy metal molecules and carries them safely out of the body. All metals, even essential nutritional minerals, are toxic when present in the body in excessive amounts or in the wrong places. By removing excess metallic elements in the body, EDTA improves calcium and cholesterol metabolism and curbs the production of "free radicals", a common chemical reaction that is believed by many scientists to be an important contributing factor to conditions such as cardiovascular disease, cancer, diabetes, and other life threatening diseases.

EDTA has been used in many industries since the early 1940's, and can be found in such products as foods and animal feeds (as a preservative), personal lotions and cosmetics, household cleaning products, water softeners, and pharmaceutical products, to name only a few. For many years, it was used by blood banks to prevent collected blood from clotting. EDTA is widely known to be safe for human use at appropriate levels of consumption.

The word chelation comes from the Greek word chele, meaning "claw". A chelating substance like EDTA chemically traps certain minerals within a powerful claw-like grasp, encircling them within a molecular "ring" structure and transporting them safely out of the body. When this happens, the trapped molecule, such as calcium, lead, or mercury, is said to have been chelated.

Chelation is a process that occurs naturally in your body many millions of times each day, even more so if you are feeling stressed out, or if you are exposed to toxic elements such as cigarette smoke, pollution, or any one of the innumerable chemicals that are found in our food, water, air, and the products which we use every day. When you eat iron-rich foods, it is a chemical chelation process which takes the iron and turns it into hemoglobin, the blood cells which are responsible for carrying oxygen to all parts of your body. The "antioxidant" vitamins C and E are natural chelators that help to keep dangerous free oxygen radicals under control.

The enzymatic activities in every cell in your body are carried on through the exchange of ions through the cell membrane, a process that could not happen without chelation chemistry. Amino acids, such as lactic acid, the substance that is created in your muscles as you exercise, are important natural chelators which allow the body to absorb necessary nutrients. Insulin, the natural protein hormone that regulates the body's sugar intake, is a chelate of the mineral zinc.

Natural chelators like vitamins C and E will enhance and maintain normal circulation and detoxification in a healthy person. So eat right and keep taking those multivitamins! But when circulation becomes blocked through disease, or when exposure to toxic levels of heavy metals

causes poisoning, the body needs the assistance of a stronger chelator to overcome this imbalance which leads to chronic degenerative health problems.

EDTA Chelation Therapy removes excess calcium from areas of the body where it is abnormally deposited, such as atherosclerotic lesions, arthritic joints, traumatized tendons and ligaments, and kidney and gall stones, while leaving the important stores of calcium in bones, teeth, and cellular metabolism intact. Chelation Therapy also chelates lead, mercury, cadmium, aluminum, and other metals and carries these toxic materials harmlessly out of the body. Chelation Therapy for cardiovascular disease triggers the breakdown of plaque, renewing blood flow, increasing the flexibility of arteries, and improving circulation.

EDTA is available in several forms, and there are various other substances which also act as chelators. EDTA is also available orally and in suppository form. Physicians have differing opinions on how well each of these forms work, but all agree that the most effective method of treatment with EDTA is intravenous. Oral or suppository forms of EDTA should not be taken without a doctor's supervision. While EDTA Chelation Therapy is an extremely safe procedure, EDTA is considered to be a "moderately toxic substance" and could have adverse effects if an overdose is taken.

There are many other agents which are used for the removal of heavy metals from the body. This is a list of the primary ones used today. There are differing opinions as to the effectiveness and safety of these substances; this listing does not indicate the author's support or use of any of these agents.

DMSO (dimethyl sulfoxide) is another excellent chelator developed back 1866 by a Russian chemist. DMSO has the ability to dissolve most any drug (increasing their bio-availability) and strengthen their effects. DMSO is one of the most potent free radical scavengers ever discovered.

DMPS (Sodium 2,3-dimercaptopropane-1-sulfonate) is an intravenous chelator which was developed in the 1950's in the former Soviet Union. DMPS has been used to chelate heavy metals such as zinc, copper, arsenic, mercury, cadmium, lead, silver, and tin. DMPS is marketed in Europe under the trade name Dimaval.

DMSA (dimercaptosuccinic acid) is an oral chelating agent manufactured under the trade name Chemet and FDA approved for the treatment of heavy metal toxicity. DMSA is capable of penetrating the body's fatty lipid membranes including the central nervous system, and is one of the few chelators which can remove mercury from brain cells.

DFO (deferoxamine/Desferal) is a chelating agent which is given intravenously to remove excess free iron and aluminum.

D-Penicillamine is another oral chelating agent used to remove excess free copper from the body in the treatment of Wilson's disease and rheumatoid arthritis.

NDF (Nanocolloidal Detox Factor) is a newer chelating agent which is said to be a potent chelator. According to Bioray, the manufacturer, NDF is made from certified organic, raw, whole foods. NDF is also used in the treatment of autism.

In addition, vitamins C and E, the mineral selenium, and lactic acid, a substance which your body generates naturally as the result of exercise, are natural chelators, and many people choose exercise and over-the-counter supplementation with antioxidant vitamins as a preventive measure against vascular disease and toxic metals. Other substances which have been used to eliminate heavy metals are chlorella, chitosan, cilantro, and hyaluronic acid. All of these agents work in different forms to remove heavy metals from the body. A physician familiar with chelation therapy will be able to help you find a treatment that best suits your condition.

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#### REVIEW (by Dr. Reuben DeHaan)

The above mentioned chelators can be wonderful, but the person going through chelation must be able to eliminate the metals. You will need to support the kidneys and liver. You may want to follow the suggestions under step #4 in the GWSW program as well as use the Liquid Detox as it is a natural chelator. It goes one step further and helps to break the molecules down into strands that are not harmful.