Case for Intravenous EDTA Chelation Therapy

July 15, 2006

Dear Reader

You are about to read the Case for EDTA Chelation Therapy. All what was written in the 1995 and in 1999 editions holds true as of 2006.

A $30, 000, 000 governmental study is underway since 2003 to determine definitively how effective EDTA Chelation is for patients who have coronary artery disease and a history of at least one heart attack. The study is called TACT, the Trial to Assess Chelation Therapy.

The next rewrite of the book will include the findings of this study among discussions regarding various issues of toxic metals and how to rid ourselves of them. It will include the discussion on the relative merits of various strategies and claims made about them.

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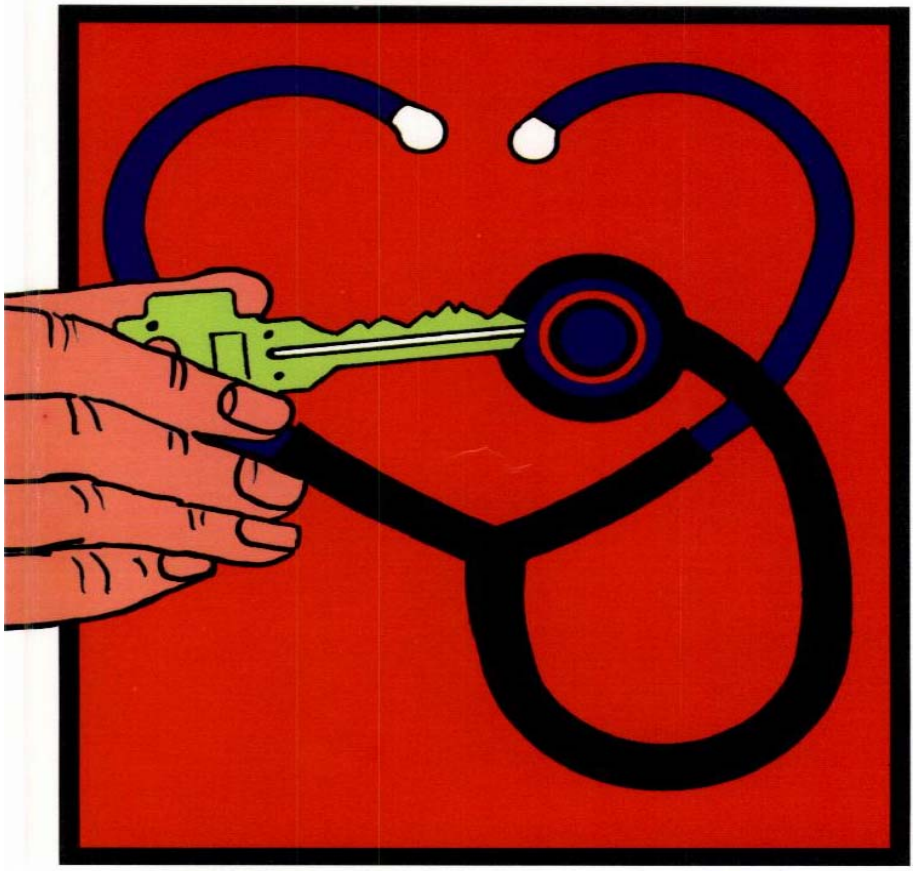
Wishing you the best of health,

Martin Dayton

The Case for Intravenous EDTA

CHELATION THERAPY



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A new health key for prevention and treatment of circulatory arthritic, pulmonary and other degenerative diseases.

THE CASE FOR

EDTA

INTRAVENOUS

CHELATION THERAPY

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DEFINITION

of

Intravenous Chelation

Therapy

EDTA Intravenous Chelation Therapy

EDTA is an abbreviation for ethylene diamine-tetra-acetic acid, the primary therapeutic ingredient used in EDTA intravenous chelation therapy. Intravenous means in a vein or veins. During therapy, EDTA is infused into the blood stream through a vein. Technically, chelation is a chemical process where metals enter into claw like bonds with molecular ring-like configurations. Chelation is pronounced key-lay-shun. The process of chelation in the chemical sense has many applications including sustaining life. Therapy is a process which is used to improve health or mitigate disease. EDTA is one of seemingly countless substances which may be involved in the chemical process of chelation. In this sense, EDTA is not synonymous with chelation. Clinically, the therapeutic process of chelation may involve substances other than EDTA and routes of administration other than intravenous. Other metal binding substances such as DMSA (dimercaptosuccinic acid) may bind with metals similarly to EDTA, however via different kinds of molecular configurations. Such metal binding although not technically the same as chelation in the true chemical sense is nevertheless called chelation in a broader sense. In yet a broader sense, chelation may be used to depict intravenous EDTA or even an entire program involving EDTA, nutritional supplementation and life style changes. The terms EDTA chelation, EDTA intravenous chelation, intravenous chelation and chelation are often used interchangeably.

ABSTRACT

In addition to being known as a treatment for metal toxicity, such as found in lead poisoning, chelation has been successfully used to overcome various conditions associated with aging. Impaired circulation due to hardening of the arteries and discomfort due to arthritis are among the most notable. Numerous scientific articles reflecting effectiveness and safety have been published. In one study evaluating over 22,000 patients, 87% demonstrated objective improvement. Millions of chelation administrations have been performed over 40 years, world wide. According to the American College for Advancement in Medicine not one fatality proven to be caused by chelation therapy has been reported when appropriate protocol is followed.

Studies involving chelation therapy have demonstrated improvement in complications of diabetes mellitus; strength of heart contraction; symptoms of arthritis; impairment of brain, heart, and leg circulation; impairment of kidney function; elevated cholesterol and more. In one study following chelation, patients with chronic obstructive lung disease averaged 20% improvement in volume and speed that air could be expelled. In another study of patients with greater than 70% blockage of carotid arteries carrying blood to the brain, clogging decreased 41.6%. In a case report one

patient had a complete unclogging of a 30% obstructed coronary artery demonstrated by angiography. In another study, 58 of 65 patients referred for coronary bypass surgery and 24 of 27 patients referred for lower extremity amputation, no longer needed surgery after opting to have chelation. In regard to prevention, after 18 years following a course of chelation therapy the cancer death rate decreased by 10 fold.

Chelation involves cleansing the body of harmful accumulations of metallic chemicals which interfere with normal function and repair. An amino acid, EDTA, after administration through a vein, attaches to these metals and carries them out of the body via the kidneys in the urine.

During a session of chelation therapy, patients relax in the doctors office usually in reclining chairs in private rooms or in a communal room with other patients. Most patients enjoy the camaraderie and exchange of information. Sessions of chelation range from 1-4 hours each. The frequency and the number of administrations vary with patient need. Chelation is becoming popular for promoting health as well as dealing with disease. Many patients take chelation to help overcome stress, maintain youthfulness, and improve vitality.

Dedicated to those who support advancement in medicine



The case for EDTA Intravenous Chelation Therapy

Intravenous administration of EDTA chelation improves health by cleansing the body of harmful accumulations of metals which contribute to many diseases. Benefits of EDTA chelation therapy are greatly enhanced when intravenous administrations are augmented by appropriate nutritional and other health strategies. Chelation therapy addresses conditions which make arteries hard and clogged and interfere with normal biological function. In the United States, hardening of the arteries has been found to be a major underlying factor in deaths caused by disease. With chelation therapy, circulatory conditions associated with hardening of the arteries leading to stroke, hypertension, angina, heart attack, poor memory, impotence, leg pain and amputation may be improved. Breathing capacity and function is often found to improve for sufferers of chronic obstructive lung disease. Patients with macular degeneration frequently remark about seeing better. Chelation therapy has been shown to reduce joint stiffening and arthritic pain while maintaining strength of the bones. Conditions without apparent diagnosis such as tiredness, lack of vitality, forgetfulness, slowed thinking, and feelings of ill-being may be improved. Chelation therapy is thought to combat degenerative processes in all

organs of the body. Chelation has been shown through one scientific study to be associated with the prevention of malignancy where a dramatic decrease in cancer death rate had been found 18 years after treatment.

Intravenous chelation therapy counteracts destructive chemicals, “free radicals”, which are constantly forming in the body. These chemicals cause degeneration associated with aging. In laboratory tests, the life expectancy of living cells exposed to intravenous chelation substances has been extended. Improvement in human longevity with intravenous chelation therapy has not been confirmed through scientific study.

EDTA chelation brings improvement in different ways at different rates for different individuals under different circumstances. Measurable changes in performance, sense of well being and test results using various diagnostic instruments attest to the efficacy of intravenous EDTA chelation therapy. EDTA is an amino acid. Amino acids are known as building blocks for proteins. Natural amino acids may combine with other amino acids to form proteins. Natural amino acids may also be combined with other structures or be metabolically changed into other structures within the body. EDTA is man-made. Unlike many other amino acids, EDTA is not changed metabolically nor incorporated into other structures in the body. EDTA attaches to metals via claw-like chemical bonds. The process is called chelation. The word chelation is derived from the Greek word “chele”

meaning claw. EDTA preferentially attaches to some metals more than others, including toxic ones. In essence, EDTA, after entering the bloodstream, grabs harmful substances in a “claw-like” manner and eventually carries the substances out of the body through the urine via the kidneys.

In addition to EDTA, various other substances may be administered during the course of chelation therapy to improve biochemical harmony. Supplemental nutrients are taken at home by mouth to support more optimal function and repair. Modern intravenous chelation therapy is a relatively simple, safe, and effective procedure. Millions of administrations have been given since the 1950’s.

Although EDTA intravenous therapy is not effective in preventing and relieving all conditions partially and completely to everyone’s satisfaction all of the time, its use flourishes on the basis of previous successes. Hundreds of thousands of people in the United States have received the benefits of intravenous chelation therapy. Hundreds of published papers and scientific studies have documented the efficacy of this therapy. Patient and family testimonials describing the disappearance of angina, leg cramps, shortness of breath on exertion, joint pain, and impaired mental function following intravenous EDTA chelation therapy are commonplace.

Chelation is generally accepted by all prominent conventional medical groups and governmental agencies for some, but not necessarily all, purposes. For example, treatment for acute lead toxicity with chelation may be generally accepted, whereas, treatment for hardening of the arteries may not. Proponents experienced in chelation therapy may herald treatment in regard to hardening of the arteries as nearly miraculous while opponents may denounce it as unproved quackery. For medically controversial uses, medical organizations, governmental agencies, and physicians may classify chelation as investigational.

Although published scientific studies have proven chelation to be effective in regard to hardening of the arteries, the existence of such studies is still unknown to many physicians. The types of studies range from simple to sophisticated with names like “angiographic”, “meta analysis” and “double blind”. One meta-analysis study involves scientific data compiled from over 20,000 patients. Misinformation regarding whether chelation has been proven or not often stems from the erroneous assumption that ignorance of existence of proof means proof does not exist.

Following publication of scientific data favoring treatment of hardening of the arteries with chelation therapy in the 1950’s, the appearance of such information in widely read medical literature virtually

ceased. The contents of widely distributed medical journals are ultimately controlled by those who control financial support to these publications. Unfortunately chelation is often perceived as competition by individuals belonging to organizations which have financial interests in other methods of addressing hardening of the arteries. Chelation is often used as a safer method to replace much costlier conventional surgical and related medical procedures. Hardening of the arteries is a lucrative, multi- billion dollar industry. Generally those who profit from an industry, whether it be a surgical/medical industry or any other industry, tend to be antagonistic to changes that reduce profits.

Today, data on chelation is published in progressive, although lesser known medical journals and read worldwide. In the past, some doctors were persecuted by governmental agencies and licensing boards for administering chelation. As a result of one such persecution in Florida, the state supreme court justices unanimously ruled in favor of chelation therapy being legally administered to the public. Through judicial and other governmental processes chelation has become more readily available in the U.S.A. The F.D.A. has approved the study of chelation therapy for occlusive (blocked) peripheral circulatory disease.

In face of growing acceptance and voluminous scientific proof, many private and national health insurance plans including U.S. Medicare still refuse to pay for chelation therapy when used for conditions associated with hardening of the arteries. However, the number of insurance plans that pay for such uses is increasing. With the realization of dramatic cost savings over conventional surgical and related medical approaches, court rulings favoring patient reimbursement in suits against reluctant- to-pay insurance companies, and patient political pressure advocating safer alternatives, chelation therapy is enjoying increasing respect.

Chelation therapy is a specialty recognized by the American College for Advancement in Medicine. The American College for Advancement in Medicine recognizes the American Board of Chelation Therapy as the certifying board for specialists in this field. The American Board of Chelation Therapy certifies physicians with required training and clinical experience who have successfully passed written, oral, and clinical tests to assure excellence. Board certified physicians, also known as diplomats, are also required to be recertified periodically to assure continued quality of care. The medical protocols used by the American Board of Chelation Therapy are based on the experience of millions

of therapies administered. Not one death has been proven to be caused by chelation therapy when these protocols are followed according to the records of the American College for Advancement in Medicine. Not all physicians who administer chelation are board certified nor necessarily follow the guidelines of the American College for Advancement in Medicine The demand for chelation as well as the number of doctors administering and receiving chelation is increasing nationally and worldwide.

Chelation therapy is used in conjunction with programs involving diet, exercise, and stress reduction. It also complements standard medical and surgical therapy With the improvement of health, the medical necessity for harmful and potentially harmful pharmaceutical drugs may be reduced. Although better known as a substitute for cardiovascular surgery, chelation also has been used as a strategy to prevent reclogging of arteries after surgical bypass and balloon angioplasty. Surgical bypass involves rerouting blood around clogged areas of arteries by connecting a segment of a blood vessel from elsewhere to the affected artery to overcome the obstruction. Balloon angiosplasty increases blood flow by inflating a balloon within an arterial passageway, compressing encrustations at the site of clogging. The ultimate goal of chelation therapy is to help prevent, slow, or reverse processes associated with disease, impaired vitality, and aging

WHICH CONDITIONS OR COMBINATION OF CONDITIONS HAVE BEEN REPORTED TO IMPROVE FOLLOWING INTRAVENOUS CHELATION THERAPY:

Partial list of conditions or combination of conditions which have been reported to improve following intravenous chelation therapy, in alphabetical order without reference to degree of improvement:

- age spots
- aging
- angina pectoris
- arteriosclerosis (cerebral, coronary, peripheral)
- blood fats
- Buerger’s disease
- bursitis
- cardiac rhythm irregularities
- cholesterol
- chronic obstructive lung disease
- circulation
- cirrhosis
- congestive heart failure
- coronary atherosclerosis
- dementia
- diabetes mellitus
- diabetes retinopathy
- digitalis toxicity
- enlarged heart
- erectile failure
- fatigue
- free radicals
- gangrene
- general circulation
- hair growth
- headaches
- heavy metal poisoning
- hypercalcemia
- hyperlipidemia
- hypoglycemia
- hypertension
- immunity
- impotence

kidney disease

- lead toxicity
- leg circulation
- lupus erythematosus
- macular degeneration
- mood
- multiple sclerosis
- neuralgia
- neuropathy
- nuclear poisoning
- osteoarthritis
- osteoporosis
- Parkinson’s syndrome
- Peyronie’s disease
- poison gas
- post-stroke syndrome
- probability of getting cancer
- psoriasis
- iron toxicity
- intermittent claudication
- malaise
- male sexual dysfunction
- memory
- mental function
- mercury toxicity

  Raynaud’s disease
- renal insufficiency
- rheumatoid arthritis
- schizophrenia
- scleroderma
- senility
- skin wrinkles
- skin ulcers

- strokes
- tachycardia
- tinnitus
- thrombophlebitis
- transient ischemic attack
- vasculitis
- vertigo
- vitality

WHAT DETERMINES IMPROVEMENT?

Various conditions may improve to various degrees at different rates with chelation therapy. Chelation on the biochemical level helps reverse degenerative tendencies and helps promote regenerative tendencies as circumstances permit. Chelation must be administered

properly with appropriate numbers of intravenous infusions for optimal results. Less than optimal administration produces limited results. Limitations are also defined both by the condition and the person who has the condition. Some conditions are more amenable to chelation therapy than others. For example, reversal of arthritic pain is often favorably influenced whereas reversal of gross bone deformities are not.

Among factors which determine outcome based on the person are lifestyle, stress, inherited genes, attitude, nutrition, and environment. Those with favorable genes living under more ideal conditions would be expected to
enjoy faster, longer lasting results with less therapy than Con those with less favorable genes living under less ideal o conditions. Whether or not chelation has a favorable
influence and if such an influence results in a dramatic recovery or simply a delay of the inevitable is dependent on circumstances of the administration, the condition, and the individual.

COMMENTARY ON CRITICISMS OF CHELATION THERAPY BY DOCTORS

1. **“If chelation therapy worked, I would have known about it before.”**

Who has time to review thousands of new periodical and journal articles on a weekly basis as well as new information that is not published? For that matter, who has time to review all the old information? Is anyone privy to all there is to know?

2. **“I do not understand how chelation therapy works. Therefore, no scientific rationale exists and the therapy is Invalid.”**

Does a person need to have the education of a sky rocket scientist to admit rockets work? Many plausible mechanisms of action with supporting scientific research have been proposed for chelation therapy.

3**. “Chelation therapy is not approved by the F.D.A. (Food and Drug Administration) nor all major physician organizations for conditions associated with hardening of the arteries.”**

F.D.A. approval is not necessary for a therapy to work, nor for the doctor to use a therapy ethically, prudently,

safely, legally and effectively. The ingredients used in chelation therapy are F.D.A. approved.
A.C.A.M (American College for Advancement in Medicine) endorses it. The F.D.A. and the A.M.A. (American Medical Association) classify chelation as investigational. Organizations comprised of vascular surgeons and invasive cardiologists endorse less favorable perspectives.

4. "Chelation is worthless and not cost effective in preventing disease."

In one European study 59 out of 231 people studied were treated with at least 10 chelation therapies. Eighteen years later 1.7% of the chelated group had died of cancer compared to 17% for the non-treated group, a 10-fold decrease in cancer death rate for the chelated patients. How this study would translate to the U.S. population is speculative.

In the United States population, one in three is projected to develop cancer. Cancer costs hundreds of thousands of lives and billions of health care dollars annually.

Prevention of various diseases as well as conditions associated with aging is thought to be influenced by

chelation therapy. Theoretically by removing biochemical impediments to adequate function and repair before disease can develop or progress, needless suffering and expenditures may be delayed or avoided.

5. **“Studies exist which conclude that chelation does not work.”**

Two studies are often cited by critics which typify the kind of negative evidence that is used by opponents of chelation therapy. One was reported early in the 1960’s in the U.S.A. and the other was reported in the early 1990’s in Denmark.

In spite of the earlier U.S. study showing improvement in cardiovascular disease following therapy, mainstream researchers somehow published conclusions stating chelation is not useful. In regard to the latter Danish study which was performed by vascular surgeons, misrepresentations were alleged involving data and protocols. The Danish committee against scientific dishonesty found the latter work to be “seriously flawed”. The reasons for such controversial reporting are subject to speculation. The conclusions reported by the researchers of these two studies are contrary to the preponderance of information reported in studies done by others.

6. **“Chelation causes bone loss and fatal kidney failure.”**

Scientific studies show that intravenous chelation therapy does not cause a net loss of calcium from bone, but actually increases bone calcium when the appropriate protocol is followed. In other words, the bones get stronger. Clinical studies show that present day chelation normalizes kidney function. During the pioneer days of chelation, before safe protocols were established, kidney failure leading to death was reported following inappropriate administration of chelation therapy not in accordance to present day standards.

7. **“More research has to be done before I would recommend chelation therapy.”**

Studies favoring chelation have been criticized to not involve enough patients, to not be done by the critic’s favorite researchers, to not be done in the critic’s favorite geographic location, to have not been published in the critic’s desired journals, to have not been performed in conformity with the critic’s favorite format, etc. To wait for more studies to satisfy potentially unsatisfiable naysayers, may be a disservice to humanity.

8. **“If chelation therapy is an advantageous alternative to methods commonly used, doctors would inform patients and other doctors without bias.”**

Ethically doctors should inform patients without bias of all viable options in all important health care decisions. However, doctors differ dramatically on how they handle the issue of chelation therapy in counseling their patients. Most doctors try to be as objective as circumstances permit. Unfortunately, doctors, like the rest of humanity, subject to incentives and disincentives, may tend to favor self serving methods and disfavor competing methods. Doctors without biased intent may rely on information inadequately reflecting the benefits of chelation therapy. Under these circumstances, doctors’ opinions may be unintentionally skewed. Increasing number of doctors, including vascular surgeons, are becoming aware of the benefits of chelation and are recommending it to patients and other doctors as well as receiving therapy themselves.

9**. “Chelation therapy is an expensive, fraudulent, unproven and dangerous placebo.”**

Everything is relative. For perspective, chelation may be compared to coronary bypass surgery:

Chelation is about one tenth the cost of coronary bypass surgery. It addresses other conditions and needs in addition to circulation at no extra charge with little risk of serious complications as, is found in bypass surgery.

Contrary to what has been often touted, except for a relatively small percentage of patients, efforts to demonstrate coronary bypass surgery to significantly extend life when compared to medical therapy have been disappointing in three major studies. Many who have touted coronary bypass surgery to generally prolong life also claimed chelation to be a fraudulent placebo. Chelation has been proven to be otherwise.

A placebo is thought to work solely through the power of suggestion rather than other merits. Scientific studies called "double blind" studies are used to eliminate the effect of suggestion when evaluating a therapy.

In a typical double blind study of a drug, one group of patients receives the substance to be tested and the second group an inert substance. The substances used are unlabeled except for perhaps code numbers. Neither the patients nor the administering therapists know which
patients are receiving which substances in order to eliminate a psychologically biased outcome. After the
study is concluded, data is analyzed. Chelation therapy

has been tested in this fashion with results demonstrating benefits convincingly beyond placebo effect. Coronary bypass surgery has not been proven by such a trial. Before the advent of coronary bypass surgery, patients believing they had actual major cardiovascular surgery were reported to have relief from angina after an operation where the chest was surgically opened and closed without the surgeon cutting any significant internal blood vessels whatsoever.

In studies analyzing thousands of cases of chelation patients, approximately 86.9% of the patients had improvement that was objectively measured. Objective measurements are observable by all and do not include subjective reporting of unobservable symptomatic improvement by patients. If subjective findings were included, the percentage of overall improvement would have been higher. Objective measurements, for example, may involve change in strength of heart contractility. Subjective measurements involve disappearance or persistence of chest pain. Possibly, all patients had improvement, without all forms of improvement having been measured. Degenerative processes may also have been stabilized without measurable reversal of existing pathology. Nevertheless, 86.9% is a much greater percentage than is expected from mere placebo effect. Considering that these patients would generally be expected to become worse with time without therapy, these findings are particularly impressive.

Since chelation is administered often with nutritional and lifestyle modifications, the question is raised whether nutritional and lifestyle modifications alone, and not the chelation, account for the beneficial effects.

Analysis of the data is suggestive of enhanced benefit when all three are used in conjunction.

Chelation therapy, when modern protocol is performed, has not been proven to cause deaths according to A.C.A.M. compared to thousands which are caused yearly by invasive cardiovascular surgeries. Chelation has not been proven to cause heart attacks, strokes or other forms of brain dysfunction associated with invasive cardiovascular procedures.

Beneficial objective findings are measurable more immediately with cardiovascular surgery than with chelation. Bypass surgery is a very valuable procedure when used in appropriate context as is chelation therapy. Surgical bypass addresses small segments of the miles of blood vessels in the body and does not stop the progression of hardening of the arteries caused by biochemical imbalance. Chelation addresses biochemical imbalance in all arteries where blood circulates including areas where surgery is not possible. In addition to reducing blockages to various degrees in diseased arteries, chelation improves blood flow in other arteries supplying the same tissues as the blocked arteries. Thus, chelation helps to medically establish natural bypasses. Bypass surgery forms unnatural bypasses which tend to clog faster than other blood vessels. Chelation favorably affects other conditions compromising health and survival

that may coexist with hardening of the arteries, which bypass surgery does not.

10. **“U.S. Govermnent funded Medicare would pay for chelation therapy if it would save money, suffering and lives.”**

In an European report 58 of 65 patients who were chelated while awaiting recommended coronary bypass surgery did not find it necessary to have the operation after chelation. This would be equivalent to 363,000 out of 407,000 patients having the surgery in the U.S.A. in 1991 not needing the operation. Besides saving several billion health care dollars, this translates into the sparing of thousands of lives associated with an estimated average 2-5% bypass operative fatality rate. Greater savings are realized in terms of suffering and health care dollars when an even higher rate of serious non-fatal bypass surgical complications are taken into account. Being that coronary artery disease involves but one of many areas where chelation is known to be effective, the potential impact of chelation therapy on the future estimated trillion dollar plus United States health care burden is tremendous. Chelation addresses a multitude of medical conditions from the relatively benign and rare to the more devastating and common. In fact, chelation therapy is known to favorably impact to varying degrees on all four major causes of death due to disease in the

United States: heart disease (720,000 deaths, 1990), cancer (505,322 deaths, 1990), cerebrovascular disease (144,088 deaths, 1990) and chronic obstructive lung disease (86,679 deaths, 1990). With rare exceptions, the U.S. government does not pay for chelation therapy in regard to any of these conditions.

ADVANCEMENT IN MEDICINE

EVOLVES

WITH

INQUISITIVE

AND

CRITICAL

EVALUATION

QUESTIONS

PATIENTS

FREQUENTLY ASK

ABOUT

INTRAVENOUS CHELATION

1. HOW MUCH DOES CHELATION THERAPY COST?

Chelation costs approximately in the range of $60 to $150 per infusion, in part depending upon geographical area and what materials are placed into the infusion. Some physicians charge extra for additional ingredients, others have one set price. Nutritional supplements in the range of $20 to $200 per month in cost are usually recommended during the course of therapy. Doctor visits, diagnostic studies, and other services are often covered by insurance. Chelation infusions may be covered although they are usually not. Diagnostic study costs and professional fees depend upon individual need ranging from a few hundred to several thousand dollars.

2. DO I HAVE TO GIVE UP MY ROUTINE MEDICAL CARE?

Routine medical care is usually continued, at least initially. For example, in the case of medical care involving cardiovascular drugs, chelation is used ideally to correct biochemical imbalances that lead to the need for such drugs. As underlying causes are eased, the need for drugs is reduced. Since drugs reduce stress in some areas and cause stress in others, eliminating drugs is favorable. However, removing drugs prematurely is dangerous. Drugs act like biochemical crutches. They should not be removed as physical crutches should not be removed until the body is ready. Until and if health

improves to where the person is strong enough to manage safely without drugs, drugs must be continued. Often with chelation therapy, the need for pharmaceutical drugs is reduced.

3. CAN I KEEP MY PRESENT PHYSICIAN IF I HAVE CHELATION THERAPY?

Patients may continue under the care of their present physicians. Non-chelating physicians may participate in the program or simply be kept updated as desired. Some patients do not wish to have their doctors know they are receiving chelation therapy. Although not advised, these wishes are usually respected.

4. IF I HAVE BYPASS OR BALLOON ANGIOPLASTY, MAY I STILL HAVE CHELATION?

Chelation may be used before or following surgical procedures. Chelation may be used to improve the integrity of the body so that the person may be better able to handle the stress of the surgery. Chelation may also be used following vascular surgery to prevent blocking of the arteries that have been operated surgically as well as to improve circulation in the remaining blood vessels.

5. WHAT IS IN THE CHELATION INFUSION?

One fourth to one liter of fluid is usually administered at a predetermined rate. The fluid contains EDTA, nutrients including vitamins, magnesium, buffers, and other additives which the chelating doctor may deem appropriate for each individual patient

6. HOW SAFE IS CHELATION THERAPY?

By statistical comparison EDTA is safer than aspirin when the protocol is followed Unlike surgical approaches, no strokes, deaths nor heart attacks have been reported to be due to intravenous chelation therapy, and fewer side effects are reported than with many pharmaceutical medical treatments.

7. WHAT ARE POSSIBLE SIDE EFFECTS?

Major side effects are infrequently reported. Of the minor side effects, the most frequent include discomfort or swelling at the site from needle insertion during the infusion. These effects are temporary. Other effects seen in practice that have been reported include dizziness, muscle cramps, loss of appetite, kidney stress, hypoglycemia, fluid overload, nutrient and mineral imbalance, nausea, vomiting, diarrhea, headache, fatigue, weakness, joint pains, rash, postural hypotension,

phlebitis, chills, and back pains. In the event that these conditions occur, therapy is modified accordingly. Theoretically, other effects may include seizures, congestive heart failure, and nutrient deficiencies. Protocols have been created to address and prevent these issues. Breaking loose of plaque leading to blocking of blood vessels elsewhere has also been theorized but has not been proven to be caused by chelation.

8. HOW DO I KNOW CHELATION THERAPY IS WORKING FOR ME?

Generally people feel a difference in performance and comfort as a disappearance in the signs or symptoms. As the number of infusions increases with time, the effects become more dramatic. People with circulatory conditions may experience less pain, tiredness, shortness of breath, visual difficulties, heart rhythm irregularities, wrinkles, age spots, joint immobility, and depression. Diagnostic tests performed before, during and after therapy may show improved blood flow and heart function through ultrasound measurements; angiography, involving the injection of dyes into the arteries; and ultra- fast cat scans, demonstrating anatomical changes without the use of injections. Electrocardiograms and stress electro-cardiograms identify functional improvement. Blood tests involving cholesterol, toxic metals, blood sugar, and other chemical markers generally tend to normalize. Pulmonary spirometric measurements, which determine how much and how fast air can be exhaled,

generally improve for most people with impaired pulmonary function. Urine tests document the removal of toxic metals. Measurements of the oxygen content, volume of blood perfusion, and temperature of extremities may show improvement. A variety of other tests also exist which validate the effects of the therapy.

9. HOW DO I KNOW I AM MAKING THE RIGHT DECISION?

Reading literature available on chelation therapy, comparing the statistics with that of other therapeutic regimes, having dialogue with those people that have like conditions that have had chelation therapy, visiting an office where these therapies are administered, talking with the staff and patients, and consulting with the doctor that administers chelation therapy are reasonable ways to gather information to make an intelligent decision. Consulting other doctors that have had first-hand experience with chelation therapy for a second opinion is also reasonable. Sharing this book with your doctor to review followed with a three-way telephone conversation with a chelation specialist, your doctor, and yourself is another approach.

10. DO OTHER THERAPIES ACHIEVE THE SAME RESULTS?

Various alternatives exist to EDTA intravenous chelation therapy. However, not one can be substituted entirely covering all that which chelation does. Using a conglomeration of methods which best suit the individual is the most logical alternative. Projected results in terms of safety, speed, cost, quality, and quantity need to be assessed for all applicable alternatives in order to responsibly determine which strategies are best. Once the strategies are selected and initiated, they must be monitored. Those which appear to be beneficial are reinforced and those which do not appear to work are stopped. Nobody can do all there is that may improve health.

11. IS CHELATION A NATURAL PROCESS?

Technically, the chemical process of chelation supplies the body with nutrients, removes toxic materials and is involved in processes vital for maintaining life. Biochemically chelation involves the binding of metallic atoms to molecular structures with claw-like chemical bonds. The resulting combination of the metal and the molecular structure to which it is bound is called a chelate. Chlorophyll is a chelate containing the metal

magnesium. Chlorophyll is the major green pigment in plants. Chlorophyll supplies the body with magnesium as a nutrient. Magnesium is essential for numerous life- giving biochemical processes. Hemoglobin is a chelate of iron. Hemoglobin is involved in the transfer of oxygen to the tissues. Other substances may combine with lead to form a chelate of lead and aid in elimination of lead from the body. Lead interferes with normal biochemical function leading to a variety of problems including impaired immunity, thinking and vitality. The bio chemistry of life cannot operate without chelation. Chelation therapy involves the understanding and use of the chelation process to foster more optimal function and repair.

12. MUST CHELATION THERAPY BE GIVEN INTRAVENOUSLY TO BE EFFECTIVE?

Although EDTA is not suited for intramuscular injection, various intramuscular metal binders are available. Each have properties and uses not quite the same as the next. For instance, BAL (dimercaptopropanol) is as effective in removing mercury and arsenic where as DFO (deferoxamine) is effective in removing excess iron. Neither is as effective in addressing calcium and lead as intravenous EDTA. Chelation may also be accomplished orally as well as by injection.

13. WHAT IS ORAL CHELATION THERAPY?

Oral chelation by strict chemical definition involves ielate of taking by mouth various substances that bind cygen to biochemically to metallic minerals via “claw-like” bonds. In a broader clinical sense, metal binders involving other kinds of bonds with similar effects, are also called: chemical chelators. Thus, oral metal binders that involve such including binding like garlic or DMSA (dimercaptosuccinic acid) may be called oral chelators. However in the strict tion chemical sense, such metal binders are not considered true chelators. Oral chelating substances are numerous and have diverse qualities.

Some chelating substances are naturally occurring. For example, citric acid and ascorbic acid (vitamin C) are chelating substances found in citrus fruit. Both substances can combine with toxic metallic minerals and remove them from the body, however with limitations. For example, many people who drink orange juice daily have hardening of the arteries, heart attacks and strokes. Citric acid and ascorbic acid may also be manufactured synthetically in concentrated forms enabling larger amounts to be ingested economically. Additionally, these nutritional chelating substances may be combined with beneficial minerals such as magnesium to enhance mineral assimilation, transport, and utilization in the body. Garlic contains substances which bind with cadmium, lead and mercury and help remove these toxic substances from the body. Garlic may be taken orally in the diet or may be taken as processed supplements in forms of capsules, liquids, powders, and tablets. These metal binding substances when taken even in large quantities do not approach the results or speed afforded

by the addition of intravenous EDTA in many conditions.

EDTA is also used orally as a chelating substance. However, oral EDTA not nearly as effective for the same purposes as intravenous EDTA due to poor absorption through the intestinal walls.

DMSA is a synthetic oral metal binding substance available by prescription. DMSA may be used to complement EDTA in that they both remove lead. However, they also are dissimilar and therefore may not totally replace one another. For example, EDTA is considered effective in binding calcium whereas DMSA is not. DMSA is much more effective in removing mercury from the body than EDTA, although both bind mercury.

The various metal binding agents marketed throughout the world have unique individual properties. Chelating specialists know how to take advantage of the intrinsic qualities of these various therapeutic agents to best serve patients' needs.

14. HOW MANY? HOW OFTEN? HOW MUCH?

Individual needs for intravenous chelation therapy vary with time and person. No two people are exactly the

same. Determination of therapeutic regimes are based upon years of experience, scientific studies, individual response, diagnostic tests, etc.

The average course of therapy varies. For those who wish preventive care, perhaps a course of 10 administrations would be appropriate. For those with symptomatic atherosclerotic conditions associated with severe chest pain and leg pain, perhaps 25-30 administrations are appropriate. For a person with severe general atherosclerotic blockages complicated by other conditions, 40 or more may be given. The mean is about 25-30. Therapy is generally administered on the average of one to three times weekly during the course of therapy. Periodic maintenance therapy, such as one administration monthly may or may not be necessary depending on the individual need. The amount and frequency of EDTA use is adjusted to individual need taking into account weight and physical status. The average amount of EDTA is 3gm given over 3-4 hours. Administering EDTA in lesser quantities in less time has met with success However, some benefit may be lost.

15. WHO SHOULD HAVE CHELATION AND WHEN?

Most well and ill adults, and practically all practicing doctors are candidates for preventive or remedial intravenous chelation care Although degenerative processes are found relatively early in life,

chelation is restricted generally to children who have proven metal toxicity. Today is the best time to start for most of us over age 30 for preventive and therapeutic purposes.

16. WHAT KIND OF DOCTORS ADMINISTER CHELATION?

Physicians who use chelation are accomplished in conventional medicine. They are fully licensed M.D.s (medical doctors) and D.O.s (doctors of osteopathy) as are their colleagues who do not offer chelation therapy. Chelating physicians may be board certified in other specialties and hold prestigious academic professional appointments. Some are celebrated and internationally renowned personalities. Others may be less known but equally important doctors servicing urban and rural communities. Their medical practices often incorporate various forms of health care to complement standard medical practice. Most are well versed in nutrition. All look beyond conventional medical wisdom to bring further benefit to their patients.

HOW DOES INTRAVENOUS CHELATION THERAPY WORK ?

Any plausible theory of how chelation therapy works must answer these two questions:

1. How could one therapy be used for different conditions in different people?

2. How could one therapy be used for different conditions in the same person?

The most plausible theory suggests that intravenous chelation therapy addresses fundamental biochemical causes of disease common to many conditions. EDTA is known to improve biochemical efficiency so that the body can better function and repair itself. Several proposed pathways through which intravenous chelation works, involve but are not limited to:

- Free radicals
- Mineral toxicity
- Mineral metabolism
- Cross-linking
- Dissolving atheromatous plaque
- Inappropriate blood clotting
- Inflammation
- Hormonal regulation

CHELATION HELPS CONTROL DESTRUCTION BY EXCESS FREE RADICALS

Free radicals are produced normally in the body and are necessary for survival. For example, white blood cells create free radicals to destroy an invading virus. When free radicals are in excess, destructive processes leading to disease occur. Imprudent diet, poisons, radiation, physical trauma, and other forms of stress lead to free radical excess.

Technically, a free radical is an atom or molecule which is unstable due to missing a paired electron in its outer layer. To become stable the electron must be replaced. Free radicals react with neighboring atoms or molecules by taking their electrons. Upon loosing electrons needed for stability, the neighboring atoms or molecules may become free radicals themselves. Chain reactions may occur. Free radicals are generally promiscuous regarding which molecular structures they affect. Excess free radical activity leads to pathological molecular, functional and structural changes. In the presence of catalysts such as iron and copper, the production of free radicals is accelerated greatly In the presence of poisons such as lead, excess free radicals may accumulate due to impairment of the body’s ability to neutralize free radicals Intravenous chelation therapy removes excess catalysts as well as poisons to favorably modulate free radical activity.

CHELATION HELPS OVERCOME TOXICITY AND IMPROVE METABOLISM OF METALLIC ELEMENTS

Toxicity involves the presence of substances in quantities which prevent optimal function and repair. Metallic elements may be always toxic or only toxic when present in excess.
The metal mercury is without any physiological benefit and is always considered toxic. Mercury binds with vital molecular structures impairing function in spite of how well it may be tolerated. The condition, mercury deficiency, does not exist. DMSA and to a lesser extent EDTA may remove mercury from the body binding with it and carrying it out via the urine.
Some conditions associated with toxic metal excess include: irritability, depression, numbness, tingling, urinary frequency, fatigue, cold extremities, bloated feeling, impaired memory, inappropriate anger, constipation, indecisiveness, tremors, muscle twitches and cramps, ringing in the ears, shortness of breath, itching, skin rashes, metallic taste, nervousness, insomnia, chest pain, joint pain, heart rhythm abnormalities, fluid retention, burning sensations, headaches, and diarrhea. Chronic toxic metal excess is thought to contribute to increased incidence of degenerative diseases including cancer.

Unlike mercury, the metallic element, calcium is essential for life. Where present in excess amounts, calcium interferes with life's processes and leads to degeneration. EDTA chelation is used to reduce excess calcium accumulation and regulate calcium metabolism. Drugs called calcium channel blockers reduce intracellular calcium, angina pectoris, and heart rhythm problems, all of which become more prevalent with aging. EDTA Chelation is known also to address these problems.

Calcium may exist in the states of toxicity and deficiency in the body simultaneously. A calcium deficiency in the bones (osteoporosis) may coexist with calcium excess in the soft tissue of the shoulder (calcific bursitis), in the arteries (atherosclerosis) and in body cells in general (aging). Intravenous EDTA chelation tends to remove calcium from tissues where it is more loosely bound such as the arterial walls and joint soft tissues. It affects parathyroid hormone production, which in turn favors calcium deposition in the bone. The net result is the bones become stronger, the arteries more elastic, and the joints less painful. By reducing calcium in the cells, the cells are able to be more efficient in producing the energy necessary for function and repair. Aging is associated with increased accumulation of calcium in cells. The life spans of cells in the laboratory have been demonstrated to increase with EDTA chelation treatment.

INTRAVENOUS CHELATION REVERSES CROSS-LINKING

Cross-linking is a process that increases with age under the influence of free radicals and accumulation of toxic metals. Molecular structures attach to one another and lose elasticity. Metal elements such as calcium may act as foci for attachment. Cross-linking reduces the ability of tissues to function An example of cross-linking is a rubber hose left in the sun which hardens and cracks Skin wrinkles due to cross-linking EDTA chelation has been shown to reduce skin wrinkling It is useful in restoring elasticity in cases of scieroderma, a debilitating disease, which involves severe progressive cross-linking of body tissues In one study involving chronic obstructive lung disease, the volume and speed by which air could be exchanged through breathing increased by approximately 20%. Ordinarily a worsening of lung elasticity would be expected to occur with time. Cross- linking may lead to cellular inefficiency impairing general health.

CHELATION HELPS CIRCULATION BY DISSOLVING ARTERIAL BLOCKAGE

Although reduction of atherosclerotic blockages may not necessarily always be discernible following intravenous chelation therapy, disappearance of intra-arterial blockages has been demonstrated partially

and totally with angiograms and ultrasound studies. Reduction of blockage need not be large to bring a dramatic increase in blood flow. A 10% increase in diameter of the area where blood flows in the artery may be associated with a 100% or greater increase in blood flow. Reduction of blockage increases with the number of therapies administered. Improvement of blockage has also been found with rigid diet and lifestyle changes but not as dramatically as is found with chelation. Chelation has been thought to reduce blockages by removing calcium deposits in obstructing atherosclerotic plaque which lines the arterial walls. Whether or not calcium acts as a cement holding plaque together is subject to debate. Chelation is also thought to work by improving circulation in blood vessels supplying the same areas of tissue as the diseased arteries, improving the efficiency of the tissue supplied by the diseased arteries allowing better function in spite of reduced circulation, and preventing progression of degenerative processes in all viable blood vessels and tissues of the body. Good health requires adequate circulation to deliver life-giving materials and to eliminate toxic waste materials.

CHELATION HELPS REDUCE EXCESSIVE BLOOD CLOTI1NG AND INFLAMMATION

Unfavorable blood clotting is thought to play a role in development of atherosclerotic plaque. Calcium is

needed for blood clotting. EDTA intravenous therapy temporarily reduces the availability of calcium for pathological clotting. The effects of intravenous EDTA on blood clotting has been measurable weeks after infusion.

Intravenous chelation favorably helps to control the release of bioactive compounds by platelets and various cells of the body which lead to impairment of circulation and inflammation. Chronic circulatory impairment and chronic inflammation precedes degeneration and aging of body tissues.

CHELATION HELPS NORMALIZE HORMONAL REGULATION

Chelation, by improving general function and repair, improves general efficiency of the body including hormonal function. Diabetes mellitus is improved as evidenced by better blood sugar control. Consequences of impaired sugar regulation such as neuropathy and circulatory impairment have been reported to improve. Proper control of blood sugar is important in preventing premature tissue degeneration leading to early aging. Chelation removes toxic metals that accumulate in various endocrine glands. Toxic metals interfere with the expression of normal hormonal activity.

APPENDIX

I.: Recently *(before 1995) Published Reference Books

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Forty Something Forever (A Consumers Guide to ChelationTherapy and Other Heart Savers.), Harold and Arline Brecher,
Health Savers Press, P.O. Box 683, Herndon, VA 22070, (1992).

Bypassing The Bypass (A New Technique of Chelation Therapy), Elmer Cranton, M.D., Medex Publishers Inc., Ripshin Rd., P.O. Box 44, Trout Dale, VA 24378-0044, (1992).

The Chelation Way (The Complete Book of Chelation Therapy), Morton Walker, D.P.M., Avery Publishing Group Inc., Garden City Park, New York (1990).

The Chelation Answer, Morton Walker, D.P.M.,
Second Opinion Publishing Inc., 1350 Center Dr., Suite 100, Dunwoody, Georgia 38338, (1982, modified 1994).

II. Reference: Physician Directory & Organizations

American College for Advancement in Medicine

23121 Verdugo Dr., Suite 204
Laguna Hills, CA 92653
Tel. 1-800-532-3688 or (949) 583-7666
Fax (949) 455-9679
E-mail: acam@acam.org
Website: http//www. acam.org

American Board of Chelation Therapy

Now (2006) known as the

AMERICAN BOARD OF CLINICAL METAL TOXICOLOGY

1407 ½ Wells Street

Chicago, IL 60610. USA

Tel. (312) 266-3688

Fax: (714) 840-5951

Website www.abcmt.com

Great Lakes Association of Clinical Medicine

Now(2006) known as the

International College of Integrative Medicine

Box 271, Bluffton, OH 45817

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Telephone: (866) 464-5226, (610) 585-8464

Website www.icimed.com

III “Proof”

Clinical Studies From
Peer Reviewed Medical Journals
With
Positive Conclusions

In the medical field, the most prestigious information is in the form of clinical studies found in publications available for scrutiny by all physicians. Published studies are not infallible, only prestigious. Obviously, information need not be published in studies to be valuable or valid. Other sources of information not addressed in this text include unpublished reports, testimonials, and hearsay.

The generally accepted uses for EDTA chelation include lead toxicity, digitalis toxicity, certain cardiac arrhythmias, and high serum levels of calcium. The use of EDTA chelation in the prevention and treatment of chronic degenerative disorders such as arteriosclerosis, arthritis, diabetes, and cancer has been subject to controversy. From published peer reviewed scientific literature, sample studies are presented that support the case for EDTA chelation therapy in chronological order.

The Format of the of the Descriptor of Studies in this Book is as follows:

(Reference list number), Last name of author(s), Initials of first and second name of author(s), "TITLE OF STUDY", Name of publication; year of publication; volume number: page number. Descriptive condensation of the study contents with commentary.

(1) Lamar, C., "CHELATION THERAPY OF OCCLUSIVE ARTERIOSCLEROSIS IN DIABETIC PATIENTS", Angiology 1964; 15: 379-394.

"Of 15 diabetic patients suffering from severe vascular complications, all were relieved of their various degrees of peripheral vascular insufficiency; 8 were restored to normal after suffering from strokes or advanced brain syndrome; 4 were improved of their cardiac failure and 3 patients with different degrees of diabetic retinopathy obtained dramatic subjective and objective benefits, the latter illustrated by periodically taken retinal microphotographs. Seven of these 15 diabetics have shown persistent improvement with reduction of their insulin needs after EDTA."

(2) Leipzig, L.J., Boyle, A.J., et al, "CASE HISTORIES OF RHEUMATOID ARTHRITIS TREATED WITH SODIUM OR MAGNESIUM EDTA.", Journal of Chronic Diseases 1970;22; 553-563.

32 patients with rheumatoid arthritis treated with Mg EDTA were followed 1-10 years. 27 responded favorably, 23 maintained improvement. Where necessary additional EDTA infusions were given over a period of time.

(3) Casdorph, H.R., "EDTA CHELATION THERAPY, EFFICACY IN ARTERIOSCLEROTIC HEART DISEASE", Journal of Holistic Medicine 1981; 3: 53-59.

18 patients with atherosclerotic heart disease and angina pectoris were evaluated with radioisotopes before and after 30 EDTA chelation infusions to measure the left ventricular ejection fraction, a measurement of how much blood the heart could pump per heartbeat. In this study, 16 patients had complete relief of angina and two patients had partial relief. Of the 18, 17 had improvement in ejection fraction.

(4) Casdorph, H.R., "EDTA CHELATION THERAPY II, EFFICACY IN BRAIN DISORDERS", Journal of Holistic Medicine 1981; 3: 101-117.

After 20 infusions administered to 15 patients with

documented impairment of cerebral blood flow, 14 demonstrated improved cerebral blood flow, 14 demonstrated improved cerebral blood flow via radioisotopic measurements. All 15 improved clinically despite one not having had demonstrated blood flow improvement. Dramatic improvement in cognitive and orientation abilities was described.

(5) McDonagh, E.W., Rudolph, C.J., Cheraskin, E., "THE HOMEOSTATIC EFFECT OF EDTA WITH SUPPORTIVE MULTI-VITAMIN TRACE MINERAL SUPPLEMENTATIONUPON HIGH-DENSITY LIPOPROTEINS (HDL)", Journal of Osteopathic Physicians & Surgeons, CA. 1982; 2: 34.

358 patients were studied. The serum Cholesterol/HDL ratio following chelation therapy tended to normalize toward 4.5. (Cholesterol/HDL ratio is used as a predictor of development of hardening of the arteries.)
(6) McDonagh, E.W., Rudolph, C.J., Cheraskin, E., "THE

EFFECT OF INTRAVENOUS DISODIUM ETHYLENEDIAMINETETRAACETIC ACID (EDTA) UPON BLOOD CHOLESTEROL IN A PRIVATE PRACTICE ENVIRONMENT", Journal of International Academy of Preventive Medicine 1982; 7; 1: 5-12.

Cholesterol was lowered an average of 14% in 142 patients in approximately 2-4 weeks with the greater reductions in those who had higher cholesterol initially

(7) McDonagh, E.W., Rudolph, C.J., Cheraskin, E., "AN OCULOCEREBROVASCULOMETRIC ANALYSIS OF IMPROVEMENT IN ARTERIAL STENOSIS FOLLOWING EDTA CHELATION THERAPY", Journal of Holistic Medicine 1982;4: 2 1-23.

After an average of 28 infusions, 57 patients were found to have an average of 18% diminishment of cerebrovascular (brain blood vessel) blockage with 87% of the patients showing objective improvement in cerebrovascular blood flow.

(8) McDonagh, E.W., Rudolph, C.J., Cheraskin, E., "THE EFFECT OF EDTA CHELATION THERAPY PLUS SUPPORTIVE MULTI-VITAMIN-TRACE MINERAL SUPPLEMENTATION UPON RENAL FUNCTION: A STUDY IN SERUM CREATININE", Journal of Holistic Medicine 1982; 4: 146-151.

383 subjects with chronic degenerative disorders were treated with EDTA and supportive multivitamin trace mineral supplements for approximately 50 days. Serum creatinine levels (used to measure the status of kidney function) tended to normalize. The authors concluded the therapeutic regimen used is not toxic to the kidneys, and may improve kidney function.

(9) Casdorph, H.R., Farr, C.H., "EDTA CHELATION THERAPY II, TREATMENT OF PERIPHERAL"OCCLUSION AN ALTERNATIVE TO AMPUTATION", Journal of Holistic Medicine 1983; 5:3- 15

Four patients with end-page peripheral vascular disease who had been referred for surgical amputation were treated with chelation. After one year, following initiation of therapy, all 4 were pain-free with their extremities intact.

(10) McDonagh, E.W., Rudolph, R.J., Cheraskin, E.,"EFFECT OF EDTA CHELATION THERAPY PLUS MULTI-VITAMIN TRACE MINERAL SUPPLEMENTATION UPON VASCULAR DYNAMICS; ANKLE/BRACHIAL DOPPLER SYSTOLIC BLOOD PRESSURE RATIO", Journal of Holistic Medicine 1985; 7: 16-22.

117 lower extremities in 77 patients with peripheral arterial blockage were studied. Arterial blood flow improved significantly after 26 infusions in 60 days.

(11) McDonagh, E.W., Rudolph, C.J., Cheraskin, E., "THE PSYCHOTHERAPEUTIC POTENTIAL OF EDTA CHELATION", Journal of Orthomolecular Psychiatry 198514; 3: 214-217.

139 patients demonstrated improved mood and decreased anxiety and tension following 26 infusions in approximately 60 days.

(12) Olszwer, B., Carter, J.P., "EDTA CHELATION THERAPY: A RETROSPECTIVE STUDY OF 2,870 PATIENTS", Medical Hypothesis 1988; 27: 41-49.

Of 2,870 patients, 844 patients with ischemic heart disease 76.89% had "marked" improvement and 16.56% had "good"improvement. Of 1,130 patients with peripheral vascular disease and intermittent claudication, 91% showed "marked" improvement and 7.6% showed "good" improvement. 504 patients with cerebral vascular disease and central nervous system disease demonstrated overall 24% with "marked" improvement and with 30% "good" improvement.

Of 4 patients with scleroderma 3 had "marked" improvement and 1 had "good" improvement. Overall, 89% of all 2,870 patients had improvement. Criteria for marked improvement for ischemic heart disease included:

- Stress test previously positive becoming negative.
- Previously symptomatic becoming asymptomatic while off all drugs.

Criteria for marked improvement for peripheral vascular disease included:

- Ability to walk 5 times the previous distance without claudication (pain due to insufficient circulation).

• Appearance of lower extremities becoming normal.
• Doppler and ultrasound tests becoming normal.

Central nervous system disease symptoms included asthenia, numbness, poor balance, frequent falls, dizziness, vertigo, tinnitus, and cognitive problems.

(13) Rudolph, C.J., McDonagh, E.W., Wussow, D.G., "THE EFFECT OF INTRAVENOUS DISODIUM ETHYLENEDIAMINETETRAACETIC ACID (EDTA) UPON BONE DENSITY LEVELS", Journal of Advancement in Medicine 1988; 1, 2: 79-85.

Following 3 months of EDTA therapy in 61 patients no detectable loss of bone calcium was noted. Slight increase of bone calcium density was noted in those with osteoporosis as measured by bone densitometry.

(14) Blumer, W., Cranton, E.M., "NINETY PERCENT REDUCTION IN CANCER MORTALITY AFTER CHELATION THERAPY WITH EDTA.", Journal of Advancement in Medicine 1989; 2; 1, 2: 183-188.

In a Swiss study of 231 subjects, 59 patients received at least 10 calcium EDTA infusions. 172 were untreated as a control. After 18 years following the infusions. 1 death due to cancer occurred in the treated group (1.7%) as opposed to 30 in the untreated group (17.6%), a ratio of 1 to 10. Significant cardiovascular problems were also reduced in the chelation treated group.

(15) Kindness, G., Frackelton, J.P., “EFFECT OF ETHYLENE DIAMINE TETRAACETIC ACID (EDTA) ON PLATELET AGGREGATION IN HUMAN BLOOD,” Journalof Advancement in Medicine 1989; 2; 4: 519-529.

In 1989 researchers found that EDTA inhibits excessive platelet aggregation which leads to thrombotic episodes Pathological thrombosis can lead to heart attacks, strokes and formation of atheromatous plaque (clogging of the arteries)

(16) Rudolph, CJ, McDonagh, E W, “EFFECT OF EDTA CHELATION AND SUPPORTIVE MULTI-VITAMIN/TRACEMINERAL SUPPLEMENT ON CHRONIC LUNG DISORDERS A STUDY OF PVC AND FEV - 1” Journal of Advancement in Medicine 1989, 2, 4 553-561

38 patients received approximately 30 treatments of EDTA chelation administered over 9 months duration. The volume and rate that air could be expelled from the lungs was compared to that before the initiation of therapy. The average improvement in both volume and rate was approximately 12.5% with over 90% of the subjects improving. Those with chronic obstructive lung disorders averaged approximately 20% improvement. This report suggests chelation is helpful in improving pulmonary function associated with obstructive lung disease. This is especially significant considering chronic lung disease is expected to worsen with time.

(17) Van Der Shaar, "EXERCISE TOLERANCE TESTS IN CHELATION THERAPY", Journal of Advancement of Medicine 1989; 2; 4: 563-566.

Exercise tolerance in 111 patients with cardiovascular (coronary, peripheral, and/or cerebral) improved following 25 chelation infusions, reflecting improved physical performance.

(18) Rudolph, C.J., McDonagh, E.W., "EFFECT OF EDTA CHELATION AND SUPPORTIVE MULTI-VITAMIN TRACE MINERAL SUPPLEMENTATION ON CAROTID CIRCULATION: CASE REPORT", Journal of Advancement in Medicine 1990; Vol. 3, No. 1, Spring: 5-11.

A patient had an initial 98% obstruction by carotid duplex scanning. After 30 infusions, the obstruction was reduced to 33%.

(19) Olszwer, E., Sabbag, F.C., Carter, J.P., "A PILOT DOUBLE BLIND STUDY OF SODIUM-MAGNESIUM EDTA IN PERIPHERAL VASCULAR DISEASE", Journal of the National Medical Association 1990; 82; 3.

A double blind crossover study was performed in Brazil involving 10 patients with peripheral vascular disease where the EDTA group improved and the control group did not. After "crossing over" to receive EDTA, the control group also improved.

(**20) Rudolph, E.J. McDonagh, E.W., Barber, R.K., "EFFECT OF EDTA CHELATION ON SERUM IRON", Journal of Advancement in Medicine 1991; 4; 1: 39-45.**

220 patients following 30 infusions of EDTA had the average serum iron concentration drop 17.5%. Abnormally high serum iron concentrations were found to drop further and abnormally low serum iron concentrations actually rose.(Increased iron stores have been associated with increased risk of heart attack)

21) Rudolph, C.J., McDonagh, E.W., Barber, R.K., "A NONSURGICAL APPROACH TO OBSTRUCTIVE CAROTID STENOSIS USING EDTA CHELATION", Journal of Advancement in Medicine 1991; 4; 3: 157-68.

30 patients with carotid stenosis given 30 EDTA infusions over 10 months had an overall decrease in intra arterial obstruction of approximately 20.9%. Patients with greater than 70% stenosis of the internal carotid demonstrated a mean decrease of 41.6% in obstruction of the arterial lumen. (Patients with over 70% stenosis are considered high risk for having strokes. According to the American College of Physicians guidelines, such patients meet criteria for "stroke preventing" carotid endarterectomy surgery. The authors pointed out from

research done elsewhere that as many as 9.8% of carotid endarterectomy patients may have complications of stroke or death within 30 days after surgery. As many as 25% of patients may develop reclogging within 2 years.)

The authors summarized: “If the end result is equal to or better than surgery, chelation should be offered as the preferred treatment.”

(22) Hancke, C., Flytlie, K., “BENEFITS OF EDTA CHELATION THERAPY IN ARTERIOSCLEROSIS: A RETROSPECTIVE STUDY OF 470 PATIENTS,” Journal of Advancement in Medicine 1993; 6; 3: 161-171.

470 patients received at least 15 infusions each, and manifested no significant adverse side effects. Only 147 were smokers of which 86 continued to smoke during treatment. Of 262 patients with claudication (lower limb pain with exercise), 82% improved. Of 44 patients with impaired wound healing, 31 improved. Of 137 who complained of cold feet, 110 improved.

265 patients had myocardial ischemia (impaired heart circulation). Of 253 with abnormal EKG changes, 175 improved. In addition to heart and leg complaints, symptoms related to sexual potency, sight, hearing, tinnitus, and migraine improved. Most notably, after

chelation of 65 patients who were referred for coronary
bypass surgery, 58 no longer needed it and of 27 referred d for lower extremity amputation, 24 avoided it.

(23) McDonagh, E.W., Rudolph C.J., "NON-INVASIVE TREATMENT FOR SEQUELAE OF FAILED CORONARY BLOOD CIRCULATION: 100% OCCLUSION OF LEFT ANTERIOR DESCENDING CORONARY ARTERY, 30% STENOSIS OF RIGHT CORONARY ARTERY AND LEFT VENTRICULAR CONTRACTILITY DEFICIT", Journal of Neuralogical Orthopedic Medicine and Surgery 1993; 14: 169-173.

Angiograms were done before and after 72 chelation therapies in 1990 and 1992, respectively. The patient manifested shortness of breath, fatigue, and anginal chest pain. The initial angiogram done before chelation therapy demonstrated a 100% occlusion of the left anterior descending coronary artery and a 30% occlusion of the right coronary artery. Ejection fraction, a measurement reflecting how much blood the heart can pump as a result of its contractility, was poor (30%). Coronary bypass graft surgery had been advised and refused prior to the study.
Following 72 chelation therapies, the original 100% occlusion was found to be approximately 65% and the original 30% occlusion was eliminated totally. The ejection fraction was increased poor (30%) to good (70%).

(25) Blankenhorn, D.H. et al, “CORONARY ANGIOGRAPHIC CHANGES WITH LOVASTIN THERAPY. THE MONITORED ARTERIOSCLEROSIS REGRESSION STUDY (MARS)”, Annals of Internal Medicine 1993; 119: 969-976.

The effect of atherosclerotic coronary artery treatment with the lipid lowering drug, lovastatin, was evaluated on 270 patients. Before and after angiographic studies, averaging 2.2 years apart, demonstrated an average 1.1% increase in blockage in the treated group and a 22% increase in the untreated group. For lesions over 50% blockage, the lovastatin treated group had 4.1% decrease in blockage while the untreated group had a 0.9% increase.

In 1994, lovastin, marketed as Mevacor, has been touted as the most prescribed of the HMG-CoA reductase inhibiting drugs in the United States. HMG-CoA inhibitors reduce blood cholesterol levels as well as the incidence of cardiovascular related illness and death. These drugs may vary in efficacy and safety. Before selection and use potential benefit versus potential harm should be weighed.

Chelation may be a logical alternative where and when
HMG-C0A reductase inhibitors are deemed inappropriate.
Chelation may also be used in conjunction with HMG C0A reductase inhibitors for additive benefit.

Unfortunately, the parameters used in these three studies were not evenly matched for easy comparison. However, a definite and dramatic trend can be discerned by comparing the amount of blockage regression noted in the chelation, lifestyle, and HMG-C0A reductase inhibitory drug studies.

(26) Chappell, L.T., Stahl, J.P., "THE CORRELATION BETWEEN EDTA CHELATION THERAPY AND IMPROVEMENTS IN CARDIOVASCULAR FUNCTION META-ANALYSIS", Journal of Advancement in Medicine 1993; 6; 3: 139-160.

The meta-analysis involved nineteen studies which included 22,765 patients. The relationship of EDTA therapy to improved cardiovascular function was found to be highly correlated. 87% of patients demonstrated improved cardiovascular function through objective testing.

(27) RUDOLPH, C.J., SAMUELS, O.D., "VISUAL FIELD EVIDENCE OF MACULAR DEGENERATION REVERSAL USING A COMBINATION OF EDTA CHELATION AND MULTIPLE VITAMIN AND TRACE MINERAL THERAPY",Journal of Advancement in Medicine 1994; 7; 4; 203-212.

A 59 year old patient with macular degeneration after
30 infusions of EDTA together with nutrient supplementation showed measurable improvement. Right

eye acuity changed positively from 20/60 to 20/25 and left eye changed positively from 20/30 to 20/20. The visual fields also measurably improved.

Macular degeneration is a common cause of blindness in the elderly involving loss of viable tissue function in the macular area of the eye. Conventional medicine generally offers no to relatively poor therapeutic options. Chelation therapy has been associated with varying degrees of clinical improvement in cases where destructive laser therapy has not been used.

Published single case studies are valuable sources of information and thought. However they are not considered as reliable as studies involving many patients. Non-published reports also provide valuable information. Since such reports are not subject to peer reviewed scrutiny as those published, they are not considered as reliable. Studies reported by doctors who are not involved from beginning to end of treatment have a tendency toward bias and distortion. To maximize reliability and objectivity, only published studies authored by doctors involved from beginning to end are used as references in this text. Despite these precautions, problems with reliability and objectivity may persist in larger studies as well as smaller ones. Such problems will be exemplified in the following text.

V. “Contra-Proof”

(When Medical Politics Mixes With Medical Science)

Clinical Studies From Peer Reviewed Medical Journals With Negative Conclusions

Opponents of chelation therapy generally cite two studies (published as 6 papers), one from the U.S.A. and the other from Denmark which reflect negatively on the efficacy of chelation therapy. A third and most recent study was performed in New Zealand.

In the earlier study done in the U.S.A., researchers in 1960 viewed Chelation in a positive light. In a later “reappraisal” of the study in 1963, the same authors concluded chelation is not effective, despite data to the contrary. The second study, done in Denmark, involved four different reports published in three different journals (1991 through 1993). This second study was so badly flawed that it was investigated by the Danish Committee for Investigation into Scientific Dishonesty. The third study from New Zealand, due to unique findings, will be addressed under the heading of “Mixed-Proof”. The ensuing discussion of these studies is considerably detailed and not essential for the understanding of chelation therapy.

FIRST STUDY

The American study was published in two parts as:

(28) Meltzer, L.E., Ural, E., Kitchell, J.R., "THE TREATMENT OF CORONARY ARTERY DISEASE WITHDISODIUM EDTA.", In: Metal-Binding in Medicine pg.132-136. Edited by Seven, M.J. Philadelphia 1960.

29) Kitchell, J.R., et al, "THE TREATMENT OF CORONARY ARTERY DISEASE WITH DISODIUM EDTA - A REAPPRAISAL", American Journal of Cardiology 1963; 11: 501-506.

The American study involved 2 groups. The first group comprised 10 patients with severe angina pectoris. The angina patients chosen for the study had not responded acceptably to medical therapy and were declared disabled. No improvement was noted during their initial 4-6 weeks of 20 chelation infusions. The infusions were therefore discontinued. However, after 3 months 9 out of 10 had improved angina and 8 out of 10 had improved EKG findings. After 4 years, 5 (50%) remained alive and 2 remained improved.

The second group of 28 patients of which 23 had at least one previous heart attack were followed up to 3 years. After 3 months following 20 infusions, 64.2% had improved. At 18 months, 74% were still living. An

undisclosed number of patients received further therapy after the initial 20 infusions. Overall, at the time of the report a substantial number of those living remained improved.

The authors, despite evidence to the contrary, stated in their summation: “At present we believe that chelation as used in this study did not benefit patients more than other commonly used therapeutic methods. It is not a useful clinical tool in the treatment of coronary disease at the present time.”

The Controversy

The authors discussed placebo effect as a possible mechanism of action. Yet they admitted that the manifestation of patient improvement weeks after the infusions were discontinued is suggestive of some other mechanism than placebo.

The authors also made reference to chelation per their own research being associated with improved circulation in small blood vessels below the knee, reduced insulin need in diabetics, and reduced serum cholesterol levels during therapy. These findings suggest physiological changes beyond mere placebo effect.

The authors stated that the first 10 coronary patients failed to respond to acceptable therapies of the day. They also stated 90% had improvement initially following chelation. 50% of these cardiac disabled patients survived 4 years with 40% of the survivors remaining improved.

Yet, the authors somehow concluded that there was no benefit beyond commonly used methods.

These same authors also concluded, without a matched control group, that length of survival is not enhanced with chelation therapy. Regardless whether or not the calculations of the authors reported in 1963 are realistic, improvement in longevity for advanced coronary patients is not a necessary requirement for therapy to be accepted. In general, coronary bypass surgery does not statistically appear to improve long-term survival. Two major published coronary bypass studies, each involving hundreds of patients, deal with long term survival of at least ten years.

(30) "Eleven Year Survival in the Veterans Administration Randomized Trial of Coronary Bypass Surgery for Stable Angina", New England Journal of Medicine 1984; 311: 1333-39. (686 patients)

(31) "Ten Year Follow-up of Survival and Myocardial Infarction in the Randomized Coronary Artery Surgery Study", Circulation 1990; 82: 1629-1646. (780 patients)

In these studies, although different subgroups of patients may initially be favored by having care either with or without surgery, overall, surgery does not significantly increase long term survival rates. Neither does surgery appear to decrease, overall, the incidents of

non-fatal heart attacks. Yet, bypass surgery has been often embraced by cardiologists, vascular surgeons and other members of the bypass industry as being necessary, sometimes, for reasons proven to be statistically invalid.

The results of the American study are particularly impressive since this study was done over 30 years ago before the availability of nutritional supplementation, medicines, chelation protocols, and dietary and lifestyle knowledge of today. The study does suggest chelation is safe and effective when used without these more contemporary advances available today.

Why wOuld the authors deny benefit to occur for coronary patients above and beyond that of other commonly used therapies after demonstrating it does? Why would the authors claim chelation is not a useful tool in treatment of coronary disease after demonstrating it is An acceptable scientific explanation is lacking. What other forces could influence the writing of such conclusions? Funding of medical research is often political and controlled by outside interests. This study at least in part was funded by outside interests. At least one of the authors came to support a competing coronary surgical procedure, the ill fated “internal mammary bypass.” What actually took place is not common knowledge.

SECOND STUDY

The second study was performed by vascular surgeons who derive income from the Danish socialized medical system. Chelation is not paid by the Danish government under this system. Patients pay privately for chelation rather than undergo governmental-subsidized cardiovascular surgery. This study was undertaken by the vascular surgeons while politicians were considering whether or not chelation therapy should be paid by the Danish socialized medical system.

The Danish study involved 153 patients who received 20 treatments of either intravenous disodium EDTA or intravenous saline (salt water). The saline served as the placebo control.

From this study, four papers were published. Each paper dealt with different sized groups of patients involved in the original study.

(32) Guldager, B., Jelines, R., et al, "EDTA TREATMENT OF INTERMITFENT CLAUDICATION A DOUBLE BLIND,PLACEBO CONTROLLED STUDY", Journal of InternalMedicine 1992; 231: 261-267. (153 patients)

(33) Sloth-Nielsen, J. Guldager, B., et al, "ARTERIOGRAPHIC FINDINGS IN EDTA CHELATION THERAPY ON PERIPHERAL ARTERIOSCLEROSIS", American Journal of Surgery 1992; 162: 122-125. (30 patients)

(34) Guldager, G., Faergemon, 0., et al, "DISODIUM ETHYLYENEDIAMINE TETRAACETIC ACID, EDTA HAS NO EFFECT ON BLOOD LIPIDS IN ARTHROSCLEROTIC PATIENTS", Danish Medical Bulletin 1993; 40: 625-627 (29 patients)

(35) Guldager, B., Brixen, K.T., et al, "EFFECTS OF INTRAVENOUS EDTA TREATMENT OF SERUM PARATHYROID HORMONE (1-84) AND BIOCHEMICAL MARKERS OF BONE TURNOVER", Danish Medical Bulletin 1993; 40: 627-630. (54 patients)

THE CONTROVERSY

Despite the preponderance of evidence to the contrary from other studies, the vascular surgeons concluded from their own data that chelation does not work for Each atherosclerotic vascular disease and probably results in p calcium loss from the bone. Questions ranging from incompetence to deliberate rigging were raised by critics of this study. Ten criticisms of the study include: The study was not double blind as claimed by the authors. In a double blinded study the patients and the treating clinicians must not know who is receiving the

substance tested versus the placebo The secrecy code of which patients received which therapies was broken before the study was completed.

2. The study did not conform to the standard ACAM protocol of the day. In spite of timely notification, the researchers chose to ignore conformity to the proven protocol which is based on experience with millions of infusions.

3. The surgeons had their own EDTA prepared instead of using commercially prepared, quality controlled EDTA. The EDTA used by the surgeons was combined only with sodium. The surgeons reported that their EDTA preparation did not cause pain on infusion. Interestingly, pain is expected to occur with infusions of commercially prepared EDTA combined with only sodium. Critics of the study question the authenticity, preparation, and potency of the EDTA used in the study.
Based on the EDTA preparations used by the surgeons, the surgeons compiled data suggesting that EDTA does not work clinically for circulatory diseases. Since opposite conclusions are drawn from data compiled from a multitude of other researchers using commercially prepared EDTA, an argument may be made against the surgeons having used potent EDTA.

Doctors, experienced in chelation therapy, often neutralize discomfort which occurs with administration of sodium EDTA preparations by adding magnesium as is indicated in ACAM protocol. In order to have a double blind study, patients should not be able to distinguish between the infusions of placebo control and EDTA solutions based on difference in comfort. If the surgeons were incorrect about their EDTA not causing discomfort, the addition of pain eliminating substances such as magnesium to the infusion is essential to mask which intravenous solution is which.

4. The surgeons supplemented their patients with iron taken orally. Iron is thought to counteract the effects of
EDTA.

5. Approximately 69%, most of the subjects in the study, were smokers. Smoking, in part, negates the effectiveness
of EDTA therapy.

6. The patients were permitted to attach their own IV bottles without supervision This leaves the possibility of having mix-ups. Data supports the possibility that mix ups occurred. Both placebo and treatment patient groups had a significant improvement in the amount of distance

they could walk and the amount of distance they could walk pain free. However, patients with severe disease would be expected to get worse instead of better with time, especially if the patients continue to smoke. Indeed, in research done elsewhere, the placebo group did not improve while the EDTA group did. The incidence of phlebitis with infusion was high in both the control and the treatment groups. Amazingly, 35% of the treatment and 28% of the control group using saline were said to have had phlebitis. Except under the circumstances of this study, normal saline solutions are not generally known to cause phlebitis. This data is suggestive of a mix-up or tampering with the IV solutions or data.

7. The study was not properly randomized as claimed in matching the treatment and placebo patient groups. Proper matching is necessary in order to make reliable comparisons. For example, in the subgroup that was studied for arterial obstruction by angiography, 97.7% of the subjects smoked. This percentage is extremely unlikely for patients to be chosen randomly without manipulation from a much larger group comprised of 67% smokers. (Smoking reduces the effectiveness of chelation therapy.)

8. The authors concluded that EDTA therapy probably causes calcium bone loss. They did not do bone

densitometry tests which actually measure the calcium levels of the bone as has been done in other studies. The authors did not explain that although initially small amounts of bone calcium may be lost, the end result is a net gain in bone calcium density.

9. The blood lipid reports including cholesterol submitted by the surgeons were out of phase with what has been reported in other studies done elsewhere. The blood lipid results following EDTA and placebo infusions were reported for only 29 patients out of 153 patients selected by the vascular surgeons, raising again questions of biased selection.

10. Severely occluded patients often need more than 20 chelation infusions to have decisively dramatic effects.
The study was stopped at 20 infusions.
Somehow, this study performed by the surgeon researchers is acclaimed as well designed by critics of chelation therapy. The design, although flawed, is not nearly as flawed as the researchers' execution and conclusions.

The researchers were not known to be trained, experienced, nor expert in chelation therapy. If chelation therapists untrained in vascular surgery published bad results in three different journals reflecting their own failures at administering their own self-styled vascular surgery while blaming vascular surgery rather than themselves, would vascular surgeons stop doing competitive surgery?

VI “Mixed Proof”

One study offered an opportunity to evaluate both the EDTA and the non-EDTA aspects of chelation protocol. A double blind randomized study comparing intravenous infusions with and without EDTA in treatment of occlusive atherosclerotic circulatory disease of the lower extremities was conducted with 32 patients.

(36) van Rij, et al, “CHELATION THERAPY FOR INTERMITITENT CLAUDICATION: A DOUBLE BLIND RANDOMIZED CONTROLLED TRIAL”, Circulation 1994;90; 3: 1194-1199.

Divided into two groups, patients with lower extremity intermittent claudication (pain with exercise due to poor circulation) received 20 infusions, over ten weeks. Both groups were supplemented with oral nutrients and advised about diet and smoking. One group received intravenous infusions of nutrients with EDTA. The second group received infusions of nutrients without EDTA (control group).
Before and after measurements concerning the distance subjects could walk without stopping due to pain, the ratio of ankle to arm blood pressure, and arterial pulsability were made. Inability to tolerate walking distances due to pain, reduced ratio of ankle blood pressure relative to arm blood pressure, and reduced pulsability of blood vessels may be more or less

proportionately related to the degree of severity of impairment of circulation.

Results:

Approximately 60% of the subjects improved in walking distances in both groups with a greater improvement in walking distance noted in the EDTA group. Three months following therapy, the ratio of ankle to arm resting blood pressure determinations, the pulsability indexes, and levels of moderate physical activity had significantly improved statistically in the EDTA group compared to the control. Actually at three months following therapy the resting ankle to arm ratios and the pulsability indexes had worsened for the control group and improved for the EDTA group.

Positive Interpretation

(DAYTON)

This study objectively demonstrates the effectiveness of EDTA chelation protocol. Not only does it demonstrate the EDTA aspect of the protocol to be effective, it demonstrates the non-EDTA aspect to be effective as well In the long term, the ratio of ankle to arm blood pressures and pulsability measurements for the EDTA group improved above and beyond that of the non-EDTA control group. In the short term, both groups demonstrated improved walking distances above and beyond what would be expected by mere chance or by inert placebo effect. Both groups received the non-EDTA aspects of chelation protocol.

Negative Interpretation

(VAN RIJ)

“Chelation Therapy has no significant beneficial effect over placebo in patients with intermittent claudication.”

The Controversy

The authors of the study appear to treat the word chelation as if it refers exclusively to intravenous use of EDTA without giving appropriate importance to other aspects of chelation protocol (supplemental nutrition and lifestyle modification including diet and smoking). Chelation therapy protocol involves nutritional supplementation and lifestyle modification as a placebo. Generally, a placebo is regarded as biologically inert except for psychological effects. The benefits derived from various forms of nutritional supplementation and lifestyle modification have been widely publicized. The control group did not receive an inert biological placebo. Supplemental nutrition and lifestyle modification have therapeutic effects. The negative conclusion expressed by the authors denying significant benefit of chelation therapy in intermittent claudication is refuted in part by statistical analysis of the data the authors presented.

How well the protocol was followed is not fully disclosed. Which diet was prescribed was not noted. Whether or not the diet presented was followed was not noted. Whether or not the smokers comprising 86% of the EDTA group or the smokers comprising 84% of the control group stopped smoking as advised was not noted. Smoking reduces efficacy of chelation therapy. Inappropriate smoking cessation and dietary discipline may harm the outcome.

Patients selected to be in the EDTA group prior to the study were less physically active, were less able to walk long distances, and had. more severe circulatory impairment (as objectively noted in the ankle to arm blood pressure ratios). Thus, the comparison of the outcome differences of the EDTA group and control group were less pronounced than would be expected if the two groups were more equally matched.

Unfortunately, the results of this study were not as dramatic as that found in a similar study (Olszer, et al 1990) which also involved 20 infusions of EDTA, however, administered to subjects with less severe circulatory impairment. Generally more infusions are needed to obtain pronounced beneficial effects where circulatory clogging is more severe. The authors, by stopping therapy at 20 infusions, did not administer enough infusions to obtain more optimal results.

Theoretically, less than dramatic effects may be seen initially in cases of severe blockage. In part this phenomenon may be explained by Poiseuille's law of physics. Poiseuille stated that the flow of fluids is related to the fourth power of the diameter of the tubular opening through which the fluids pass. This means for non-mathematicians, that arterial blood flow can dramatically increase with only a small reduction in clogging. As clogging is reduced, the surface area of the inner arterial walls exposed to flowing blood increases, further favoring reversal of clogging. Pain symptoms do not disappear until enough blood is able to flow through an artery and/or through other arteries supplying 'the affected area.

Why the tuthors chose to draw such a negative conclusion in face of evidence to the contrary is questionable. The study was performed under the auspices of a surgeon at an orthodox medical school supported by a grant from a medically orthodox oriented foundation. The history of medicine has taught that innovations of the day are often vehemently opposed before they become the truths of tomorrow (especially where financial interests are involved).

Choosing Chelation Therapy Versus Coronary Surgery and Other Invasive Procedures

"First Do No Harm"

Is deferring cardiovascular surgery to have chelation therapy safe? In order to answer this question, the surgical myth of the "walking time bomb" must be debunked. Based on statistics, deferring coronary angiography and coronary surgery is generally safe for medically stable patients with coronary occlusive disease. In many instances it may be life saving. Studies suggest that many cardiovascular patients may fare well by not opting for surgical solutions even after being advised to do so. Three studies are presented as evidence.

(37) Grayboys, T.B., et al, "SECOND OPINION PROGRAM FOR CORONARY BYPASS GRAFT SURGERY", Journal of the American Medical Association 1987; 258: 1611-1614.

88 patients who were previously advised to have coronary bypass surgery were evaluated on a second opinion basis. 84% were advised not to have surgery based on non-invasive testing. Of the 60 patients who opted not to have the surgery, all remained alive during the two year study.

(38) Hueb, W., et al, "TWO TO EIGHT YEAR SURVIVAL RATES IN PATIENTS WHO REFUSE CORONARY BYPASS GRAFTING", American Journal of Cardiology 1989; 63:155-159.

150 patients who refused coronary bypass surgery against advice were followed 2-8 years. In patients with one or two diseased coronary vessels, no deaths were reported. In patients with coronary occlusive disease patterns known as left main equivalent, left main coronary artery, or 3 vessels disease, 1.3% died per year.

(39) Grayboys, T.B., et al, "RESULTS OF A SECOND OPINION TRIAL AMONG PATIENTS RECOMMENDED FOR CORONARY ANGIOGRAPHY", Journal of the American Medical Association 1992; 268: 2537-2540.

Of the 168 patients who had been previously advised to have coronary angiograms, 94% were judged to not need them based on non-invasive findings. These patients were followed for a mean average of 46.5% months with the following results: 7 cardiac deaths occurred (1.1% annual rate). 26 (15.4%) had bypass or balloon angioplasty at a mean average of 29 months into the study. One post surgical death (3.9% of the bypass angioplasty patients) was reported.

Patients in these studies were not dying at alarming rates as would be expected of “walking time bombs”. The statistical data reflects that these patients did relatively well, regarding survival, without having the recommended surgical procedures. Based on survival rates of previously published coronary bypass trials, surgical intervention does not generally improve overall survival. Recent studies comparing bypass surgery and balloon angioplasty have found similar results for the balloon procedure:

(40) Emory Angioplasty versus Surgery Trial (East), “A RANDOMIZED TRIAL COMPARING ANGIOPLASTY WITH CORONARY BYPASS SURGERY”, New England Journal of Medicine 1994; 331; 16: 1044-50.

392 patients with multi-vessel coronary disease were selected for a 3 year post intervention study involving one group of 194 receiving surgical bypass and another group of 198 receiving balloon angioplasty. 6.2% of the bypass and 7.1% of the balloon group died.

(41) German Angioplasty Bypass Surgery Investigation, “A RANDOMIZED STUDY OF CORONARY ANGIOPLASTY COMPARED WITH BYPASS SURGERY IN PATIENTS WITH SYMPTOMATIC MULTI VESSEL CORONARY DISEASE”, New England Journal of Medicine 1994; 331: 1037-43.

337 symptomatic patients with 2 or more diseased coronary vessels were divided into two groups; one receiving surgical bypass involving 161 patients and the other involving 176 patients receiving balloon angioplasty. The in-hospital mortality was reported to be 2.5% for the bypass group and 1.1% for the balloon group.

Incidentally, death was not the only complication reported in the bypass group. 8.1% had peri-operative heart attacks (myocardial infarction), 10.6% developed post operative pneumonia, 1.2% developed strokes and 0.6% developed blood clots in the lung (pulmonary embolus). The balloon group had 2.3% heart attacks. Both groups had other complications including the need for transfusions. 6% of the bypass group versus 49% of the balloon group were given further interventions of balloon angioplasty or surgical bypass. The median hospital stay was 19 days after bypass and 5 days after balloon angioplasty. One year following intervention, 25% of the bypass group and 29% of the angioplasty group were manifesting angina.

General life saving benefits of bypass and balloon intervention are disappointing particularly in light of the risks and costs. The immediacy of symptomatic relief is the forte of balloon and bypass procedures for non emergency coronary conditions.

Taking into account the excellent safety record of chelation, deferring surgery to have chelation is not statistically hazardous for the overwhelming majority of stable patients. On the contrary, having chelation may improve the condition of patients allowing surgical intervention to be better tolerated if not totally avoided. Unbiased studies comparing the benefits of chelation versus bypass and balloon angioplasty are warranted. Comparison of costs in terms of time, money and suffering is also warranted.

Often surgery is advised and ill-advised based on anatomical blockage as seen on angiogram without appropriate regard to how the heart has adapted or is functioning. The body compensates for blockage by creating more blood flow to affected areas through alternative blood vessels (natural bypass). Patients have been known to function remarkably well despite complete blockage of arteries, where compensating circulation to the affected areas is adequate. Unfortunately, the surgical cardiovascular industry in the United States is financially driven. The angiographers, cardiovascular surgeons, foundations, hospital interests, and other participants in the industry have been known to create or follow self-serving standards.

Invasive procedures of coronary angiography, balloon angioplasty, and bypass can be crippling and lethal. Although attempts to demonstrate general prolongation of life with such procedures have been disappointing, hundreds of thousands of these procedures are being performed annually with questionable necessity. Sales strategies are used to induce patient compliance including rhetoric such as “You are a walking time bomb. If surgery is not done immediately you will die.” Competing alternative methods are put down while self serving, unproven and disproved rationales are propagated. Such is, in part, the politics of medicine.

Both intervention (bypass and angioplasty) and chelation have their place. In addition to being used individually, both may be used together to take advantage of what each has to offer. The ideal rational choice involves maximizing benefit while minimizing harm based on factual information.

ACKNOWLEDGEMENTS

A special thanks is given to all the heralded and unheralded thinkers and doers who have persevered against the odds to bring chelation therapy the recognition it has today. Chelation therapy has been known to be valuable in treating disease including coronary artery disease (angina pectoris) since the 1950's.

(52) Clarke, N.E., "TREATMENT OF ANGINA PECTORIS WITH DISODIUM ETHYLENE DIAMINE TETRAACETIC ACID," The American Journal of Medicine Sciences 1956; 232: 654-66.

Of 20 patients with angina pectoris receiving an average of 35 infusions, 19 obtained "unusual symptomatic relief". Abnormal electrocardiograms reverted to normal patterns in some. One patient died of uncertain causes several days after the 15th infusion.

Despite four decades of favorable clinical reports, resistance to general acceptance of chelation still persists. Medical political battles are still fought. The medical profession traditionally has been slow to change.
For example, I. Semmelweis, an Austrian doctor, in the mid 19th century introduced the practice of cleansing before delivering babies. As a result, many of his patients were spared morbidity and death associated with childbirth fever. Dr. Semmelweis published results of his

childbirth fever. Dr. Semmelweis published results of his years of work in 1861 only to be maligned and ostracized by his colleagues. The medical profession did not understand the concept of infection at the time. Childbirth fever was due to infection introduced by contaminated hands of the doctors. Dr. Semmelweis died after a mental breakdown for his trouble in 1865. His reports were ignored by the medical profession as women continued to die needlessly following giving birth, literally by the uncleansed hands of their doctors. Two years later J. Lister, a Scottish doctor, introduced antiseptic cleansing techniques for the practice of surgery. After reporting dramatic reductions in post surgical complications, Dr. Lister persevered through vicious attacks by outraged surgeons of the day.

Pasture's germ theory emerged providing acceptable rationale for the medical profession to embrace Dr Lister The inertia of progress in organized medicine was difficult to overcome then as it is today. Whether or not the profession refused to acknowledge it was harming patients needlessly, refused to accept new methods as superior to its own or refused to give credence to reports not explained by rationale it accepted are matters of debate. Nevertheless, through the deeds and sacrifices of Dr. Semmelweis, Dr. Lister and their heroic followers, the use of antiseptic cleansing prevailed to become the standard in obstetrical and surgical practice today.

Coincidentally, chelation therapy also involves a form of cleansing. Names of many heroes in the field of chelation and descriptions of their contributions are available through the American College for Advancement in Medicine. A special apology is offered to those heroes whose ideas have been presented in this book without deserved and proper acknowledgement.

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Dr. Dayton is board certified in chelation therapy and in family medicine. Dr. Dayton is an internationally known lecturer on chelation therapy and teacher of family medicine for physicians, medical students, and the public. He has incorporated chelation therapy in his medical practice for approximately 19 years. Dr. Dayton holds BS (research), D.O., and M.D. degrees. He maintains a private medical practice as a licensed osteopathic physician and surgeon* in southeast Florida.

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***What is an osteopathic physician and surgeon?**

An osteopathic physician and surgeon (doctor of osteopathy) has basic medical training, licensure, and technology equivalent to that of the medical physician and surgeon (doctor of medicine) throughout the United States. The doctor of osteopathy (abbreviated D.O.) may specialize in cardiology, vascular surgery, family practice, etc. as does the medical doctor (abbreviated M.D.). The

D.O. is indoctrinated with a more holistic medical philosophy than the M.D. counterpart, with emphasis placed on improving health as well as addressing disease. In addition to conventional medical teaching, the D.O. receives manual training in caring for the body and frame (bones, articulations, supporting tissues) similar in some respects to chiropractic training. (Outside the United States, osteopathic training, similar to traditional chiropractic, does not involve drugs nor surgery.)

Clinically many D.O.s choose to practice in a similar fashion as do most M.D.s. Conversely, increasing numbers of M.D.s., such as those who use chelation, choose to practice holistically. Depending upon individual orientation and training, M.D.s, such as those who administer EDTA chelation, may be more advanced holistically than many D.O.s.

Historically, an M.D. (A.T. Still) in the later 19th century dissatisfied with the harmful and ineffective medical practices of the day founded a more holistically oriented school of medicine and surgery. Unique manual therapies involving articulations of the bones were developed by the school to relieve human suffering. To distinguish the new school of medicine from all others the name osteopathy was chosen. The word osteopathy is derived from the Greek "osteo", meaning bone and "pathos" meaning suffering. Approximately one out of twenty doctors, fully licensed to practice conventional medicine in the United States today, bears the distinctive title, osteopathic physician and surgeon.

Glossary of Terms:

ANGINA (PECTORIS) pain due to insufficient blood flow to the heart muscle

ANGIOGRAPHIC illustrating blood vessels (arteries)

ANGIOPLASTY a kind of invasive non-surgical repair artery blockage repair

ANKLE/BRACHIAL INDEX a calculation comparing blood pressure in the wrist and ankle for hardening of arteries

ARTERIOSCLEROSIS a general term for evaluation of hardening of the arteries

ATHEROSCLEROSIS a form of hardening of the arteries involving a plaque formation on inner arterial walls

BYPASS surgical rerouting of blood around obstructions

CAROTID artery carrying blood to the brain through the neck

CHELATION see page 2

CLAUDICATION a halt or lameness in a persons walk (as in lower leg cramping due to poor circulation)

EDTA see page 2

ENARTERECTOMY a form of vascular surgery for restoration of blood flow

FVC and FEV1 expelled air volume measurements from lungs

HIGH DENSITY LIPOPROTEIN complex of lipids and proteins that transport cholesterol in the blood, thought to be protective of formation of artherosclerosis

HOMEOSTATIC a state of being in harmony

INTRAVENOUS see page 2

ISCHEMIA insufficient or absence of blood supply

LUMEN (ARTERIAL) space within the artery where the blood flows

MAGNESIUM EDTA magnesium bound with EDTA

OBSTRUCTION see stenosis

OCCLUSIVE see stenosis

OCULOCERBROVACULOMETRIC measurement of blood vessels in the brain through eye pressure

OSTEOPATHIC see pages 102-103

SODIUM EDTA sodium bound with EDTA

STENOSIS (ARTERIAL) narrowing of passageway in arteries due to blocking, occlusion, or clogging

APPENDIX

1999

Published Clinical Studies Supporting Chelation since 1995

(1)Ali, M. et al, "IMPROVED MYOCARDIAL PERFUSION IN PATIENTS WITH ADVANCED ISCHEMIC HEART DISEASE WITH AN INTEGRATIVE MANAGEMENT PROGRAM", Journal of Integrative Medicine 1997;
1; Winter:115-145.

Of 26 patients with advanced ischemic heart disease, 91% had a reduction in symptoms and/or use of drug after 20 or more intravenous EDTA chelation therapeutic infusions integrated with nutritional and life style changes. Of 6 who had before and after therapy thallium stress tests 5 (83%) demonstrated improvement in blood perfusion of the heart muscle.

Published Clinical Studies Refuting Chelation

Since 1995 (through 1999)

(0) none

Additional Books Supporting Chelation Published

Since 1995 **(through 1999)**

Bypassing Bypass The New Technique of Chelation
2nd Edition E.M. Cranton

Chelation Therapy and Your Health Michael
Janson

Everything You Should Know About Chelation Therapy
M Walker, H Shaw

I Rejected Bypass for a Better Life
R.A. Gegan

Questions from the Heart
T. Chappel

The Nineties Healthy Body Book
G. Null

The Scientific Basis of EDTA Chelation Therapy
B.W. Halstead, T.C. Rosema

Follow-up Study on Life Prolongation via Coronary Bypass Surgery

(Surgical Failure)

Perluzzi P., Kamina A. TWENTY-TWO-YEAR FOLLOW UP IN THE VA COOPERATIVE STUDY OF CORONARY ARTERY BYPASS SURGERY FOR STABLE ANGINA, American Journal of Cardiology (JUNE 15) 1998; 81:1393-9

Of 686 coronary patients with stable angina two groups were randomly chosen. One group was treated with coronary bypass surgery. The other group was treated medically. Twenty-two years later, 20% of the bypass surgery group were still alive compared to 25% of the medically treated group. The patients who had received bypass surgery had statistically a 25% lesser chance of living at least twenty-two years than those who did not.

Present Status of Chelation Therapy:

Having stood the test of time, despite over four decades of controversy, Chelation is gaining more respect within mainstream medicine and growth and popularity. Chelation is also gaining favor as an anti aging strategy to prevent the premature expression of maladies and diseases associated with advancing years.

The Case for Intravenous EDTA

CHELATION THERAPY

About the author
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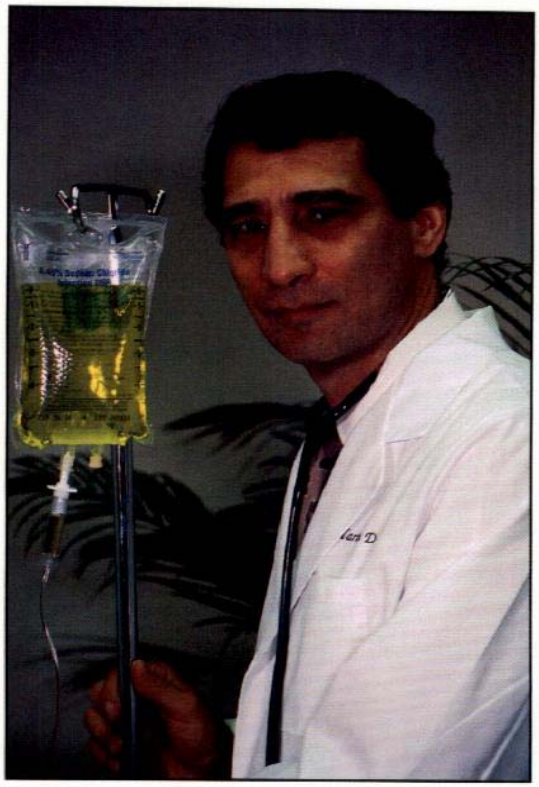

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CHELATION THERAPY

By Dr. Martin Dayton

Thank you for reading the Case for EDTA Chelation Therapy.

All what was written in 1995 and in 1999 holds true today.

A large $30, 000, 000 governmental study is underway since 2003

To determine definitively how effective EDTA Chelation is

for patients who have coronary artery disease and a history of at

least one heart attack. The study is called TACT,

the Trial to Assess Chelation Therapy. The next rewrite of the

book will include the findings of this study among discussions

regarding various issues of toxic metals and how to rid ourselves of

them health. It will include the discussion on the relative merits of

various strategies and claims that vendors and health providers

make.

Martin Dayton