

### **Does Chelation Do Anything?**

That's right folks, we wouldn't survive without it! Chelation is a term that refers to an organic chemistry molecule that holds a metal atom or ion. Probably the most recognized chelate would be hemoglobin or chlorophyll, the substances that carry oxygen around in our blood and that help plants to make energy respectively.

The term chelation also is used to refer to a type of medical therapy in which special compounds are used to remove heavy metals from the human body. Certain metals are vitally important for our survival, without iron we wouldn't have oxygen transported efficiently in red blood cells, in fact we wouldn't have life itself; the enzyme systems that burn sugar, fats and other molecules to get energy rely on metals to capture that energy.

Like so many things however, it's possible to have too much of a good thing which then makes it a not-so-good thing. Even too much iron in the body (a condition known as hemochromatosis) can cause serious disease and shorten life. These atoms and compounds have to be kept in the right portions and balance that God created in us or problems will arise.

“Chela” is the ancient Greek root for the term “claw”. Chelating compounds literally grab a hold of metals and hang on to them, allowing them to be dealt with more appropriately by our bodies' chemical systems.

Chelation therapy is the process in which a compound is given to help bind and remove toxic heavy metals.

Heavy metals are all over our environment. They literally started out as star-dust, formed from nuclear fusion, now deposited here on Earth. They do many good things for us, but some of them are quite toxic, though not all are immediately apparent.

It turns out that heavy metals like to hide when they get into the body, they especially like bone & fat tissue, especially the insulating cells around the nerve cells. Once these toxic heavy metals hide out they are still active, causing problems with our metabolic processes. They can inactivate certain enzymes, damage membranes and other structures, in short they're anything but good for us.

How does the body handle the damage that's being done? Ideally we have an intact *anti-oxidant system* that's kept in good working order by plenty of B-Complex vitamins and other antioxidants such as the carotenes found in deeply/brightly colored fruits and vegetables, Vitamin E helps in the lipid membrane structures of the cells, Vitamin C, Reduced Glutathione, Lipoic acid, Selenium and other anti-oxidants are important sources of free electrons that help to stabilize the heavy metal ions and allow them to be safely taken out of the cell and the body. If we're not able to get enough good nutrition or genetically deficient in our ability to produce the various enzymes and cofactors needed, then great damage can result. It's been documented that children can become fully autistic after exposure to Thimerosal a preservative in vaccines. The reason that

only some children that become autistic after their vaccinations is that those are the ones who don't make enough reduced glutathione to allow safe clearance of the mercury.

How does chelation help heart disease? This form of therapy was discovered around 1935 but between problem such as a World War and low emphasis on heart disease at the time, it never caught on as much, so it wasn't highly profitable and marketable by the drug companies. Chelation helps to reverse atherosclerosis or hardening of the arteries. It does this by augmenting our anti-oxidant system, it donates electrons to the insoluble oxidized LDL-cholesterol particles with the Vitamin C given in the same infusion and helping to dissolve the plaque.

Atherosclerosis is a problem in which normally soft pliable arteries become hard and start to clog up. Plaque is a complex of cholesterol-containing molecules such as oxidized LDL and calcium. When chelation therapy is done for heart and vascular disease, it's given with high doses of Vitamin C and certain B vitamins to promote the reduction, or stabilization of the oxidized LDL-cholesterol allowing it to dissolve back into the blood stream while an artificial amino acid Ethylene-Diamine-Tetraacetic Acid (EDTA) which helps to grab calcium (and other more toxic metals) and allow the kidneys to remove them from the body. The IV infusion is given with plenty of anti-oxidants to help the body avoid harm as these toxic metals come out of their hiding places. Extreme care must be used when this therapy is given to folks without good kidney function. When the therapy was first used there were problems with dosing and speed of administration which caused kidney failure and problems due to extremely low blood calcium which can be dangerous, causing seizures and other problems. When appropriate protocols such as those recommended by the American College for the Advancement of Medicine (ACAM) problems are rare.

What about osteoporosis? Won't chelation cause it to get worse? No, actually it can even improve that condition due to the cyclic nature of bone creating hormones being released into the circulation. EDTA chelation also has anti-inflammatory effects to help the arterial wall to be repaired causing less risk of future plaque rupture. Studies have been done to show that about 90% of patients have significant improvement after EDTA chelation. EDTA Chelation also has a "youthifying" effect when given by IV at much higher concentrations than are available orally. It's also useful for treating arthritis, diabetes, hypertension and other "disorders of aging".

Why don't more people get this life-saving therapy? Probably the biggest problem is misunderstanding of what chelation is and does. It seems to work very well on the microscopic blood vessels in the body. The cardiologists and interventional doctors tend to not "believe" in it. Currently the National Institute of Health (NIH) is funding the Trial to Assess Chelation Therapy (TACT), the largest study of its kind to investigate how well it works and hopefully determine who the best candidates for therapy will be. In many European countries, routine heart bypass surgery is not done until after a trial of chelation therapy, as this therapy is much less expensive and helps open vessels, preventing the need for as many open-heart surgeries and catheter placed stents.

Chelation is the ONLY proven therapy to remove heavy metals. There are other agents used for chelation, some work better for different metals. DMSA or meso-2,3-dimercaptosuccinic acid works best on removal of mercury and arsenic. DMPS or 2-3-dimercaptopropane-1-sulfonate it also works well on arsenic & mercury but is more toxic than DMSA. There are other agents that will bind to heavy metals, many enzymes do this. Not all of these will allow the toxic metals to be removed from the body however.

One of the theories of aging is that it's due to an accumulation of toxins over the life of the individual. Many patients who have completed chelation have commented on how they *feel* younger, more energetic, fewer aches and pains etc. It's possible to just look at the skin and see improvement in appearance. Many practitioners of anti-aging medicine feel that chelation is the logical first place to start this form of therapy. A face lift or other plastic surgical procedure improves appearance until gravity again takes hold... Chelation removes toxins and provides rejuvenation at the sub-cellular level. The EDTA commonly used in chelation is a good anti-oxidant all by itself, this is part of how the compound works. It's also given in concert with a variety of other vitamins in the infusion. We all know that given a choice between listening to a musician playing an instrument or going to a full orchestra's performance which will sound better. The same can be said of using a combination of agents that augment each other for a synergistic effect. That's how chelation is done today.

The vast majority of people will have heavy metals in their system by their 4<sup>th</sup> decade. This is not healthy for us, but it can provide some good news; these patients, if tested with a chelation-provoked urine test will show evidence of heavy metal toxicity. This provides an avenue to approach insurance companies for reimbursement to the tenacious patient who is willing to spend some time on the phone and in correspondence with the insurer. As noted above, this is the ONLY treatment medically indicated to remove toxic heavy metals. Since we've all been exposed to these poisons, it makes sense to try to rid ourselves of them. The other benefits are that we can open our blood vessels for better circulation—maybe less need for Viagra and it's cousins too! We also have a good anti-aging therapy that starts working at the cellular level—not just a skin-deep face-lift.

Consider not only your life span, but keep in mind the QUALITY of your later years, this can be enhanced with chelation!

To Your Health!

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