

Chelation Therapy

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Introduction

Important scientific discoveries often occur coincidentally. The history behind the development of chelation therapy certainly confirms this fact. In the Thirties, EDTA, the active component in chelation therapy, was discovered by a German, Munz. He had been searching for a substance which could soften hard water, and it appeared EDTA was highly effective in doing so. But EDTA had the capacity to do much more. The substance happened to have a strong affinity for (toxic) heavy metals such as lead, mercury and cadmium, and actually binds with them.

For this reason, EDTA was initially used in treating acute lead intoxication. Lead, an extremely toxic substance to the human body, was bound to EDTA injected into the blood stream and thus simply removed from the body during urination. With EDTA, however, fate became the mother of invention.

Patients suffering from cardiovascular disease, who where being treated with EDTA for acute lead intoxication, noticed improved stress tolerance and less chest pain upon exertion. They were also able to walk longer

distances. Surprisingly, chelation therapy appeared to have produced an unexpected healing effect for their cardiovascular problems.

This finding led to further investigation. It was Norman Clarke who, in 1956, published an article in *The American Journal of Medical Science*, claiming the successful treatment of patients with severe angina pectoris (chest pain caused by narrowing of the coronary arteries) through the use of EDTA. In 1960, well known cardiologists Kitchell and Meltzer reported that chelation therapy caused both objective and subjective improvement in 9 out of 10 patients suffering from angina.

Soon hereafter, numerous publications on the successful treatment of patients with narrowed leg or brain arteries started appearing.

In 1988, Olszewer and Carter published their findings after treating 2870 patients with EDTA chelation therapy. More than 93% of the patients suffering from narrowed coronary arteries, showed good to excellent improvement. Patients suffering from the narrowing of leg arteries improved in 97% of all cases. And patients suffering from narrowed brain arteries also profited, although less dramatically (60%).

All in all, these results have led to an increased interest in the effectiveness of chelation therapy. The more than 10 million treatments administered to date are proof of this effectiveness.

How Does Chelation Therapy Work?

EDTA (short for ethylenediaminetetraacetic acid) is the active component in chelation therapy and is a chelator or chelating substance. This term stems from the Greek word "chele", meaning claw, as EDTA actually grabs on to metal particles (such as calcium, lead, mercury, cadmium) like a claw. Once injected into the blood stream, it binds to these particles and this entire complex (EDTA plus metal particles) is excreted from the body during urination. The positive effects of chelation therapy can be seen in the following:

EDTA influences narrowed arteries

It is the process of arteriosclerosis which causes narrowing of the arteries of heart, legs and brain. Here, calcium deposits (plaque) are found in the arterial wall. EDTA binds calcium ions (electrically charged calcium particles) in the blood and excretes them via the kidneys into the urine. Thus, the blood calcium ion concentration will drop and (in response to this) will lead to the release of parathormone (PTH). PTH in its turn will attract calcium ions from the tissues (including the arterial walls) in order to compensate for the lowered blood calcium concentration. Were this PTH reaction not to happen, the blood calcium concentration would drop

still further and lead to involuntary contractions of numerous muscles (tetany).

EDTA influences the function of body cells

Upon aging, the calcium concentration of body cells will gradually increase. This leads to impairment of metabolic processes and energy production within the cell (in other words: impaired cell function). Chelation therapy will decalcify these cells, thereby improving their function.

EDTA removes heavy metals

One of the most important functions of EDTA is the removal of heavy metals from the body. Upon aging, substances such as lead, mercury and cadmium accumulate in the body ("internal pollution"). Present day lead load in humans, for instance, is about 1000 times higher than 1600 years ago. Heavy metals exert very damaging effects upon the body, amongst other things because they block numerous enzymes (substances which accelerate certain bodily processes).

EDTA influences free radical reactions

EDTA also removes iron and copper from the body. These metals are involved in so-called free radical reactions which take place in the body. Free radicals are atoms or molecules (containing a unpaired electron) which tend to interfere with numerous bodily processes in an extremely aggressive fashion. For instance, free radicals can bind to enzymes, cellular membranes or DNA (the genetic material) and thus interfere with their function. Given the proper conditions, free circulating iron and copper ions can promote the formation of free radicals. Chelation therapy will remove an excess of these ions from the body and thus exert a positive effect on these damaging reactions. This EDTA effect explains the positive influence on arthritic complaints which, in part, are caused by free radicals.

EDTA influences blood coagulation

EDTA has a positive effect on blood platelets (thrombocytes). These play an important role in cardiovascular and other arterial disease. Generally, brain and myocardial infarctions occur because clots (which are largely made up of platelets) close off a vessel.

Moreover, blood coagulation tendency in arteriosclerotic disease appears to be greater than normal, thus facilitating the formation of clots. EDTA, however, reduces platelet stickiness, thereby considerably reducing the chance of clot formation.

EDTA influences red blood cells

Red blood cells (erythrocytes) contain oxygen, the essential component every cell needs. Through chelation, red blood cells become increasingly flexible, making them better capable of reaching smaller blood vessels and thus increasing circulation and oxygen delivery.

Does EDTA Have Side Effects?

- 1. If EDTA is applied in too high a dosage, over too short a period of time, kidney function can (temporarily) diminish. Proper use of EDTA (based on the protocol as set by the American Board of Chelation Therapy) reduces this side effect to practically zero. Moreover, in many cases, diminished kidney function prior to commencing chelation therapy may improve under chelation treatment.**
- 2. Some patients experience discomfort of the arm in which the infusion is given. This complaint can be prevented through simple measures.**
- 3. EDTA has a blood sugar (glucose) lowering effect and for this reason a positive influence on diabetes mellitus. A normal, healthy blood glucose level can also be lowered by EDTA (only temporarily, during the actual infusion). This can bring on sleepiness, hunger pangs and shakiness. Complaints like these can be prevented by eating shortly before and during the infusion (bread, fruit, etc.) and by drinking fruit juice.**
- 4. Rarely, blood calcium levels drop during treatment. Complaints that may arise are: tingling around the mouth, in fingers and toes, as well as, cramping of hands and feet. A calcium injection (calcium gluconate) makes these complaints disappear rapidly.**
- 5. Some patients experience fatigue during the first (ten or so) number of infusions. This is a normal phenomenon, which soon disappears on its own. The vast majority of patients will soon start to feel more fit and energetic because of chelation therapy.**
- 6. In rare cases a drug fever can occur a few hours after the treatment. This responds to a little time, fluids and acetaminophen or aspirin. A rash may also occur as with any product. Often this is due to the vitamins in the bottle and not the chelation material.**

When Is Chelation Therapy Needed?

- Narrowing of the coronary arteries**

Angina pectoris: chest pain as a consequence of lack of oxygen of the heart muscle. This pain generally occurs upon exertion, in cold weather, emotional states or upon eating copious meals, but sometimes also when in a resting state and at night.

Heart attack (myocardial infarction): here, part of the heart muscle has actually died off, generally as a consequence of an acute blockage of a coronary artery. Chelation therapy helps prevent new heart attacks, as well as angina pectoris after a heart attack. Moreover, chelation improves cardiac pump function.

Prevention of bypass surgery or balloon angioplasty: large American and European studies show that only a small percentage of patients undergoing such procedures will experience long term effects, as compared to patients treated with medication only. An exception involves significant obstruction of the left mainstem coronary artery. Newer stent and angioplastic methods do have value and are sometimes lifesaving but arteriosclerosis is progressive and a significant amount of later blockage and failures can occur with invasive methods.

- **Narrowing of the leg arteries**

The initial stage of this condition is called **intermittent claudication**, where patients suffer from different degrees of pain. **Gangrene** (actual tissue die-off as a consequence of blockage or severe narrowing of a blood vessel) can be the next stage (the so-called "black toe" is a good example of this).

- **Narrowing of cerebral blood vessels**

These can manifest themselves in the following ways:

Cerebral infarction: die-off of brain tissue as a consequence of blockage of a blood vessel by clot build-up onto an already narrowed segment (thrombosis), or blockage caused by a loosely circulating clot which became lodged (embolism).

TIA (Transient Ischemic Attack): temporary lack of oxygen of the brain, which completely reverses itself within 24 hours (such as transient speech difficulties, transient paralysis, transient blindness in one eye, etc.).

Memory and concentration difficulties

Dizziness

Dementia

Impaired vision and hearing

Fatigue, decreased vitality

The majority of patients experience an increase in energy and vitality as a consequence of chelation therapy.

- **Arthritic complaints**

Here, chelation therapy is also frequently effective as there is some anti-inflammatory activity due to alteration of intra-articular metalloproteins and metals. It is not applicable to all forms of arthritis. A proper diagnosis is required as there are 154 variants of arthritis and rheumatism. Additional treatment measures are almost always necessary.

- **Diabetes mellitus**

Chelation therapy improves sugar metabolism. Diabetics undergoing chelation therapy often need less insulin or oral blood glucose lowering medication during the course of treatment. Moreover, it is believed that chelation therapy helps prevent complications of diabetes, such as eye, nerve and kidney damage, as well as accelerated arteriosclerosis.

- **High blood pressure (hypertension)**

Chelation therapy will generally lower raised blood pressure. Blood pressure lowering medication can sometimes be diminished or even discontinued.

- **Heavy Metal Toxicity**

EDTA was approved in 1952 in this country because there was a desperate need for an agent to combat lead poisoning. Red lead paint was used extensively as an undercoat paint. Many top coat paints contained lead pigment. Both adults and children suffered from a variety of signs and symptoms of lead poisoning from remodeling, accidental exposures to soil and leaded gasoline in the ambient air. (see the article on lead). EDTA proved to be a godsend. Other poisonous metals can also be removed by this compounds. Some of the metals gradually accumulate in our bodies in an industrialized society and interfere with the various enzyme functions of the human body. Thus heavy metal accumulation can contribute in a subtle way to hypertension, neurologic disorders such as peripheral neuritis and memory dysfunction, and blood disorders such as anemia even without major exposure at

times. Mercury excess can be reduced by EDTA but is more efficiently removed by other chelating drugs (see the article on mercury)

- **Prevention, "life extension" - striving for optimum health**

Because of the favorable effects of chelation therapy on free radicals, heavy metals and calcium deposits, degenerative processes (arthritis, general "wear-and-tear") of the body will be slowed down. Not only will the body's blood vessels be kept in good condition, but the entire body benefits from regular EDTA infusions. Research in laboratory animals shows a clear increase in life expectancy through EDTA. In humans, increase in life expectancy is estimated at 8-17 years in men and 6-16 years in women (an average of 12 years). Life extension in and by itself would not make sense if the quality of life were not equally effected in a positive fashion. Chelation therapy clearly has this effect as well.

As Dr. Robert Atkins, the world renowned nutrition and diet authority, says in his book, Dr. Atkins' Nutrition Breakthrough, "Nutrition chelation is among the most under-publicized, least understood therapeutic measures in use today, perhaps because there is not single large industry or political group behind it. In fact, the establishment may even be threatened by chelation because it is a radical departure from currently accepted techniques. (We must not lose sight of the fact that surgeons are taught to operate and allopathic doctors are trained to prescribe drugs. Since nutritional chelation therapy uses neither of these remedies, it comes as no surprise that the establishment doesn't accept the concept.)"

And How About The Scientific Proof?

The argument many conventional doctors use in their criticism of chelation therapy is that the effects have never been properly proven. Here follows a summary of some trials on the effects of chelation therapy. This is only the tip of the iceberg when it comes to the amount of available trials:

- * One trial with 2870 patients showed considerable to excellent improvement after chelation therapy (both objectively and subjectively) in 93% of patients with heart disease, 97% of patients with narrowing of the leg arteries and 60% of patients suffering from cerebral vascular problems.**
- * In another trial, 17 out of 18 patients showed considerable improvement of cardiac pump function after 20 chelation drips.**
- * 15 Patients with impaired brain circulation, all reported a lessening of complaints. In 14 of these a brain scan clearly demonstrated improved circulation.**

*** In 57 patients with narrowed cerebral vessels, narrowing dropped back from an average of 28% to 10%.**

*** In yet another trial, with 30 patients suffering from narrowing of the cerebral vessels, a sonogram of the neck arteries (carotids) was performed after 10 months. It showed a decrease in vessel narrowing from 49% to 28%. The group with the most severe stages of narrowing improved even more dramatically, from 77% to 42%.**

*** In patients suffering diminished kidney function, average kidney function improved by 50%**

*** Research amongst another 50 patients showed clear improvement in pulmonary function (an average of 12%; the group of patients suffering from impaired lung function before commencing chelation therapy even reported more than 20% improvement).**

Modern double blind testing has not been performed using EDTA therapy for arteriosclerosis with few exception. This is because the drug is no longer in patent. The drug manufacturer has nothing to gain by sponsoring these tests to get formal government approval as the drug is generic. Such testing is very costly and impractical to do (and probably unethical to perform) for the average medical practitioner.

Chelation Therapy In Practice

Are you interested in learning more about chelation therapy? The first step would be for you to set up an intake appointment. Not only will your current complaints be analyzed, but also other matters such as your medical history, life-style, use of medication etc. will be addressed. Afterwards, a physical examination is performed to assess your condition more accurately. If you are only interested in an informative consultation (where further examinations may not be necessary), the doctor will advice you, based on the medical data you present.

Additional Examinations

In addition to the basic physical examination, the doctor will often need extra information. Quite regularly, an electrocardiogram (EKG) and a circulation study of the legs (impedance plethysmography) will be needed to assess the condition of the heart and blood vessels. Laboratory blood tests will be needed to assess possible liver or kidney function disturbances or raised blood lipids (cholesterol, HDL homocysteine, LDL). Sometimes, a pulmonary function test carotid Doppler or echocardiogram, ultra fast CAT scan of the heart, or Stress test is necessary. If you are being, or have been, treated by other medical doctors or specialists for your condition, you may be asked for approval to have your specialist supply additional medical data. This is to avoid duplication of tests and to better inform the doctor about your condition.

The Consultation

After compiling all the necessary data, the results will be discussed with you. Based on these, a decision is made as to whether you are eligible for chelation therapy or whether other therapies are more appropriate. As it is an elective procedure we will not provide this where it is not applicable by law (certain OSHA regulations apply), where one is hypersensitive to ingredients in the treatment, where there is compromised renal or kidney function, where there is inappropriate expectation of what this therapy can do or for the primary therapy for a cancer or condition for which there has been no studies to indicate benefit.

The Therapy

As mentioned earlier, chelation therapy is applied via a drip. A special needle is inserted into one of the veins in the arm. After hooking up the drip bottle to the catheter, the appropriate infusion rate is set. For optimal effect, the average length of a chelation session is 2 1/2 to 3 hours.

The treatment regime for a diagnosed disease or condition consists of a series of 20 full treatments or 40 half treatments . These are given once or twice a week. After this series, the frequency is gradually reduced to one monthly maintenance session. This is done in order to try to prevent the aggravation or worsening of the treated condition. If new problems occur another partial series may be recommended to re-boost your treatment effect or a different form of medical treatment may be indicated.

Individual adjustments of treatment frequency and intervals is possible, but may not always be advisable. The maximum effect of chelation is generally not reached until several months after the final treatment

This does not imply that improvement of complaints will not become visible much faster. Some patients report clear progress after 5 full treatments, others will not experience anything until the 15th bottle or later. Unfortunately no method of treatment works with everyone. We can not guarantee success just as a surgeon cannot.

The use of chelation therapy as a form of prevention does not require such a large number of sessions. A series of 10 full treatments or 20 half treatments, administered once per week, tends to be the norm. The necessity or frequency of maintenance sessions can be decided upon on an individual basis.

An informed consent form will be provided discussing much of the above information. Your signature on this form indicates your understanding of the form and agreement to voluntarily take the treatments. Sometimes you may be advised that another form of therapy may be more appropriate including surgery.

Is chelation covered by Medicare or private insurance?

Not as a rule. Chelation is generally not yet covered by insurance because it is not considered "usual customary treatment" when treating for vascular disease, hypertension , arthritis or other non FDA approved indications. The use of

Chelation for indications not found on the drug label is not endorsed by the American Medical Association. In the case of heavy metal poisoning such as nickel, lead or gold depleted uranium or plutonium excess, it is covered and the drug is approved by the FDA for that purpose. It may be approved for malignant hypercalcemia and the treatment of complications of scleroderma or skin calcifications.

Other Measures

If you are a smoker and want to start chelation therapy, you should quit. Smoking impairs the effectiveness of chelation therapy and may show disappointing results. Nicotine patches or oral spray, Zyban, acupuncture, cognitive therapy, thought field transfer or hypnotherapy are only some of the ways to help you kick the habit.

A proper diet is also important. In short, this means limiting the intake of saturated (mainly animal) fats, as well as, the use of refined products and sugar. Furthermore, your diet will need to be supported with nutritional supplements: vitamins, minerals, trace elements, (co)enzymes, antioxidants etc. These may well have a positive influence on the disease process and are vital in preventing shortages of certain vitamins and minerals which chelation therapy tends to deplete.

Returning your hormone balance with natural hormones can be of value if they are deficient. Newer work includes balancing DHEA, sex hormones, growth hormone and thyroid.

Once You Begin

Make sure that you eat before you take a chelation treatment to prevent possible hypoglycemia. If you experience fatigue, swelling of the legs, a rash or fever after a treatment, please contact our office. Take the replacement trace minerals because a great deal of mineral balancing is occurring with this method. Also stop smoking, increase your exercise or physical activity, follow a good diet (ask our office to give you one), and take your antioxidants, anti-cholesterol drugs or products and other supplements. Expect to be here for a few hours taking the treatment and don't change the drip regulator. Let us know if the IV site is swelling or uncomfortable.

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