A short "novel" of hope for those ready
to enjoy
life long health …

MILLIONS ARE STILL DYING WHILE *LIFE LONG HEALTH* IS WITHIN REACH

PART ONE: THE LIGHT SHINES BRIGHTLY

The trenches were slimy and bloody muddy. They stank with the mix of old blood, rotting mud, and gunpowder. The air hung clammy, heavy with the stench of death – sudden and agonizing, from bullets, artillery shells, mustard gas. Shouting, cries of anguish and pain, the sharp rat-a-tat-tat and ricocheting bullets pierced the darkness and the daylight, making sleep impossible. And for those still unharmed, always … the threat of dying. Or worse … suffering beyond imagination.

Such was the Allied soldier's life in the hundreds of miles of slimy trenches that wormed across the French countryside as World War I stalled in July 1917. Opposing armies were often just dozens of yards apart, so close that they could hear each other's agonizing cries. You can imagine most everything described … except for one. You cannot fathom the painful suffering and death that threatened day after day, night after night, from the terrible yellow-brown clouds of acrid-smelling mustard gas randomly fired by the Germans. This most destructive weapon of war attacked every one indiscriminately and there was no defense other than prevention – covering all exposed skin and donning gas masks that might be too late or might be ineffective after repeated uses. And yes, the British even used it against the *Germans* when they captured a stockpile of aerosol canisters in November 1917, just days before the end of hostilities in the War to End All Wars.

Victims might not have felt anything at first, so they could unknowingly receive a massive exposure. Seconds to minutes to hours later, their skin and eyes burned and dissolved, their lungs bled, and they endured this untreatable torture for days to weeks before slipping into the relief of death. Those who lived could suffer disfiguring scars and life-long disabilities. The sticky "liquid" settled onto clothes, equipment, and structures and evaporated into a gas when later becoming

warm, so the blistering chemical could cause suffering days later, even to soldiers who never saw the gas cloud or who weren't even outside of their confined bunkers.

As World War II began, the specter of this monster gas again striking their young soldiers hung like a pall in the halls of the British War Ministry as World War II began. Was their fear unfounded? A Geneva treaty in 1926 had banned the use of toxic gases in warfare. But the Italians used poison gas in Ethiopia in 1935 and the Japanese used gas in China in the late 1930s. Later revelations showed that the Germans had fielded an advanced version of mustard gas to their armies in 1937. So one of the major research efforts in the early 1940s was to find something, *anything*, that could counteract such a poison and salvage the health and lives of exposed soldiers.

In the crowded, dingy laboratories of Oxford University in southeastern England, professors frantically toiled long hours through the 70 months of WW II. Scribbling on blackboards and in bulging notebooks, Dr. R. A. Peters led his group of harried biochemists through the maze of strange chemical reactions. They were scrambling to find an antidote to "Lewisite," an arsenic-based chemical that closely resembles mustard gas. Despite their intensive efforts, it was only at the *end* of the conflict that they finally perfected "BAL," the abbreviation for its longer name, "***B***ritish ***A***nti-***L***ewisite."[1] The compound (2,3-dimercapto-propanol) is called "*Dimercaprol*." Thus, 1945 is hailed as the year that ended the world war that killed over 70 million people, mostly civilians, *and* the one in which "chelation therapy" was first proposed as a useful and powerful medical treatment.[2,3,4]

The Metal in the Middle … Chelation

The year was 1890, when a French-German chemist, Alfred Werner, received his doctorate in the stunning city of Zürich, Switzerland. The Eiffel Tower, the breathtaking landmark in Paris, France, was less than one year old when he first gazed on it in amazement, as a postdoctoral student in chemistry.

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[1] Peters RA, Stocken LA and Thompson RHS: British Anti-Lewisite. *Nature* 156(10):616-619, 1945.

[2] Eagle H: The systemic treatment of arsenic poisoning with BAL (2,3-dimercapto-propanol). *American Journal of Syphilis, Gonorrhea, and Venereal Diseases* 27:114-21, 1946.

[3] Eagle H and Magnuson HJ. The systemic treatment of 227 cases of arsenic poisoning (encephalitis, dermatitis, blood dyscrasias, jaundice, fever) with 2,3-dimercaptopropanol (BAL). *American Journal of Syphilis, Gonorrhea, and Venereal Diseases* 30(5):420-41, 1946.

[4] Supplement to the *Journal of Pharmacology and Experimental Therapeutics*. Baltimore, Maryland: The William and Wilkins Company 87(4):entire publication, 1946.

The 1890s were the *Golden Age of Bicycles*, with cycles being a popular way to get around this most prominent metropolitan and cultural center in all of Europe. Armand Peugeot had just begun producing his first (noisy!) automobiles, so Werner likely dodged a few of these novel horseless carriages while walking across the French boulevards. He was fascinated by an unexplained way in which cobalt appeared to "cuddle" into an ammonia/chloride molecule. In 1893, after his return to teach in Zurich, he proposed a theory of "variable valence" (chemical charges and reactivity) and "coordination" or "complexion" (forming complexes) chemistry, explaining the loose bonding of a mineral that "nested" within a surrounding molecule.[5]

To put 1893 into context, just 10 years earlier the University of Texas at Austin had been founded. Soon, the *Lone Star Showdown* athletic rivalry began with Texas A&M University, which was founded in 1876. ("Hook 'em, Horns!" and "Gig 'em, Aggies!" are famous hand signals and battle-cries in Texas and parts *everywhere* as alumni gather to perpetuate the passionate competition.) In 1903, two Ohio bicycle designers – Orville and Wilbur Wright – made the earth-shattering controlled powered flight 10 years later, at Kitty Hawk, North Carolina. (Some people still secretly think that the Wright brothers were Aggie engineering graduates.)

Professor Werner insisted that the "coordination" concept came to him in a dream. A dream at *2* in the morning! An *important* dream? Important enough to win the 1913 Nobel Prize, the *first* awarded for inorganic chemistry. While we think of the 20th century as so advanced, recall that 1913 was only the *50th* anniversary of the carnage during the Battle of Gettysburg in the American Civil War. (In 4 days of engagement, some 8,000 Americans died [Union and Confederate], 27,000 were wounded, another 11,000 captured or missing.) Werner's work was profound in ushering chemistry concepts into the 20th century; the next *in*organic chemist to be honored with a Nobel Prize was not until 1973.

The Prohibition of alcohol in the United States started in 1920, oddly at the beginning of social and societal upheaval known as "The Roaring Twenties." Rebellious teens and young adult "flappers," no longer coming to maturity under the dark clouds of war, partied the nights away dancing the Charleston – and sipping (gulping?) "bootleg" liquor in the speakeasies. Chemists Sir Gilbert T. Morgan and H. D. K. Drew, had more serious issues on their mind as they sat at their laboratory desks. Their attention focused on Werner's provocative ideas

[5] Morgan GT: Alfred Werner. *J Chem Soc* (London) 117:1639-1648

about minerals in molecular complexes. Seeking to clarify the concept, they coined the word "chelate."

> "The adjective chelate, derived from the great claw or *chele* (Greek) of the lobster or other crustaceans, is suggested for the caliperlike groups which function as two associating units and fasten to the central atom so as to produce heterocyclic rings."[6]

Confusing? Sort of. But this visualization of "heterocyclic rings" is critical to development of chelation therapy as a miraculous medical treatment. Benzene, for example, is a molecular ring that consists *only* of carbon atoms. A *hetero*cyclic ring is made of *different* atoms – such as carbon, nitrogen, oxygen, sulfur, and so on – which allow a line or string of atoms to bend around corners somewhat, ***to form the "nest" into which a metal ion can cuddle***. *BINGO! Chelation!*

The term "claw" merely means a "pincer" (such as on a crab or lobster or mud-bug), pinching or binding the metal in such a way to form one or more continuous rings by "holding together" with the *other* (different or "hetero") atoms in the molecule. It was exactly *this* understanding of the concept of chelation that motivated Peters and the other British biochemists to start the search for (and finally develop) BAL.

EDTA – The Tongue-Twister That Can Save Your Life

The idea of "binding" a metal ion found its first application in – of all places – the dyeing of clothing fabrics! As the resentful German nation marched from an unstable peace after WW I toward the dawn of WW II, the ambitious government knew that it would soon be isolated from a number of needed raw materials. One of them was citric acid, which was being imported in great quantities to make more uniformly smooth coloration in fabrics. When calcium is present in "hard water," it binds to certain dyes, leaving streaks in the finished cloth. Chemist F. Munz was ordered to pursue development of a compound to replace citric acid, considered an essential step for future independence of the textile industry.

Outside, he heard riotous celebrations as Adolf Hitler became Führer and Chancellor of Germany in 1934. Inside the cramped office and laboratory, he labored diligently on his assignment. That year, Munz's work led excitedly to synthesis of an entirely new compound, a "polyaminocarboxylic acid." He called it "*Trilon B*." In any chelation doctor's office, you'll know this now as "***EDTA***" –

[6] Morgan GT, Drew and Harry DK: CLXII. – Researches on residual affinity and co-ordination. Part II. Acetylacetones of selenium and tellurium. *J Chem Soc Trans* 117(2), 1920.

ethylenediaminetetraacetic acid (eth – ill – EEN' … dye – uh – MEAN' … TET' – ruh … ah – SEET' – ick … acid). That tongue-twister is the reason for this *chapter*, this *book*, and this miracle health-restoring and life-saving *treatment*!

Long days blurred into sleepless nights as Munz, studying at his lonely desk in 1934, recognized a striking similarity between the formulas for citric acid and nitrile-triacetic acid ("NTA," known since 1862, the same year that President Abraham Lincoln's Union troops were suffering crushing defeats early in the War Between the States). Indeed, NTA (known as "*Trilon A*") was even *more* effective than citric acid at binding and removing calcium from solution. Improving on that realization by devising a way to make EDTA was relatively easy. The hard part (which Munz *missed*) was seeing that this entirely new compound (based on Werner's prize-winning chelation theory) would bind toxic heavy metals as well. *That* discovery would have to wait another 18 years.

What's a bit puzzling about this delay is that S. S. Kety and T. V. Letnoff never extended their thinking on this very point after publishing their first studies on … the *treatment of lead poisoning with sodium citrate in 1941!*[7] Citric acid is so similar in structure … why was "*Trilon B*" (EDTA) *not* explored as a treatment of lead toxicity at that time? Who knows.

We enjoy modern medical miracles without much thought as to how *recently* many of these technologies were discovered, perfected, and placed into routine practice. Indeed, the middle and final thirds of the 20th century have been the most fruitful in all of history. One of the leading medical centers, the Johns Hopkins Hospital in Baltimore, Maryland, first opened its blood bank in 1939. Then-recent advances in separating and preserving red blood cells and plasma liquid were essential for the soon-to-come advances in heart and blood vessel surgery in the 1940s through 1960s. Lest we think of this as "ancient history," recall that one of the greatest movie actors of all time, Clark Gable, starred as "Rhett Butler" with Vivian Leigh in the 1939 epic film set during the Civil War, *Gone with the Wind*. Gable was one of few actors to play the lead in *three* films that won the Academy Award for Best Picture. You don't care much to hear about these sideline historical tidbits? Well, my answer to you is the most famous line from that movie … as Rhett Butler finally captures Scarlett O'Hara's love, he realizes that it is far too late to salvage the passion he once held for her – so he bids her farewell: "Frankly, my dear, I don't give a damn!"

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[7] Kety SS and Letnoff TV: Treatment of lead poisoning with sodium citrate. *Proc Soc Exp Biol Med* 46:476-477, 1941.

Research into these new polycarboxylic acid compounds was proceeding fast and furious in Germany, with the idea of purifying solutions used in various industrial processes. At the same time Munz was having his success, German-American chemist Frederick Berswerth and William Warren began studies in 1933 at Clark University in Massachusetts, just as Albert Einstein arrived in the United States as a refugee from Nazi Germany. Their procedure for making EDTA, which Berswerth called "*Versene*," was entirely novel and they filed for a patent in 1941, finally granted (No. 2,387,735) in 1945. That administrative delay (because the war focused attention on more urgent matters) might explain why clinical chelation research in humans was slow to start. Accomplished pilot and actor Jimmy Stewart won the Best Actor Academy Award in 1941 *and* enlisted in the Army Air Corps; he was commissioned in 1942 as a 2nd lieutenant. By mid-1943, he was piloting the B-24 Liberator on dozens of bombing missions over German-occupied Europe, earning the Distinguished Flying Cross and the Air Medal. Between the time of filing and granting of Berswerth's Versene patent, Stewart had risen in those *four* years from private to *colonel!* (Stewart continued with the Air Force Reserve, promoted in 1959 to brigadier general.)

From Mayonnaise to Medical Miracle

The year 1947 blossomed happily enough, with Americans still giddy in celebrating their military victory in WW II and getting down to the playful business of making a Baby Boom that would last for over a dozen years. Perhaps the most intriguing headline – and one heard around the world! – topped the *Roswell* [New Mexico] *Daily Record* on July 8, 1947: "**RAAF** [Roswell Army Air Field] **Captures Flying Saucer On Ranch in Roswell Region**," so claimed the intelligence office at the base. My father, then a 1st lieutenant and atomic bomber pilot, was a deputy in intelligence. He handled the actual alien "flying saucer" pieces on two occasions. On the first, I was only thirty feet away from these out-of-this-world fragments, just 3 months old. The 8th Air Force Headquarters quickly retracted the story, claiming that merely fragments of an advanced research weather balloon had been recovered. [For more *factual* details on The Roswell Fraud, contact my office.] A scant 3 months later, Army Air Corps Captain Charles ("Chuck") Yeager was the first man to pilot an *earthly* craft "supersonic," breaking the sound barrier in the experimental rocket plane Bell X-1, on October 14 (my Dad's 30th birthday).

A major historic event that gathered *no* headlines and created *no* sonic boom took place in 1947 in Washington, D. C.: Frederick Berswerth showed up at the U.

S. Food and Drug Administration (FDA) office to ask how to gain approval to use his new EDTA to help preserve foods such as mayonnaise. Some prepared food items "go rancid" (oxidize) fairly quickly, especially when opened and exposed to air or warmer temperatures. EDTA slows that process considerably, and Berswerth needed FDA approval as "non-toxic" to approach the food producers. The clerk was puzzled by several of his apparently unrelated, casual comments about treating illnesses. Berswerth's insistence that "Someday, this compound will cure atherosclerosis and vascular disease," was overheard by Peter Weiss, a part-time FDA employee who was also a pathology graduate student at Georgetown University. Almost immediately, Weiss shared this perspective with his supervising professor, Martin Rubin, Ph. D., who was studying treatments for heart rhythm disturbances.

A face-to-face meeting was hastily arranged between Berswerth and Rubin, a conversation that became a turning point in medical history. The medical school started an active research program into therapeutic metal-organic compounds, hoping to define a new treatment approach.[8] Berswerth Chemical Company, founded to manufacture and promote research into *Versene*, gave a grant to Georgetown to investigate the biological effects of EDTA. One of the earliest results of this partnership: the familiar "lavender-top tube," used for drawing blood to test in the laboratory![9] Rubin realized that binding calcium in the blood could keep a blood sample from forming a clot. Kept in its free-flowing (non-coagulated) liquid state in an easy-to-transport tube, patient blood could be taken to the laboratory and tested much more conveniently than *ever* before. The prospect of EDTA serving as an anti-coagulant in the body was tantalizing, but heparin-type medications have much greater clinical application.[10]

Various formulations of *Versene* (produced now by The DOW Chemical Company) continue to be indispensable in assorted industrial applications: cleaning products, detergents, soaps, metalworking (surface preparation, cleaning, and plating), oilfield processes (controlling plugging caused by iron precipitation during deep oil recovery; removing scale deposits on well casings and in boilers used to pump steam down-hole), all kinds of personal care products, sanitizing of food processing equipment, polymerization (chemical manufacturing such as plastics), pulp and paper bleaching and processing, removal and prevention of

[8] Early reports explored basic physiology, suggesting enticing applications in the future: Schroeder HA, Perry HM, Jr. Antihypertensive effects of metal binding agents. *J Lab Clin Med* 1955;46:416.

[9] Klapheke MA and Rubin M: Na2EDTA as an anticoagulant for routine laboratory procedures. *Bull Georgetown Univ Med Cent* 5(33), 1951.

[10] Proescher F: Anticoagulant properties of EDTA acid. *Proc Soc Exp Biol Med* 76: 619, 1951.

scale deposits on cleaning equipment surfaces, textile processing (especially dyeing), and water treatment hardness control. All of these uses relate to removal of metal ions from the solutions employed. Not surprisingly, *Versene* is used to help stabilize drug products to maintain potency, color, and flavor. Similarly, this original chelating agent continues to be used with edibles, since it can improve product quality, enhance consumer appeal, and extend shelf life for many foods and beverages.

Although British scientists in 1945 had pioneered the concept of chelation as a medical tool (by developing BAL for the removal of toxic heavy metals), they failed to exploit their advantage by exploring further possibilities. American professors and physicians stepped forward in the 1950s and created the treatment programs that we enjoy today. Consider how a joint research effort back then could have been much more robust. But … as Irish dramatist George Bernard Shaw observed, "England and America are two countries separated by a common language."

American children were mesemerized by the *Howdy Doody* show with Buffalo Bob and Clarabell the Clown as the NBC television program debuted in 1947 – the stand-in marionette ("Double Doody") is on permanent display in the Smithsonian. Dr. Martin Rubin was mesmerized by the prospect of a whole new approach to treatment and set about in 1947 to explore the behavior of this enticing EDTA molecule. He harnessed Georgetown University graduate students and technicians and they devoted long hours in the laboratory when he explained how their research could put them on the threshold of unimagined vistas in medicine. Their studies in mice, rats, and rabbits showed that EDTA could bind (chelate) calcium in the blood, leading to passing urine loaded with calcium-EDTA.[11] This critical realization forms the basis for *some* of the beneficial effects of EDTA chelation. This unique ability to remove calcium has been exploited to save hundreds of thousands of lives over the past 60 years![12,13] The chelation ideas that started (but remained largely unrecognized) with citric acid were finally coming together … but the BAL/*Dimercaprol* story that started with arsenic still had some loose ends with regard to other toxic metals.

A Chemical Shell Game – Switching Metals

[11] Spencer H, Vankinscott V, Lewin I, and Laszlo D: Removal of calcium in man by ethylenediamine tetra-acetic acid. A metabolic study. *J Clin Invest* 31: 1023, 1952.

[12] Popovici A, Geschickter CF, Reinovsky A and Rubin M: Experimental control of serum calcium levels in vivo. *Proc Soc Exper Biol & Med* 74:415-417, 1950.

[13] Rubin M: Chelating agents in the study of calcium metabolism. *Josiah Macy Foundation* p355-368, 1953.

Professor Alfred Martell, a Ph. D. chemist at Clark University, had been hired by Berswerth to help focus research efforts into the most rewarding uses for EDTA. He suggested to Rubin that magnesium-EDTA could be infused into the vein where it would release the magnesium. This would allow calcium from blood plasma to combine with the compound, forming calcium-EDTA that would be expelled through the urine. This idea tantalizingly opened Dr. Rubin's eyes to a method for treating heart rhythm disturbances, since magnesium helps to stabilize heart function while also lowering high blood pressure. When blood calcium is lowered as well, the effects of added magnesium are dramatically enhanced.[14] These observations pre-date "calcium channel blockers," drugs now commonly used for blood pressure and heart function, by *25 years!* EDTA was later found to be remarkably successful in controlling the rhythm dysfunctions caused by digitalis intoxication … an all-too-common occurrence *then* because of the primitive dosage forms available for treating congestive heart failure.

EDTA *was* effective for lowering blood pressure – but few doctors saw "in the vein" treatments as useful when compared to taking medications by mouth.[14] What caught the eye of Georgetown professors, though, was the exchange of one metal (lead) for another (calcium or magnesium), loosely bound to EDTA when floating freely in the blood. Test-tube studies showed that a solution of free lead mixed with a solution of calcium-EDTA showed rapid *switching* of the metals … liberating free calcium and producing bound lead-EDTA. Animal studies showed that lead-EDTA was rapidly dumped into the urine.

Jump in your mind's eye to the year 1952. Elizabeth II has just been crowned queen of England. The United States again thunders into the nuclear age by announcing development of the first hydrogen bomb. More quietly but more important to your future, the busy emergency room at Children's Hospital in Washington, D. C., is filled with anxious families crowd the lobby with suffering kids, cranky and crying, all wondering about the delay in seeing the doctor. Sirens wail as injured and dying patients are whisked into the university from surrounding cities. Study the desperate resignation in the eyes of young doctors and nurses as they admit *yet another* semi-conscious young toddler whose brain will cease learning, whose life will be permanently trashed by lead paint he swallowed so innocently while gnawing on the window sill. Imagine the hopelessness of

[14] Popovici A, Geschickter CF and Rubin M: The treatment of essential hypertension by magnesium chelate solution. *Bull Georgetown Univ Med Cent* 5:108-116, 1951.

knowing that yet another brain will cease learning in a child whose life will be forever altered.

Acute lead poisoning has always been a medical emergency: getting the lead out is essential – but ***no treatment exists***. In a cruel joke of nature, there is ***no*** chance for recovery of a robust and fruitful life. By the time the child arrives in the emergency room, the outcome in later years is already a foregone conclusion, *against* the child and the doctors. Merely keeping each child alive is the absolute best they can offer.

Admitting orders are written as the nursing station radio drones on with the latest news of what evolves into the Eisenhower and Stevenson presidential campaign. The chief resident half-heartedly calls the attending pediatrician, S. P. Bessman, M.D., to review their plans for his care, since not much can be done. But *this* time, possibly, *everything* could be *different*. Bessman pauses … then calls his friend Rubin – "Can your new compound be safely used in a child, to remove lead?" Dr. Rubin hesitates then replies, "Well, the animals survived quite well, and we have nothing else to offer … try mixing it this way and giving it slowly into the vein." Dr. Bessman swallows hard, reflecting on the unknown prospects that this urgently needed "experiment" might cause more harm and provide no help. "But really," he concludes, "really, what *is* there to lose?"

Bessman calculates what he hopes will be the correct dosage based on the child's body weight, then orders an IV containing EDTA to be compounded and started – and he patiently stands by, holding his breath and praying that his treatment will not damage this innocent child even more. Colorless medication flows in – drop, drop, drop, drop. Pale yellow urine flows out into the collecting bag. Rubin's research lab tests confirm the hoped-for result: urine *loaded* with lead. Finally, the toddler's eyelids flutter, then open. His mother reassuringly squeezes the child's tiny hands as her tears spill forth uncontrollably. Doctors and nurses can hardly believe what they are witnessing.[15,16,17,18] The *true* dawn of chelation therapy as a treasured medical treatment has arrived – but the miracle was *not* yet fully recognized in the minds of the doctors.

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[15] Bessman SP, Ried H and Rubin M: Treatment of lead encephalopathy with calcium disodium versenate. *Medical Annals, District of Columbia* 21:312-315, 1952.

[16] Rubin M, Gignac S, Bessman SP and Belknap E: Enhancement of lead excretion in humans by Na2CaEDTA (Versenate). *Science* 117:659-660, 1953.

[17] Bessman SP, Rubin M and Leikin S: The treatment of lead encephalopathy—a method for the removal of lead in the acute stage. *Pediatrics* 14:201-208, 1954.

[18] Foreman H, Hardy HL, Shipman TL, Belknap EL: Use of ethylenediaminetetraacetate in cases of lead intoxication. *AMA Arch Indust Hyg and Occup Med* 7:148-151, 1953.

The Dawn of a New Age: Restore Survival, Reduce Suffering

A cautious skepticism had developed during the "snake oil" era of the late 1800s, one that keeps physicians from rushing to embrace risky treatments with *false* claims of cure and thereby helps to keep their patients safe. But that hesitancy prevents doctors from easily understanding the significance of truly new discoveries. When Rubin and Bessman presented their report of this child's startling recovery at hospital grand rounds, medical colleagues became openly hostile. As Rubin noted in private communication 40 years later,[19] "Since that time, calcium EDTA has been used to treat lead poisoning throughout the world. I well remember my presentation of our first case to a distinguished group of lead poisoning experts. The first question and comment was: 'Since it is *not possible to remove lead* from the body once it enters, are you *sure* your analytical data are correct?'"

Thankfully Dr. Rubin's perspectives were documented and (somewhat grudgingly?) accepted, and clinical research efforts mushroomed. Studies were launched to explore the ways in which this new chelation tool might be used to help patients suffering with brain damage from lead toxicity. At the Johns Hopkins School of Medicine in Baltimore, Maryland, J. Julian Chisolm, Jr., M. D., at, began a lifelong career (now spanning over 50 years) of studying chelation compounds in the treatment of acute as well as long-standing lead intoxication.[20]

Research programs also looked at removing radioactive chemicals – certainly of interest to the government after deployment of the atomic bomb in 1945 and development of the hydrogen bomb. **As almost an afterthought *and* as a hint of what progress was soon to come, lowering of cholesterol in rabbits by EDTA chelation was reported as early as *1953*.**[21] As cholesterol patterns drew more research attention, exhaustive details were discovered regarding EDTA and its effects when given orally and in-the-vein.[22,23] When EDTA was combined with certain *sodium* salts, it was found to be easier to administer in the vein. The new

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[19] Rubin M: Private communication with Trowbridge JP (Interview). The history of chelation, 1994.
[20] Chisolm Jr JJ and Harrison HE: The treatment of acute lead encephalopathy in children. *Pediatrics* 19:2-20, 1957.
[21] Boyle AJ, Uhl HSM, and Brown HH: Effect of ethylenediamine tetraacetic acid on cholesterol metabolism in rabbits. *Am J Clin Path* 23:801, 1953.
[22] Curran CL: Metal chelating agents and hepatic cholesterol synthesis. *Proc Soc Exper Biol & Med* 88: 101, 1955.
[23] Rosenman RH and Smith MK: The Effect of Certain Chelating Substances (EDTA) Upon Cholesterol Metabolism in the Rat. *J Clin Invest* 35(1):11-19, 1956.

compound, called "*Endrate*," was patented by Abbott Laboratories and used in most animal and human studies and in later treatment programs.

The year is 1952, and an impressive strategic heavy bomber – the B-52 – flies for the first time. The design is ideal for its mission: squadrons still fly missions today and the aircraft is scheduled for retirement *after 2040*. In the hushed, dimly-lit hallways of Detroit's Providence Hospital, a drug ideal for *its* mission – EDTA – was about to be launched into standard medical practice, where it is now used today *more than ever before*. Norman E. Clarke, Sr., M.D., made his daily rounds as a cardiologist. Patients were chuckling over the latest *Peanuts* comic strip, introduced by cartoonist Charles Schulz in 1950, especially entertained by the "thought balloons" of America's favorite Beagle, *Snoopy*, as he "piloted" his "Sopwith Camel" doghouse. After attending to inpatient needs, Clarke had little time for humorous diversions and instead put forth an honest effort to learn what other doctors were finding in research centers and laboratories.

Books and journals, charts and papers were piled high on Clarke's desk, as well as stacks of papers and more books and journals on the side shelves and even on the floor – images of a busy doctor's private office that are all too often true, even today. Looking forward to reading after a long day in the clinic or operating room is a life-long struggle, but that's the only way to stay informed of new treatments and tests. As the "company doc" for several manufacturing firms in Detroit, he too was caught up by the frenzy to produce automobiles for the hungry civilian market after WW II. All too many of Clarke's patients had been overly exposed by the lead plates they inserted by hand into battery cases for new cars and trucks. "Plumbism," the medical name for their age-old toxic metal disease, causes disability and distress in young and old alike – all that matters is how much lead they had unknowingly absorbed, and their wellbeing is challenged every bit as much as sweet toddlers who had gnawed on lead-painted windowsills.

Clarke read, with more than a passing interest, the 1952 article that Rubin and Bessman had published documenting their outstanding success in removing lead from the acutely-poisoned toddler. Putting down the small medical journal, Clarke reflected and silently asked himself, "Could this chelation process," he paused, "help *my* many patients suffering with lead exposure?" Only one way to know, he felt – *try it.*

Most physicians were respected and cherished "GPs," "general doctors," in the early years of the 20th century, still carrying their black leather "doctor bag" and often making house calls, many still by horse-and-buggy. Just as our scientific

medical understanding was exploding, Dr. Clarke was entering private practice in 1926, the year that Elizabeth, the future queen of England, was born. He campaigned tirelessly to introduce the "new" field of cardiology to various Detroit hospitals. What is *now* taken for granted in every hospital and ambulance, the EKG (or ECG, "electrocardiogram"), was a fascinating new tool to probe more deeply at the mysterious function of the heart. Developed in 1903 in the Netherlands by Dr. Willem Einthoven (who won the Nobel Prize in Medicine in 1924 for his work), the EKG had been met with skepticism and reluctant implementation by American physicians.

A long respected "heart specialist" in Michigan, Clarke found himself befuddled and shocked by the unexpected results of his EDTA trial. Comments were soon offered by his chelated and recovering plumbism patients in late 1952: "Doc, I hardly ever use the nitroglycerin anymore … I rarely get chest pains." "I have much more energy, I don't breathe as hard, my heart doesn't pound, even when climbing steps." What on earth was this new EDTA chelation doing for – *or to!* – his extremely ill patients?

Imagine the very *first* chelation therapy patients – almost 60 years ago – excitedly thanking their surprised and curious Dr. Clarke as their ashen face pallor of *lead* poisoning changed to pink again. Clarke could measure their various clinical changes with in-the-vein treatments with EDTA, and he was elated at resolving their *lead*-poisoned condition. What he did *not* expect were these clearly dramatic improvements also appearing with *heart* function in his recovering *lead-toxic* patients.

Heart attacks had been so *rare* at the *beginning* of the 20th century that clinical pioneer Sir William Osler would present surviving patients to grand rounds at the Johns Hopkins Medical School in Baltimore, Maryland. By 1950, they had become the *number one killer* in America. Other than "supportive care" ("water 'em and watch 'em") and digitalis for heart failure and odd rhythms, "modern" medicine barely 60 years ago had very little to offer heart attack victims beyond oxygen, a kind hand, a reassuring word, a quiet bed, and hope and prayer.

From 1952 through 1955, Dr. Clarke – who had long been director of cardiology *and* electro-cardiology *and* medical research at Providence Hospital – methodically evaluated dozens of his *heart* disease patients. He had witnessed the startling results from his plumbism patients who *also* had disabling heart disease. Clarke's work began to take on more of a wish-come-true quality, much like the *Lassie* television show (that premiered in 1954 and ran for 19 years, winning 2

Emmys), where every week's desperate circumstances had a happy ending thanks to unexpected heroism of its collie dog star. Now more than ever, he impatiently wanted to evaluate those cardiac patients who did ***not*** have known lead toxicity as a problem but were instead dying *only* from diagnosed heart disease. He documented changes in their condition with the EKG and with measurements of their exercise performance. A true "Marcus Welby, M.D."/"hands-on"-type of doctor, Clarke was startled to find that his *heart* patients ***not*** suffering with obvious lead poisoning were showing results *never* seen before: *miraculous* and *measurable* improvements in their *heart* condition!

Unexpectedly Fixing Broken Hearts

The year 1955 will be remembered for when the enchantment of Disneyland first brought delight to the faces of young and old alike as they entered the Magic Kingdom in Anaheim, California. Dr. Jonas Salk, in his total passion to find an answer, changed forever the future wellbeing of hundreds of *millions* of people with introduction of the first polio vaccine. Important to *aging* Americans then and now, 1955 marks the true beginning of the chelation era for *heart and blood vessel diseases*. Clarke and his associates had spent long hours at their desks, pouring over squiggly lines of EKG tracings, measuring again and again, challenging and confirming their conclusions. Confident that he had found a safe, effective, and affordable treatment for the *number one killer* in America, Clarke published his early findings on the effectiveness of EDTA chelation therapy in treating hardened blockage of the arteries[24] and in successfully treating angina heart pains.[25]

An increasing number of Americans were suffering with angina "heart pains" on their way to life-threatening heart disease. Even President Eisenhower was struck by a heart attack in 1955. He was *mis*diagnosed by his personal White House physician as having a "gut" problem, delaying his departure for the hospital by 10 hours. The only true relief available then was from morphine, oxygen, and nitroglycerin, which had finally been approved by the Food and Drug Administration (FDA) for treating angina heart pains in 1938, even though it had *first* been successfully used in *1879!* Dr. Clarke described in 1956 the striking improvements he produced in 20 patients with documented angina. Chelation therapy was the very *first* treatment where chest pains showed *consistent* decrease

[24] Clarke NE, Clarke CN and Mosher RE: The "in vivo" dissolution of metastatic calcium, an approach to atherosclerosis. *Am J Med Sci* 229:142-149, 1955.

[25] Clarke NE, Clarke CN and Mosher RE: Treatment of angina pectoris with disodium ethylene diamine tetraacetic acid. *Am J Med Sci* 232:654-666, 1956.

or disappearance – along with, in some cases, disappearance of EKG abnormalities consistently present during the 2 years preceding treatment. He and his group gave patients over 4,000 infusions of high-dose EDTA, often close together, and noted few and mild side effects.[25] His initial reports were so complete and convincing that he is called "The Father of Chelation Therapy in America."

From these initial clinical studies, Clarke speculated that safe removal of "metastatic calcium" (calcium deposited *abnormally* in *soft* tissues such as blood vessel walls instead of just in hard bone and teeth) might also allow the body to later remove interrelated cholesterol deposits from artery walls. Dr. Clarke and his associates also speculated on the effects of EDTA on activating the parathyroid gland, which produces hormones that help release calcium from tissues. This tantalizing effect of EDTA is still being investigated and might be fundamental in recovering healthy function.[26,27] In an incidental comment, they described marked improvement of large kidney stones as documented on x-rays – some 30 *years* before the lithotripter stone-buster was available for these ***in***operable patients.

Soon-to-become-icon and heart-throb Elvis Presley broke into the United States music charts in 1956 with "*Heartbreak Hotel*" – it rose to No. 1 and was the bestselling single that year. (Who can forget "*Blue Suede Shoes*," "*Hound Dog*," and "*Don't Be Cruel*"? Elvis placed more songs in the Billboard Top 100 that year than any other artist since record charts began.) Clarke's brief papers made less of a "splash" but they were eagerly published by major peer-reviewed medical journals of the day … sparking a sudden, widespread interest in chelation. Research projects commenced around the country *and* around the world.[28,29] These efforts looked nothing like the "machines" that now turn out drug-company-sponsored "mega-studies" today. Often only 6 to 20 patients would be treated … however their results usually were so *strikingly positive* that larger numbers were *not* needed to document the stunning improvements from this simple in-the-vein treatment. Looking at more than just cardiovascular illnesses, Clarke's group also wondered whether EDTA chelation could help in other disorders. Indeed, they found that EDTA works surprisingly well to help reduce suffering with diseases of connective tissue, such as rheumatoid arthritis and lupus, seemingly unrelated to

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[26] Parfitt AM: Study of parathyroid function in man by EDTA. *J Clin Endocrin* 29:569, 1969.

[27] Chen IW, Park HM, King LR, et al.: Radioimmunoassay of parathyroid hormone: peripheral plasma immunoreactive parathyroid hormone response to ethylenediaminetetraacetate. *J Nucl Med* 15: 763, 1974.

[28] Aronov DM. First experience with the treatment of atherosclerosis patients with calcinosis of the arteries with trilon-B (disodium salt of EDTA). *Klin Med* (Russ Moscow) 1963;41:19-23.

[29] Friedel W, Schulz FH, Schoder L. Therapy of atherosclerosis through mucopolysaccarides and EDTA (ethylene diamine tetraacetic acid). (German) *Deutsch Gesundh* 1965;20:1566-1570.

heart and blood vessel problems, improvements that were repeatedly confirmed by later research groups.[30] "Systemic sclerosis" (hardening patterns, often throughout the skin, muscles, and other body tissues) was a challenging treatment problem, and physicians quickly looked at benefits available with EDTA chelation.[31,32,33] Important insights into degenerative disease changes *not* obviously related to calcium deposition were offered by dermatologists as early as 1957.[34]

The National Institutes of Health Spearheads Chelation Research

How easily our memory seems to slip into the low-lying fog of history. Little is known about Marvin J. Seven, M. D. In the late 1950s, this bright young physician was a rising research star with the expanding and increasingly prestigious National Institutes of Health (NIH), located near Washington D. C. After WW II, Americans were bright with hope that emerging advances in technology could solve many of the world's problems. The National Heart Institute of the NIH had been formed in 1948 by President Truman, just before his stunning upset victory over Republican challenger Thomas Dewey. Clarke's initial observations and the flood of research findings reported by other physicians excited Dr. Seven even more than the mistaken Chicago newspaper headline "DEWEY DEFEATS TRUMAN." When Seven read these early chelation reports, he realized how profoundly this new therapy could reverse heart disease, improving not only the health of the nation but even the *world* as well.

Flagrant consumerism for children and teen toys perhaps started in 1958: the Wham-O company sold (in America *alone!*) more than 100,***000,000*** Hula Hoops that year and the craze quickly spread to most other cultures, many holding national contests – including sprints and races up to 10k while "hooping." (Could Elvis' hip-slingin' "gyrations" have stimulated their popularity? Could "the hoop" have been responsible for Elvis' worldwide stardom?) The modern toy era began in earnest in 1959, with the wildly popular wasp-waisted *Barbie* fashion doll; *G.I. Joe* action figures stepped forward in 1964, no doubt to defend Barbie's right to

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[30] Boyle AJ, Clarke NE and Mosher RE, et alia: Chelation therapy in circulatory and other sclerosing diseases, such as scleroderma and rheumatoid arthritis. *Fed Proc* 20 (Part II Supp) 10:243-251, 1961.

[31] Klein R and Harris SB: Treatment of scleroderma, sclerodactylia and calcinosis by chelation (EDTA). *Amer J Med* 19:798, 1955.

[32] Birk RE and Rupe CE: Systemic sclerosis. *Henry Ford Hosp Med Bull* 10:523, 1962.

[33] Neldner KH, Winkelmann RK, and Perry HO: Scleroderma. An evaluation of treatment with disodium edetate. *Arch Derm* (Chicago) 80:305, 1962.

[34] Rukavina JG, Mendelson C, Price JM, et al.: Scleroderma (acrosclerosis). I. Treatment of three cases of the non-calcific variety by chelation (EDTA). *J Invest Derm* 29:273, 1957.

enjoy freedom and prosperity. The *end* of a different era came in 1959, with retirement of the last B-36 strategic heavy bomber from service in the United States Air Force. Nicknamed the "*Peacemaker*" and unique in having 6 rear-facing propellers and 4 jet pods, the B-36 never entered combat. Serving as the "long rifle" for the Strategic Air Command, this unrivaled intercontinental bomber gave assured nuclear delivery capability. This craft filled the gap between the limited-range WW II B-29 and deployment of the air-refueled limitless-range B-52, before intercontinental ballistic missiles emerged during the early years of the Cold War.

In an ideal world, chelation therapy *should* have become acknowledged *from **1959** forward* as ***the*** most advanced medical treatment, and it *could* have been later nicknamed the "*Healthmaker*." Envisioning a future of medicine far more helpful than that seen by many of his colleagues, Dr. Marvin Seven was quite busy right then, assembling the world's first conference on chelation. Hahnemann Medical College in Philadelphia, Pennsylvania, hosted the symposium in 1959. Leading scientists and physicians outlined what the future might hold in treating diseases that are worsened by our increasingly dangerous toxic-metal polluted environment. Seven's book, *Metal-Binding in Medicine,*[35] summarized the outcomes of that meeting, including his own studies on possible toxicities from excessively large doses of chelation. An astute research physician, he knew he had a tiger by the tail and quickly made plans for the next international conference, for September 1960.

The *Beach Boys*, "America's Band," slid into the rock-and-roll scene in 1961 … and went on to become the No. 1-selling American band of all time, with thirty-six Top 40 hits – who can forget "*409*," "*Little Deuce Coupe*," "*Surfer Girl*," "*Surfin' Safari*," or "*California Girls*"? PT-109 Navy hero Senator John Fitzgerald Kennedy had narrowly defeated Vice President Richard Nixon and was sworn in as 35th president that year (not even ***13*** *months* after *announcing* his candidacy!), and Americans enthusiastically looked forward to an inspiring future. So did Dr. Seven, as he eagerly eyed a career of promoting chelation and discovering more of its potential to help healing. Fate so often disrupts the plans for life. Dozens of millions have suffered and died needlessly … due to Seven's untimely death in an automobile accident that year.

How could ***one*** doctor's early demise affect millions? This dynamic young scientist at the prestigious National Institutes of Health was ***the*** leading physician

[35] Seven MJ with Johnson LA: *Metal-Binding Medicine: Proceedings of a Symposium*. Sponsored by Hahnemann Medical College and Hospital of Philadelphia. Philadelphia, Pennsylvania: JB Lippincott Company, 1960.

working tirelessly to get chelation therapy widely accepted in the medical community. *No one else stepped in* to fill his shoes, to advocate at the NIH for further research into the benefits seen with chelation. No further meetings were scheduled until a series of continuing international conferences were hosted in Prague, Czechoslovakia, beginning in the mid-1980s.

As you read *this* book and begin to understand this remarkable treatment, you might become shocked and angry that EDTA chelation therapy was so casually abandoned by some of the brightest medical minds in America. You have a right to be distressed. You will come to share the frustration felt so keenly by chelation specialists who have committed their lives to making this treatment available to everyone. The scientific evidence has *clearly* been at hand for over 50 years! Although Seven's second meeting was not released as a book, over 200 pages of the discussions were published in a 1961 supplement to the prestigious *Federation Proceedings*.[36] The *worst*, however, was *yet* to come.

PART TWO:
THE TROUBLED YEARS

Jump to another era … right *now*. The time is *today*. The economy is topsy-turvy. The whole future of American medicine is up for grabs. You, the reader, right here, right now, you are just learning about chelation therapy as a health-restoring and life-saving tool in the modern medical arsenal. Sitting in your easy chair or at your desk or perhaps lying in bed, you're growing more excited, hoping that you might have found what you've been searching for … ***your key to better health***. And, indeed, ***you have!*** To nurture your excitement, this history review does not spend time detailing the "negative reports" that have surfaced from time to time. Detractors over the years are the reason that you are learning about chelation from this *book* instead of from your doctors, from magazines, and from television programs on miracles in medicine.

False prophets of doom ("It doesn't work!" – "It will kill you!") have had blared out their frightful alerts for all too long. Wanting to appear "scientific," they always point to "this study or that" in trying to undermine the future (***your future!***) of this immensely successful treatment. You'll learn about research *errors* in their most highly touted studies. Rest assured that experienced experts have

[36] Proceedings of a Conference on Biological Aspects of Metal Binding. *Fed Proc* 20(Suppl 10), 1961.

received advanced training in chelation. They have been refining their protocols whenever *anyone* has reported actual or just possible "problems." Changes to this treatment method have been incorporated over the past almost 60 years, resulting in specialists having the most modern understanding of almost *any* medical approach in use.

Back to 1960: Ford Motor Company had enthusiastically dumped an extraordinary amount of money plus unlimited hopes and dreams to insure success, but Edsel sales were so dismal that the brand was discontinued after only 4 model years … a colossal failure by any standard. The unique vertical grill design led to the nickname "horse collar grill," described as "an Oldsmobile sucking a lemon." Equally astounding – but on the *flip* side, ***so successful*** that it looked much more like a miracle – were the glowing reports Dr. Clarke offered on his then *long-term* studies with chelation therapy in heart and blood vessel disease patients.[37,38] He patiently followed a series of 283 patients treated between 1956 and 1960. A startling *87 per cent* showed improvement with their blockage disease.

> "An accumulated experience with several hundred patients has demonstrated that the overall relief from the manifestations of occlusive vascular disease has been superior to that obtained with other methods. In occlusive vascular disease of the brain there has been uniform relief of vertigo, and the signs of senility, even when advanced, have been significantly relieved. ….. In summary, the treatment of atherosclerotic vascular complications with the chelating agent EDTA is supported by a large volume of information." (reference 24)

Clarke's results are all the more significant because research had not yet begun to clarify how best to use this new "tool." *None* of the patients had been given what is *now* considered "standard advice," namely to stop smoking and to change their eating habits. No other risk factor modifications ("lifestyle changes") were employed; they are routinely used today. Results were all the more remarkable because investigators had not yet learned that chelation removes essential minerals at the same time it is taking out toxic ones. *Replacement* of normal minerals is required to gain optimal improvement from the treatment. Clarke's outstanding results were obtained *despite* the most hampered conditions that were soon to change.

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[37] Clarke Sr NE, Clarke Jr NE and Mosher RE: Treatment of occlusive vascular disease with disodium ethylene diamine tetraacetic acid (EDTA). *Am J Med Sci* 239:732-744, 1960.

[38] Clarke Sr NE, Clarke Jr NE and Mosher RE: Atherosclerosis, occlusive vascular disease and EDTA. *Am J Cardiol* 6:233-236, 1960.

Chelation Therapy: *Remember the 90 Number*

Keep in mind *this* number as you read further: ***90***. In the *dozens* of series of patients that have been published, starting with Clarke's earliest reports and continuing through today, *about **90 per cent** of patients are thrilled* that they have chosen chelation. The significance of Dr. Seven's untimely death in 1961 cannot be underestimated: the National Institutes of Health (NIH) has *never again* enthusiastically embraced the prospect that chelation could be a major solution to the problems of heart and blood vessel (or even other) diseases. Acceptance by the NIH is a tremendous endorsement that *assures* the successful adoption of any treatment. Conversely, positive statements by individual physicians *not* at the NIH or another "major" medical center – even those with extensive clinical experience – often are casually dismissed and ignored unless the treatment has *already* been "accepted."

Now high school and college students, the first children from the post-WW II era, optimistically looked to the 1960s and beyond as *their* opportunity to change the world. Their quiet rebellion popularized acoustic folk and folk-rock music: supergroup Peter, Paul, and Mary ("*Puff the Magic Dragon,*" "*Where Have All the Flowers Gone?*," "*Leaving on a Jet Plane*"), *The Kingston Trio* ("*Tom Dooley*," over 3 million singles sold), superstar Bob Dylan ("*Blowin' in the Wind*," "*Like a Rolling Stone*," "*Lay Lady Lay*"), Simon and Garfunkel ("*Bridge Over Troubled Water*," "*Mrs. Robinson*," "*Parsley, Sage, Rosemary and Thyme*"), *The Mamas and the Papas (*"*California Dreamin'*," "*Monday, Monday*"), and later superstar John Denver ("*Colorado Rocky Mountain High," "Sunshine on My Shoulders*"). A similarly optimistic view about changing the world was held by private practitioner Ray Evers, M. D., who enthusiastically began to study chelation after Clarke's initial reports. This Louisiana "general practice" physician could hardly believe the consistency of success enjoyed by his patients with otherwise deadly disease:

> "From our experience in treating these approximately 3,000 patients with varying degrees of calcinosis (arteriosclerosis, atherosclerosis, etc.) [hardening of blood vessels], we will unequivocally state that it is our opinion that every patient with this disease in any part of the body should be given a therapeutic trial *before any type of vascular surgery is performed*."[39]

[39] H. Ray Evers, M. D., private communication from the 1960s, as published in the Reprints of Medical Literature on Chelation binder distributed in the 1980s by the American College of Advancement in Medicine (ACAM). Emphasis added.

Private practitioners weren't the only health professionals intrigued by this new chelation tool. R. G. Gould investigated metals and chelating agents as they related to atherosclerosis disease processes.[40] Dr. Evers' bold endorsement of chelation is all the more interesting because this was the era when advances in heart and blood vessel operations were being announced almost daily from major medical centers – and being enthusiastically embraced by American physicians and patients alike.

Medical technology was leaping forward in the post-world war era, leading to life-saving mobile surgery "MASH" units near the front lines during the Korean Conflict and stunning advances in surgery for heart diseases in children during the 1950s. The urgent need to devise a successful treatment for heart and blood vessel diseases in *adults* was underscored in 1960 by Drs. Lawrence E. Meltzer, M. E. Ural, and J. R. Kitchell, cardiologists at Presbyterian Hospital in Philadelphia, Pennsylvania, who studied chelation therapy for heart artery disease because …

> "… it is not *who* ***has*** atherosclerosis [fatty blockage and hardening of arteries] but *who has* ***more*** and who has less. The current management of this disease is hardly more than a program of watchful waiting and palliation."[41]

"Watchful waiting" was the life to which prisoners were condemned as well. Grammy-winner Johnny Cash, "The Man in Black," began entertaining imprisoned convicts in 1960. He later became, at 48, the youngest living inductee into the Country Music Hall of Fame ("*Folsom Prison Blues*," "*I Walk the Line*," "*Ring of Fire*," "*Jackson*"). His career was taking off just as chelation was being discovered.

The world might have enjoyed Johnny Cash's brilliant music for many more years into the 21st century had his doctors later considered this incredible chelation treatment instead of surgery. In 1988, fellow *Highwayman* Waylon Jennings was recovering from a heart attack. Jennings suggesting that Cash, visiting him in the hospital, have *his* heart checked out. Doctors then recommended "preventive" two-vessel heart bypass surgery. (As fabulously wealthy investor Warren Buffett has said, "Don't ask the barber if you need a haircut.") Jennings and Cash recovered from their bypasses in adjoining beds. Cash later claimed a "near-death experience" during the operation (not exactly the adventure you would want as an added "bonus"). His death a short 15 years later, in 2003, came from

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[40] Gould RG: Metals and chelating agents in relation to atherosclerosis. *Fed Proc* 20(Suppl 10):252, 1961.

[41] Meltzer LE, Ural ME, and Kitchell JR, in Seven MJ: *Metal-Binding in Medicine: The treatment of coronary artery disease with disodium EDTA*. Philadelphia, Pennsylvania: JB Lippincott Company, p132-136, 1960. Emphases added.

complications of diabetes. Virtually ***all*** of his medical conditions *could have been greatly improved* with chelation therapy, but apparently his doctors never suggested he try it.

As Johnny Cash was becoming a household favorite, the "S&H Green Stamps" rewards catalog was the largest publication in the United States during the 1960s. The company issued three times as many stamps as the Postal Service! In this era of conspicuous consumption but minimally-effective treatments for heart conditions, Meltzer had begun a hopeful study of 10 men with "angina pectoris" (heart chest pains). Several chelation treatments were given over 2 to 3 months – then reluctantly discontinued "because of disappointing results." Patients received what would be about 19 to 55 intravenous treatments and ***none*** had shown improvement that they had expected to see after reading Clarke's reports.

A surprise awaited the medical scientists who had long been resigned to "watchful waiting and palliation." As British sci-fi futurist Sir Arthur C. Clarke (later of *2001: A Space Odyssey* fame) observed in 1961: "Any sufficiently advanced technology is indistinguishable from magic."[42] Three months later, when reevaluating patients in order to write a conclusively *negative* report, outrageous eye-openers awaited Meltzer and his associates: *9 of 10 patients* had significant reductions in number and severity of anginal (chest pain) attacks, 5 of 9 showed EKG improvements, and *all* 3 patients with "cardiomegaly" (heart enlargement, heart failure) showed a reduction in heart size toward normal. Even better, *none* of their patients showed *any* significant toxicity problems. Their completely positive and enthusiastic summary – showing about ***90*** per cent improvements – was easily drawn from the patient data given in the body of their report. Their 1960 report conclusively showed that chelation works with the body's master plan, turning on natural healing processes, taking several months to produce results (a "healthy" delay, much like when knitting together a broken bone). Great news, right? *Not so!*

Meltzer's group was so impressed that they extended their research to establish that these *successful* treatments were also *safe* treatments. They found *no* serious side effects when the medication was given in much the same doses as are used today:

> "Two thousand consecutive infusions of disodium EDTA ... given to 81 subjects in a study ... of ... coronary artery disease during a 2-year

[42] Sir Arthur C. Clarke, "Profiles of The Future," Clarke's Third Law, 1961, from "The Quotations Page," available at < http://www.quotationspage.com/quote/776.html >, accessed August 18, 2009.

> period. ..... It is therefore our opinion that the drug can be used without danger over prolonged periods."[43]

They went on to describe how chelation might be used in the future, to reduce suffering and early death from heart disease.[44] Great news, right? *Not so!*

On February 20, 1962, Marine fighter pilot, test pilot, and "The Right Stuff" Mercury astronaut John Glenn circled the earth three times aboard the *Friendship 7* capsule, the first American to orbit the planet. (*Senator* Glenn later made the world's most famous encore with his second space flight 36 years later, a nine-day mission in 1998, on Space Shuttle *Discovery*, making him the oldest man to travel in space.) The (erroneous?) claim is made that Glenn recalled his first flight with the concern that, "As I hurtled through space, one thought kept crossing my mind: Every part of this capsule was supplied by the lowest bidder." "Lowest" matters in many ways: the popular slogan "Always Low Prices, Always" was adopted years after the very first Wal-Mart store opened in Rogers, Arkansas, in 1962, as Sam Walton started to rewrite the rules for retail sales.

In 2008, the Fortune Global 500 listed Wal-Mart Stores, Inc., (the largest private *employer* in the United States) as the *world's largest* public corporation by revenue. Startling findings were in store for chelation as well. In a pioneering move that *could* have been as significant for *your* future as space exploration or Wal-Mart savings, surgeons at Philadelphia, Pennsylvania's Hahnemann Medical College in 1962 rinsed human arteries (from autopsied patients) with EDTA chelation solution. Some four years *before* the general introduction of heart artery bypass surgery, they were excited to report that …

> "The use of EDTA in the ***treatment of atherosclerosis*** [hardened, blocking arteries] has been ***given clinical validity*** by the symptomatic improvement of such conditions as intermittent claudication [leg pains with walking] and angina pectoris [heart pains]. It is assumed that a significant part of the clinical improvement is due to the mobilization of calcium from the atherosclerotic vessels."[45]

The significance of their study to *your* wellbeing has been largely ignored. What really peaked their curiosity was the finding that, when they increased the amount of EDTA, the rinse solution contained even more calcium being removed from the

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[43] Meltzer LE, Kitchell JR, and Palmon FJ: The long term use, side effects, and toxicity of disodium ethylenediamine tetraacetic acid (EDTA). *Am J Med Sci* 242:51-57, 1961.

[44] Kitchell JR, Meltzer LE, and Seven MJ: Potential uses of chelation methods in the treatment of cardiovascular diseases. *Prog Cardiovasc Dis* 3:338-349, 1961.

[45] Wilder LW, DeJode LR, Milstein, SW, et al: Mobilization of atherosclerotic plaque calcium with EDTA utilizing the isolation-perfusion principle. *Surgery* 52(5):793-795, 1962. Emphasis added.

artery blockage and artery walls. Some have used this report to suggest simplistically that chelation works like a "*Roto-Rooter*," carving out the blockage calcium much the same way that flow in your household pipes can be opened by scraping inside; that's not quite so. Still, *surgeons* proving that *chelation* solutions could remove artery-blocking calcium must be great news, right? *Not so!*

When Good News Falls Victim to Bad Reporters

*What news could be "**bad**" when virtually all of the reports are "**great**"?* The year 1963 dealt a crushing blow to the hearts of Americans, many of whom remember exactly where they were on hearing the shattering news of the November 22nd assassination of President Kennedy. Many recall legendary news anchor Walter Cronkite breaking into a live broadcast of *As The World Turns*: "Here is a bulletin from CBS News. In Dallas, Texas, three shots were fired at President Kennedy's motorcade in downtown Dallas. The first reports say that President Kennedy has been seriously wounded by this shooting." Sadly, 1963 stands out in flashing neon lights in the history of chelation therapy as well, but for a *different kind* of assassination.

Ponder this: sitting at his desk, buried in stacks of charts and journals and papers, just what kind of mental gymnastics was Dr. Kitchell embracing? Had his pretzel-twists of thinking been prompted by comments shared with Drs. Palmon and Aytan over the water cooler? How was Meltzer coaxed into going along? Or … was *he* the one who put the bug in everyone *else's* ear? Any history will always be incomplete on their motivation, but everyone will agree that ***something very disturbing happened***: they authored a "reappraisal" article that *ignored* their own data and suddenly *torpedoed* chelation therapy as ***not*** at all effective!

Dr. Kitchell and colleagues had added 28 *more* patients to their original 10 – *all* in the study were extremely high-risk, severely ill, disabled individuals which *no* form of therapy had helped. Twenty-three of the added 28 patients had already suffered with heart attacks and were at high risk for other heart issues, even death. Of concern is that the research group did *not* use continuing "maintenance" treatments (that are routinely advised *now*) to extend the benefits that were noted early on. And again, no lifestyle changes were advised. Despite all this, when reevaluated after 18 months, 46 per cent of the added 28 patients *remained improved*. Sixty-four per cent of those added 28 patients had improved after *only 20* intravenous treatments; 46 per cent showed improved EKG (electrocardiogram) tracings.

All this sounds really good … so what's so *"bad"?* Their 1963 "reappraisal" article concluded *from these **positive** results* that ***none*** of the original improvements were "long-lasting." But their published data showed that (as *they* said) *"**only** 40 per cent" remained* clinically ***improved***. Wait – hadn't *they* said that these were seriously ill patients in which ***no*** other form of therapy had been successful? Then what's wrong with the very favorable result, where ***almost half*** of them continued to feel ***better***, even though no further chelation treatments had been offered to these critically ill patients? *Good question!*

Kitchell's group pointed out in 1963 that 12 of the 38 earlier-treated patients had died from heart disease (32 per cent of this *high*-risk and already suffering group). Apparently ignoring major shortcomings in their study – and certainly ignoring those (almost half of all) patients who *did* show continuing improvement – their conclusion leaves you scratching your head:

> "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."[46]

But … what about their *own* glowing praises from 1960 *and* 1961? And what about the significant number of desperately ill patients who showed *continuing* improvements with chelation therapy, even though that treatment protocol was nowhere near as advanced as it is now*? Good questions!*

Here's where this history lesson turns downright nasty. The *actual* data presented in the Kitchell and Meltzer articles were analyzed in two reviews, first published in 1982 and revisited in 1989, which offered this biting critique:

> "These results were very impressive and did not support the authors' negative conclusions. In retrospect, it appears that the authors' summary in the 're-appraisal article' was, to a great extent, responsible for the lack of subsequent funding for and cessation of clinical trials with EDTA chelation therapy for occlusive arterial disease."[47,48]

Chelation expert H. Richard Casdorph, M. D., put it even more directly in his 1995 book, *Toxic Metal Syndrome*, with Morton Walker, D. P. M. (podiatrist and

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[46] Kitchell JR, Palmon F Jr, Aytan N, et al: The treatment of coronary artery disease with disodium EDTA, a reappraisal. *Am J Card* 11:501-506, 1963. Emphases added.

[47] Cranton EM and Frackelton JP: Current status of EDTA chelation therapy in occlusive arterial disease. *J Adv Med* 2:107-119, 1989.

[48] Cranton EM and Frackelton JP: Current status of EDTA in the treatment of occlusive arterial disease. *J Holistic Med* 4:24-33, 1982.

medical author):

> "[They] have done a disservice to myriad patients who could have benefited from taking chelation therapy but were kept from the treatment by their own primary care physicians and specialists who believed the published, erroneous 'reappraisal' report."[49]

This ***one*** *(false!) negative* article from Kitchell and Meltzer began the still-continuing and still enthusiastic ***suppression*** of this marvelous medical *miracle*. How many millions over the past almost 50 years have been deprived of their one real chance for life long health?

Saving Life and Limb, *"The American Way"*

Dateline: Detroit. Dateline: Philadelphia. Dateline: Washington D. C. What do waving the Stars and Stripes at July 4th picnics, scarfing down hot dogs and hamburgers, and sucking down soda pops have to do with ETDA chelation *therapy*? The history of chelation seems loaded with *American* research reports; it truly was invented *here*, at least in terms of how it is now used to save lives and suffering from cardiovascular disease. The hot dogs, hamburgers, soda pops? At the halfway mark of the 20th century, the Food and Drug Administration (FDA) had acted favorably on Berswerth's 1947 application and approved the addition of EDTA to various foods, placing it in the "GRAS" classification ("Generally Regarded As Safe").

Check the label on your mayonnaise jar and other packaged foods. Since EDTA binds with many metals … it slows the rate at which fats and oils become rancid … stabilizes vitamin products … prevents oxidation spoiling and color changes of meat products/canned fruits and vegetables/potato products/fish/shellfish/scrambled eggs prepared from egg powder … prevents flavor changes in milk, preserves canned legumes (beans) … *and* promotes flavor retention and delays loss of carbonation in "soft drinks" (soda pops) … among other valuable biochemical actions. In soft drinks containing ascorbic acid and sodium benzoate, EDTA reduces conversion formation of benzene (a cancer-causing chemical) while the drinks are brought to market. In-the-vein EDTA is just about as *safe* as EDTA in foods, with attention to dosage being the key difference.

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[49] Casdorph HR and Walker M: *Toxic metal syndrome: how metal poisonings can affect your brain*. New York, New York: Avery, 1995. Page 267.

Incidentally, EDTA also slows the rate at which fats and oils *inside* your body become "rancid." Yes, *you* actually become "rank" in your tissues as you age and suffer from degeneration changes. In fact, these "rancid changes" *are* the aging and disease processes, steadily eroding your functions and your comfort. Every cell of your body has a wrapper of cholesterol – and every tiny "organelle" inside each cell is similarly wrapped – and every brain and nerve cell has multiple wrapping layers to serve as insulation such as found on electric cords – and triglycerides and "fat cells" serve as important energy storage depots. Protecting these functions is critical to preserving or even restoring better health. EDTA chelation lowers the levels of toxic heavy metals that cause rancid ("rusting," free radical injury) changes all throughout your body. *You* are much more important than *any* jar of mayonnaise!

Despite the Edsel marketing flop, a titillating surprise for Americans came from Ford Motor Company in April 1964, with unveiling – at the New York World's Fair – of the first of the 2+2 "pony car" class, the Mustang. The long-hood short-rear deck beauty took back to the stable the Tiffany Gold Medal for excellence in American design, the first automobile ever to win. This was Ford's most successful launch since the Model A, of which almost *5 million* had been produced from 1927 through 1931. The British "intelligence community" embraced the wildly popular Mustang sportster when featuring it in the James Bond/007 *Goldfinger* thriller in September 1964. "Beatlemania" – that's how many people remember the gate-crashing start of the British invasion into popular *music*. An astonishing *73 million* people first saw *The Beatles* in 1964 on the Ed Sullivan Show (giving real meaning to "a really big *shoe!*"). That year held *other* watershed events that weren't nearly as exciting but certainly more important for survival in your future … especially publication of a fascinating collection of reports from various scientists with regard to using chelation therapy to treat heart disease and rhythm disturbances, edited by Alfred Soffer, M.D.[50] He had probed heart responses to chelation for several years.[51,52] "*Who cares?*" you might say, just another excited doctor endorsing chelation. Sadly, this is another *"Not so!"* issue.

Despite having offered and edited these *many* positive reports, Dr. Soffer quietly "turned" and years later wrote a number of highly negative editorials. Oddly, he *never recanted* the positive research results he reported in the 1960s and

[50] Soffer A, Chenoweth M, Eichhorn G, et al: *Chelation Therapy*. Springfield, Illinois: Charles C Thomas, 1964.
[51] Soffer A, Toribara T and Sayman A: Myocardial responses to chelation. *Br Heart J* 23:690, 1961.
[52] Soffer A Toribara T, Moore-Jones D and Weber D: Clinical applications and untoward reactions of chelation in cardia arrhythmias. *AMA Int Med* 106:524-534, 1960.

never wrote a negative research study on chelation. Some have speculated that his appointment as editor-in-chief (1968-1993) of the prestigious medical journal, *Chest*, lead to his "change of heart." Or … maybe it was his appointment as executive director (1969-1992) of the ACCP, American College of Chest Physicians? Las Vegas *Rat-Packer* and perennial heart-throb Frank Sinatra had scored a major hit in 1965 with his wildly popular song, "*[I Did It] My Way*" – it appears to some that Al Soffer did exactly the same thing!

Diabetes Treatment Suddenly *Successful*

One expert who *never* "turned" was Carlos P. Lamar, M. D., a diabetes specialist in Miami, Florida. Imagine his workday: the woman going blind, the two men with gangrene of their toes and about to lose their feet or legs, the middle-aged woman who barely survived her recent heart attack, the teen slowly recovering from last week's severe diabetic coma, the woman whose kidneys are failing, the man who still hasn't regained his balance and strength after his stroke, and so on. Diabetic management was much more disappointing mid-way through the 20th century, with so few medical and surgical options.

What if ... something could reverse or even prevent these devastating consequences? EDTA chelation offered Lamar repeated opportunities to leap for joy at the thrill of reversing daily suffering in diabetics: he lowered insulin dosages, he saved vision in those going blind, he saved legs scheduled for amputation, he helped lower stroke risks substantially![53,54,55] It was as though the hand of God had touched their lives with unexpected blessings.

The late 1960s in America blossomed with Hippies, Haight-Ashbury psychedelic posters, and the "Summer of Love." San Francisco's *Jefferson Airplane* became one of the most popular concert acts worldwide, with enthusiastically successful hits, "*White Rabbit*" and *"[Don't You Want] Somebody to Love*." Chelation was becoming more popular as well. While EDTA was primarily being explored through the 1950s into the -60s in the United States of America, intensive research had begun into EDTA and *other* chelating compounds in quiet, crowded laboratories around the world. Artery-blocking plaque and blood cholesterol levels attracted a great deal of interest – and EDTA chelation showed

[53] Lamar CP: Chelation therapy of occlusive arteriosclerosis in diabetic patients. *Angiology* 15:379-394, 1964.
[54] Lamar CP: Chelation endarterectomy for occlusive atherosclerosis. *J Am Geriatrics Soc* 14: 272-293, .
[55] Lamar CP: Calcium chelation of atherosclerosis, nine years' clinical experience. Read before the Fourteenth Annual Meeting of the American College of Angiology. San Juan, Puerto Rico, 1968.

substantial success in America and overseas.[56,57,58,59,60,61,62,63] Novel approaches were conceived, attempting to use these chelation tools even more effectively[64, 65] – but combination drug approaches did not always produce desired enhancement of clinical outcomes.

Chelation Sent to "The Back of the Class"

"Apollo, Houston – you are ***GO*** for landing." The Apollo 11 lunar module was hand-flown by the commander at the last minute, to descend softly into the moon dust: "Houston, *Tranquility Base* here. The *Eagle* has landed." Shortly after, former X-15 test pilot and now mission commander Neil Armstrong stepped out into history, on July 20, 1969, to take "One small step for (a) man, one giant leap for mankind." Crew member Buzz Aldrin soon followed, becoming another of *only a dozen* humans who have ever set foot on a solar body other than earth. (Only *21* humans have ever seen the features of the *back* side of the moon with their own eyes – crews of 3 for the 6 landing missions and the Apollo 13 slingshot around the moon for earth return. Thanks to *space-related advances* in technology, your *iPhone* or *Blackberry* is a computer about 65,000 times more powerful than that on the Apollo lunar lander!)

Richard Nixon had *finally* assumed the presidency in January of 1969, and the Woodstock Festival marked the pinnacle of that incredible genre of rock music during the middle four days of August. "TOPGUN," the U. S. Navy Fighter Weapons School later popularized by the Tom Hanks/Kelly McGillis mega-hit movie, was established in 1969 at Miramar near San Diego, California. This

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[56] Mariani B, Bisetti A and Romeo V: Blood-cholesterol-lowering action of the sodium salt of calciumethylenediaminotetraacetic acid. *Gazz Intern Med e Chir* 62:1812-1823, 1957.
[57] Boyle AJ, Jasper JJ, McCormick H, et al: Studies in human and induced atherosclerosis employing - (EDTA). *Bull Schweitz Akad Med Sci* 13:408, 1957.
[58] Szekely P and Wynne NA: Effects of calcium chelation on digitalis-induced cardiac arrhythmias. *Brit Heart J* 25:589-594, 1963.
[59] Friedel W, Schulz FH and Schröder I: Arteriosclerosis therapy with mucopolysaccharides and EDTA. *Dtsch Gesundheitsw* 20:1566, 1965.
[60] Nikitina EK and Abramova MA: Treatment of atherosclerosis with Trilone B (EDTA). *Kardiologiia* 12(11):137, 1972.
[61] Brucknerova O and Tulacek J: Chelates in the treatment of occlusive arteriosclerosis. *Vnitr Lek* 18:729-736, 1972.
[62] Emmerson BT: Chronic lead nephropathy. The diagnostic use of calcium EDTA and the association with gout. *Aust Ann Med* 12:310, 1963.
[63] Nguyen-The-Minh: Treatment of digitalis intoxication with EDTA Na2. *Presse Med* 71:2385, 1963.
[64] Teisinger J: Biochemical responses to provocative chelation by edetate disodium calcium. *Arch Environ Health* 23: 280, 1971.
[65] Wartman A, Lampe TL, McCann DS, Boyle AJ: Plaque reversal with MgEDTA in experimental atherosclerosis: Elastin and collagen metabolism. *J Atheroscler Res* 7: 331, 1967.

unique center had just one mission: train a generation of dogfight pilots who could reverse the severe losses to MiG-17s and -21s over Viet Nam. They turned capable but inexperienced aviators into winners, in short time creating almost a *four-fold* improvement in kill:loss ratios.

Chelation also *should* have been a mega-winner by this time, but 1969 was yet another "*not quite* a banner year." Actually, the thunder-boomer for chelation therapy was a *silent* non-event if anything. More like a "paper" event … or even *no* event at all. And it wasn't at all good. How could "*nothing* happened" be so important? Remember hearing that famous advice, *"Follow the Money"*? *That's* how! Pharmaceutical manufacturers ("drug companies") make business profits by selling their drugs. Finding something that seems to work, proving that it's safe, proving that it actually works, getting it approved by the Food and Drug Administration (FDA) for marketing, and then finally getting out the word so that doctors will prescribe yours instead of someone else's drug – all these tasks require a considerable investment.

Even though a drug might cost only penny to make, the sale price offered by the manufacturer is set as many dimes or even many dollars, high enough to recover money already invested *and* to make a (monumental) continuing profit. (Good stocks to buy, if you don't mind profiting from a system that perpetuates human suffering rather than promotes human healing.) What about others who did *not* do the expensive research and who did *not* make the marketing investment? To keep them from being able to steal away sales by discounting the new drug at a lower price, the United States grants "patent protection" for a number of years. During the "patent period," only the developing company is allowed to sell the particular drug. In 1969, the patent protection earlier granted to Abbott Laboratories for EDTA ("*Endrate*") production and sales quietly expired. From that time on, *any* licensed drug company could make it – and they could sell it for as low a price as they chose. No more sales profits to the pioneering company, Abbott Laboratories. Research funds previously available from this company simply dried up.

What happened to the unbounded excitement proclaimed by physicians and scientists during the 1950s and early 1960s, in America *and* around the world? Almost overnight, academic research to explore how best to use EDTA chelation therapy ground to a snail's pace for three reasons *unrelated* to the admittedly urgent need to find safe and effective treatments for heart and blood vessel (and other) diseases:

First – the accidental death of Dr. Marvin Seven in 1961 led to a waning of interest at the leading medical institution, the National Institutes of Health (NIH); and

Second – the clearly-biased and *falsely* negative "reappraisal" article by Drs. Kitchell, Meltzer, and colleagues in 1963 was accepted as "fact" by innocent readers who only heard about it or, at best, only looked at the conclusions and not at the data that documented continued patient successes; and

Third – expiration in 1969 of Abbott's patent protection removed *any* interest in commercial sponsorship of further research, since needed profit could no longer be recovered.

The suppression of this medical miracle needed no active conspiracy, just nothing more than the quiet happenstance of these three unrelated circumstances. And the best chance for millions to regain and maintain life long health quietly faded into limbo.

PART THREE:
HOW DISEASE HAPPENS, HOW TREATMENTS WORK

One more factor was "operating" in the early 1960s: anesthesia, antibiotics, and surgical techniques were advancing in leaps and bounds. Several faltering attempts were perpetrated by "masked men" speaking in muffled voices, cloistered inside chilly, brightly-lit surgical suites. These dedicated efforts finally led to repeatedly successful "heart artery bypass" operations (aortocoronary artery bypass grafting, using a removed leg vein or a chest wall artery), the "CABG" (pronounced *"cabbage"*) surgery now used around the world. Drs. Michael E. DeBakey, Jimmy F. Howell, and their surgical colleagues at the Baylor University School of Medicine in Houston, Texas, are generally acknowledged as leaders advancing this effort, making "heart surgery" literally a household world.

To give fair reporting of the long-standing surgical drama in Houston, Denton A. Cooley, M. D., had worked closely with DeBakey for almost 20 years before personality clashes finally terminated their collaboration. Cooley and colleagues (at what soon became The University of Texas School of Medicine at the Texas Medical Center) continued to make world-class trend-setting surgical progress, literally across the street from their Baylor peers. ***All*** of these Houston surgeons have long been recognized by their professional peers as among the very best in the world, a "big" reputation … just as you would expect from *Texans!*

Survival of patients who were previously dying led to the hopeful expectation that this spectacular surgery was "*the*" answer to atherosclerotic heart and blood vessel diseases.[66] No such luck.

On page after page of words tumbling over other technical terms, a blur of article after article … over the past 45 years, *hundreds* of research studies have shown that bypass surgery and the later "balloon" angioplasty procedure have ***failed***, unfortunately, to live up to their promise of easy success. For example, with regard to bypass surgery: angina heart pains recur in up to 20 per cent of patients during their first post-operative year and then in an additional 4 per cent for each year thereafter. A second bypass (or balloon procedure) is required in over 30 per cent of patients by 12 years after initial surgery. Re-operation carries a higher death rate and risk of heart attack associated with surgery, along with less complete relief of angina. As further "re-do" operations are performed in a patient, the benefits diminish and the risks increase.

During the *first* year after surgery, ***up to two-thirds of surviving patients*** can suffer with heart attack, stroke, heart rhythm disturbance, worsening high blood pressure, congestive heart failure, or "pump syndrome" (where their personality or mental functions change as a result of being on the heart-lung pump during a heart artery bypass operation). Depending on the source and site of bypass grafts, up to 30 per cent of them might narrow or block completely or result in a heart attack within the first year. Balloon angioplasty procedures, even with fancy "stents" (tube-shaped bracing) having embedded radiation or chemotherapy, *can* close even more quickly. In the experience of many experts, EDTA chelation therapy, when done *before* surgery, appears to reduce the need for (and even the risks of) such operations for many patients proposed for surgery. When done *after* surgery, EDTA chelation appears to help maintain open arteries with fewer complications (such as heart attack or re-operation) for many *more* months or years.

Free Radical Chemistry and Anti-Oxidants: Advanced Medical Care is *Here*, *Now*

Why has surgery (and even drug therapy) *not* lived up to the early promise of simple success with heart and blood vessel diseases? Complicated question but a straightforward and understandable answer. Microscopes look at tiny organisms and cells. Electron microscopes look at even tinier structures. But the *root cause*

[66] Garrett HE, Dennis EW and DeBakey ME: Aortocoronary bypass with saphenous vein graft: Seven-year follow-up. *JAMA* 276(18):1517-1520, 1996.

of disease changes – including the narrowing and blocking of grafts or stents for coronary (heart) artery blockage – cannot ever be *seen* because the "players" act at the miniscule molecule and atom level. This realization was proposed over 50 years ago and is the subject of continuing extensive research efforts around the world: "free radicals." These are *oxidizing* molecules: they are looking to steal an electron from (to "oxidize") another molecule, often creating such serious damage that the "donor molecule" will no longer function. *Anti*-oxidants, such as vitamins – C and E and beta-carotene – *and* other molecules – bioflavonoids from foods, internally-produced glutathione, among others – all help to protect fragile cell structures from damage caused by oxidizing free radicals.

To be honest, carefully controlled oxidizing or "redox" reactions are important metabolic processes within every cell.[67,68] When these occur more randomly or when they exceed the capacity of restraining mechanisms, *that's* when free radical damage can occur.[69,70] (Yes, oxygen is essential for life at low levels but *high* doses and the wrong settings can be damaging as well – that's why premature babies have to be monitored very carefully, so they get just enough oxygen to nourish the brain and other organs but not so much as injure the sensitive eye retinas and lung tissues.) Free radicals out of control create suffering and death by promoting inflammation.[71] Free radicals cause and amplify ***all*** human illness and injury.[7273] **Period!**

In 1955, Ray Kroc proudly opened *his* first McDonald's "restaurant" (9th in the chain, founded in 1940) – and yes, since then the chain *has* served ***Billions and Billons*** of burgers! What on earth could the *Golden Arches* have to do with handling an atomic bomb carefully? Well … both bombs *and burgers* can hurt you. Intensive research into the biological effects of "ionizing radiation" (invisible rays that create free radicals) was a top priority after World War II, when deployment of atomic bombs on Hiroshima and Nagasaki, Japan, showed massive radiation injuries in those who survived the shockwave blast and decimating

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[67] Coon MJ . Oxygen activation in the metabolism of lipids, drugs and carcinogens. *Nutr Rev* 1978;36:319-328.

[68] Fridovich I. Superoxide dismutases. *Annu Rev Biochem* 1975:147-159.

[69] Dormandy TL. An approach to free radicals. *Lancet* 1983,ii.1010-14.

[70] Dormandy TL. Free-radical oxidation and antioxidants. *Lancet* 1978;8:647-650.

[71] Demopoulos HB, Pietronigro DD, Flamm ES, et al. The possible role of free radical reactions in carcinogenesis. *Journal of Environmental Pathology and Toxicology.* 1980;3:273-303.

[72] Demopoulos HB, Pietronigro DD, Seligman ML. The development of secondary pathology with free radical reactions as a threshold mechanism. *Journal of the American College of Toxicology* 1983;2(3):173-184.

[73] Flamm ES, Demopoulos HB, Seligman ML, et al. Free radicals in cerebral ischemia. *Stroke* 1978;9(5):445-447.

fires.[74,75,76] Working long hours peering at cells through the microscope, Denham Harman, M. D., was conducting research for the United States Atomic Energy Commission at the University of California/Berkeley, Donner Laboratory of Biophysics and Medical Physics. Through tired eyes, he was suddenly was struck at how ***radiation*** *damage* to cells and tissues so closely looked like ***aging*** *degeneration* changes. But the *radiation* changes were happening in hours or days rather than the years required for *aging* changes. As he concluded, "This [free radical] theory is suggestive of chemical means of prolonging effective life."[77]

Back to the burgers – how can *they* hurt you? "Fast foods" preparation (particular the heating and *re*-heating of oils and proteins) can produce *massive* amounts of free radicals, challenging your body's capability to protect itself and stay well.[78] The crucial significance of Harman's 1955 theory of highly unstable oxidizing organic molecules as a cause of aging and disease became obvious over the next 15 years.[79] Harry B. Demopoulos, M. D., published seminal articles *explaining disease progression* in 1972 in the prestigious *Federation Proceedings*: "The basis of free radical pathology"[80] and "Control of free radicals in the biologic systems."[81]

Finding that calcium concentration increases in tissues as organisms age and accumulate free radical damage,[82] Andrew Sincock, Ph. D., at the University of St. Andrews in Fife, Scotland, showed a 50 per cent *increase in lifespan* of microscopic marine "animals" that were bathed every other day in an EDTA solution.[83] He found similar results using sodium citrate, a mild chelator (recall its

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[74] Foreman H: The use of chelating agents for accelerating excretion of radioelements. *J Am Pharm A* (Scientific edition) 42:629-632, 1953.

[75] Cohen SH, Gong JK, Fishler MC: Ethylenediaminetetraacetic acid (EDTA) treatment of internal radioactivecontamination. *Nucleonics* 11(1):56, 1953.

[76] Hart H and Lazlo D: Modification of the distribution and excretion of radioisotopes by chelating agents. *Science* 11:56-61, 1953.

[77] Harman D: Aging: A Theory Based on Free Radical and Radiation Chemistry. July 14, 1955, *UCRS-3078*, Unclassified Health and Biology, Contract No. W-7405-eng-48; reprinted, same title, in *J Gerontol* 11:298-300, 1956.

[78] Perspectives on cancer-causing chemicals in foods available at Ames BN. Dietary carcinogens and anticarcinogens. *Science* 1983;221:1256-1264.

[79] Kotin P, Falk HL. Organic peroxide, hydrogen peroxide, epoxides and neoplasia. *Radiat Res* 1963;3(supp1):193-211.

[80] Demopoulos HB: The basis of free radical pathology. *Fed Proc* 32:1859-1861, 1972.

[81] Demopoulos HB: Control of free radicals in the biologic systems. *Fed Proc* 32:1903-1908, 1972.

[82] Sincock AM: Calcium and aging in the rotifer mytilina brevispina var redunca. *J Gerontol* 29(5):514-517, 1974.

[83] Sincock AM: Life extension in the rotifer by application of chelating agents. *J Gerontol* 30(3):289-293, 1975.

first use in 1941 by Kety and Letnoff, to remove lead). D. P. Deucher published his confirming observations on chelation as an antioxidant strategy in 1988:

> "A new understanding of many degenerative disease of aging is proposed, based on recent findings in the areas of molecular biology and oxygen free radical reactions. EDTA chelation therapy causes an increased excretion of polyvalent metals from the body, both toxic heavy metals and transition metals which catalyze free radical pathology. Antioxidant effects are proposed as a cause of the observed clinical benefits following intravenous EDTA chelation therapy. ..... Patients with free radical-related diseases other than atherosclerosis were also treated, with *good to excellent results in **91** per cent* of patients."[84]

Calcium accumulating in tissues, of course, produces hardening arteries and arthritis changes, among others. Once again … remember the ***90*** number?

Star Trek, the original of *six* television *series*, flew boldly into America's television cult culture in 1966, winning critical acclaim for bomber- and *Pan Am* commercial-pilot-turned-screenwriter Gene Roddenberry … and spawning 11 wildly successful major *movie* productions over the next forty years. Roddenberry's star on Hollywood's Walk of Fame was placed in 1986, five years before his death at 70 years old from congestive heart failure. A portion of his ashes were carried aboard Space Shuttle *Columbia* in 1992; another portion were scattered in space in 1997. Was his early death from heart failure *preventable* by chelation therapy? *That* success has been the delightful result for many thousands of patients.

The explanation for congestive failure was documented in 1966, William A. Pryor, Ph. D. He published his first of several edited volumes in the series, *Free Radicals in Biology*,[85] clearly explaining the biological chemistry creating pathological changes in tissues. London professors Barry Halliwell and John Gutteridge in 1985 published their first edition of *Free Radicals in Biology and Medicine*.[86] Stephen A. Levine, Ph. D., and Parris M. Kidd, Ph. D., in 1985 published a monograph clearly summarizing the chemical, physiological, and pathological bases of free radical damage. Their textbook described mechanisms

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[84] Deucher DP: EDTA chelation therapy; an antioxidant strategy. *J Adv Med* 1(4):182-190, 1988. (Emphasis added)

[85] Pryor WA: *Free Radicals in Biology* (series starting in 1966). New York, New York: Academic Press, 1966 and later.

[86] Halliwell B and Gutteridge J: *Free Radicals in Biology and Medicine*. New York, New York: Oxford University Press, USA, 1985 (1st edition) through 2007 (4th edition)

that explain many of the clinical improvements seen when administering nutritional treatment programs and chelation therapy.[87] Harman's "free radical" molecular answer from his deep view into the crystal ball was right![88]

The $64,000 Question game show demanding answers debuted on CBS television in 1955, hosted by actor Hal March. The answer to *your* most important question, how to enjoy life long health, strangely comes from rubber bands. When fresh, they stretch and snap and recover easily. When bands are "old," over-stretching breaks them suddenly. Puzzling over this observation, chemist Johan Bjorksten, Ph. D., offered his speculation, in 1955, that "cross-link" attachments between the long strands of various tissues (including genetic strands of DNA nuclear material) would form over time, increasingly interfering with pliability and free access required for cell functions.[89] This Cross-Linkage Theory, particularly when viewed in the contexts of the Free Radical Theory and the Wear-and-Tear Theory, provides a clear mechanism for free radical damage to cause "aging" changes. Over the next 40 years, Bjorksten published further articles to explain in detail his insights on aging.[90,91,92,93,94,95] To answer your unasked question: yes, *many* cooking methods *can* increase cross-linking in foods (especially meats), clearly lowering their bioavailability to repair and maintain your body.

Superstar Michael Jackson set the stage for a lifetime of recognition as "The Gloved One" by wearing his trademark single white sequined glove during his 1984 Victory tour. That original glove is expected to fetch over $60,000 at auction. Over a lifetime on the planet, each person recognizes (and often resents) aging changes in him or herself and in family and friends. While there are a myriad of theories that have been offered to "explain" aging and illness processes, the Free Radical Theory of Harman fits neatly within the operation of each of the others. Chelation therapy is a primary treatment for free radical biochemistry and appears to reduce cross-linking degenerative changes as well. Chelation experts

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[87] Levine SA and Kidd PM: *Antioxidant Adaptation: Its Role in Free Radical Pathology*. San Leandro, California: Allergy Research Group, 1985.

[88] Del Maestro RF. An approach to free radicals in medicine and biology. *Acta Physiol Scand* 1980;492(supp1):153-68.

[89] Bjorksten J: Cross-linking—key to aging? *Chemical Engineering News* 33:1957, 1955.

[90] Bjorksten J: Pathways to the decisive extension of the human specific lifespan. *J Am Geriatr Soc* 25(9):396-399, 1977.

[91] Bjorksten J: The cross-linkage theory of aging as a predictive indicator. *Rejuvenation* 8:59-66, 1980.

[92] Bjorksten J: Possibilities and limitations of chelation as a means for life extension. *Rejuvenation* 8:67-72, 1980.

[93] Bjorksten J: *Longevity, a Quest: An Odyssey*. Madison, Wisconsin: Bjorksten Research Foundation, 1981.

[94] Bjorksten J: *Longevity: Past, Present, and Future*. JAB Publishing Co., 1987.

[95] Bjorksten J: Possibilities and limitations of chelation as a means for life extension. *J Adv Med* 2(1-2):77-78, 1989.

Elmer M. Cranton, M. D., and James P. Frackelton, M. D., offered this conclusion in their 1984 definitive review:

> "Recent discoveries in the field of free radical pathology provide a coherent, unifying scientific basis to explain many of the diverse benefits reported with EDTA chelation therapy. The free radical concept provides a scientific basis for the treatment and prevention of the major causes of disability and death; including atherosclerosis, dementia, cancer, arthritis and numerous other diseases."[96,97]

In the latter half of the 20th century, the picture was become more and more clear, *except* to those physicians, assistants, and untrained public, whose thinking relies solely on drugs and surgery to treat disease.

Aging: An "Illness" Worsening One Day at a Time

By 1957, Elvis moved quickly from American superstar to international phenomenon – *and* he bought Graceland for the outlandish sum of *$100,000*. And then on December 20, 1957, Elvis received his Army draft notice. The Soviet Union fired the opening salvo in the Space Race on October 4, 1957, with the launch of a 183-pound satellite, *Sputnik 1*, the first human-made object to orbit the earth. Of more importance to your *health*, the prior two years had been busy for Dr. Harman, who extended his far-reaching insights into just how free radical changes can create hardening of the arteries.[98] He strongly arguing that increased use of margarine that was *(and still is!)* being proposed by various professional organizations would lead quickly to a higher incidence of heart and blood vessel diseases.[99,100] By 1994, he was able to summarize 40 years of extensive research in this simple conclusion:

> " ... Aging is the accumulation of changes that increase the risk of death. ... Support for [the free radical theory of aging] is now extensive. There is growing consensus that the theory is correct and … [This bodes] well for future efforts to increase the functional life span, i.e., the period of healthy, productive life. .....

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[96] Cranton EM and Frackelton JP: Free radical pathology in age-associated diseases: treatment with EDTA chelation, nutrition and antioxidants. *J Holistic Med* 6(1):6-37, 1984.

[97] This review was revised and updated as: Cranton EM and Frackelton JP: Free oxygen radical pathology and EDTA chelation therapy: mechanisms of action. *J Adv Med* 11:277, 310, 1998.

[98] Harman D. The aging process. *Proc Natl Acad Sci USA*. 1981;78:7124-7128.

[99] Harman D: Atherosclerosis: A hypothesis concerning the initiating steps in pathogenesis. *J Gerontol* 12(2):199-202, 1957.

[100] Harman D: Atherosclerosis: Possible ill-effects of the use of highly unsaturated fats to lower serum-cholesterol levels (Letter). *Lancet* 2:1116-1117, 1957.

> " ... [The] average life expectancy ... can be increased ... by: 1) keeping body weight down, at a level compatible with a sense of well-being, 2) ingesting diets adequate in essential nutrients and designed to *minimize* random damaging free radical reactions in the body, 3) supplementing the diet with one or more antioxidants, e. g., beta-carotene, and vitamins C and E, and 4) employing measures to minimize accumulation of *metals* in the body capable of initiating adverse free radical reaction and of those that can impair the activity of some enzymes."[101]

For the most part, this puzzle has been solved by scientists and physicians who have devoted their lives and energies to discovering how best to treat human illness … and ***chelation to reduce concentrations of toxic metals is absolutely essential!***

On April 13, 1970, two days into the third lunar landing mission, Apollo 13 experienced a tragic oxygen tank explosion in the Service Module, "Houston, we've had a problem." Damage crippled the power and life support systems on the Command Module. Astronauts James Lovell, "Jack" Swigert, and Fred Haise were rescued despite insurmountable odds in large part due to the calm manner in which the Mission Control crew " … laid out all the options, and failure was not one of them." That later explanation was by Flight Dynamics Officer Jerry Bostick from Mission Control. A great "tag line," it was transformed by the script writers for the 1995 Ron Howard *Apollo 13* film, into "Failure is not an option" and was attributed to Gene Kranz, lead Flight Director. Contrasting that space success was the great sadness of the break up of *The Beatles* announced by Paul McCartney on April 10, 1970. Ironically, their final film, the documentary *Let It Be*, was released *in* 1970 during their breakup and received the Academy Award for the Best Original Song Score.

The true sadness of the 1970s era, however, was felt in homes across the country: Americans saw husbands and fathers continuing to die of heart disease while human research into EDTA chelation therapy for *heart disease* had ground to a virtual standstill. Boyle and his colleagues reported improvements they observed in patients with rheumatoid arthritis.[102] Tamburino's group in 1976 described their success using chelation to *reverse osteoporosis*, a major

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[101] Harman D: Aging: Prospects for Further Increases in the functional life span. *Age* 17:119-146, 1994. Emphases added.

[102] Leipzig LJ, Boyle AJ and McCann DS: Case histories of rheumatoid arthritis treated with sodium or magnesium EDTA. *J Chron Dis* 22:553-563, 1970.

breakthrough.[103] Peng and his coworkers provided laboratory *proof* that chelation drugs improved energy production in heart muscle affected by a heart attack.[104,105] Yang had shown these energy production effects in normal heart tissue *as early as 1960!*[106] Walker reported rabbit research to evaluate reversal of hardened-artery plaque blockage and improvements in blood fats (cholesterol and triglycerides).[107,108,109] Despite these *obvious* benefits, EDTA chelation studies attracted little funding and no major interest.

The 1970s are well remembered for the *Dirty Harry* ("Go ahead, make my day") series of five movies by Hollywood legend and four-time Academy Award winner Clint Eastwood. His acting career since the 1950s spans the *same six decades* as the research efforts in EDTA chelation therapy! While American efforts to understand EDTA chelation therapy had waned through the 1970s, foreign research into *other* chelators – BAL (dimercaprol), d-penicillamine (Depen, Cuprimine), DMPS (Dimaval, Unithiol), desferrioxamine (DFO), later DMSA (Chemet, succimer) – began to accelerate (and continues to the present day).[110,111] Since these compounds are less commonly used in this country, their extensive history and successful uses will not be addressed in this chapter.

In an odd twist of fate, just when research interest in America was waning … the first comprehensive history and review of EDTA chelation therapy was published in a major peer-reviewed journal in 1976 by early chelation experts, Garry F. Gordon, D. O., and Robert B. Vance, D. O.[112] In *this* "short" chapter,

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[103] Tamburino G, Flore CE and Petralito A: Comparison of effects of EDTA (Versenate) infusion on plasma calcitonin levels in senile osteoporotic and aged matched healthy subjects. *IRCS Med Sci Libr Compend* 4:362, 1976.

[104] Peng CF, Kane JJ, Murphy ML and Straub KD: Abnormal mitochondrial oxidative phosphorylation of ischemic myocardium reversed by Ca2+-chelating agents. *J Mole Cell Cardiol* 9:897-908, 1977.

[105] Peng CF, Kane JJ, Bisset JK, et al: Improvement of oxidative phosphorylation by EDTA in mitochondria from acutely ischemic myocardium which has been reperfused. *Clin Res* 25(3):244A, 1977.

[106] Yang WC: Stimulatory effect of EDTA on cardiac mitochondrial respiration. *Biochem Biophys Res Commun* 2: 22, 1960.

[107] Walker F, Wilson III C and Kaman RL: The effects of EDTA chelation therapy on plaque composition and serum lipoproteins in atherosclerotic rabbits. *J Am Osteropath Assoc* 78(2):144, 1978.

[108] Walker F, Wilson III C and Kaman RL: The effects of EDTA chelation therapy on plaque calcium and plasma lipoproteins in atherosclerotic rabbits. *Fed Proc* 38:311(No. 4335), 1979.

[109] Walker F: (Ph. D. thesis, Texas State University): *The effects of ADTA chelation therapy on plaque, calcium, and mineral metabolism in arteriosclerotic rabbits*. Ann Arbor, Michigan: University Microfilm International, 1980.

[110] Kurliandchikov VN. Treatment of patients with coronary arteriosclerosis with unithiol in combination with vitamins. (Russian, Kiev) *Vrach Delo* 6:8, 1973

[111] Brucknerova, O. J. Tulacek: Chelates in the treatment of occlusive arteriosclerosis." *VNITRNI LEK* 18:729, 1972

[112] Gordon GF and Vance RC: EDTA chelation therapy for atherosclerosis: History and mechanisms of action. *Osteopathic Annals* 4: 38-62, 1976.

we've barely scratched the surface while severely limiting our topic: typing "EDTA chelation" into ***google*** yields search results with "about 285,000" hits. Needless to say, Americans are now sharing the stage in modern chelation treatment with drugs *other than* EDTA, investigated intensely in progressive countries around the world.

Travelers to nations around the globe have seen firsthand that "doing something *different*" sometimes produces dramatically better results than "doing it *our* way" in America. In fact, different strategies adopted *here at home* sometimes demonstrate startling success unexpected by "the Establishment." Case in point: Southwest Airlines, headquartered at Love Field airport in Dallas, Texas, began flying in 1971 … a short 38 years ago. As of their report in January 2009, they concluded their *36th consecutive* profitable year.

Southwest co-founder (with Rollin King) and long-term CEO and Chairman (with the open office *door* to all employees, not just an "open door *policy*") Herb Kelleher had to overcome a 3-year legal battle defending against suppression by traditional air carrier competitors Braniff, Aloha, United, Trans-Texas, and Continental, who were hoping to prevent upstart operations. The original three Boeing 737s have grown to over 500 relatively "young" airships, the second-largest airliner fleet in the world, conducting 3,500 flights a day, serving 66 cities with more added annually, serving passengers enjoying "everyday low fares" on *their* "Company Plane." Southwest carries more passengers per year than *any other* world airline, flying short, quick, "no frills" trips into "secondary" airports of major cities, using only one aircraft type – and still cranking maximal productivity by their innovative "quick turnaround" from landing to departure. Since the 1987 start of tracking Customer Satisfaction statistics, Southwest has consistently led the entire industry with the lowest ratio of complaints per passengers boarded.

Why all these details on an "upstart" air carrier with less than 40 years experience? Just about *everything* is unique with Southwest Airlines (remember *Shamu*, *Lone Star One*, and other remarkable painted planes?) – including a profit-sharing plan where employees (87 per cent unionized) own about 10 per cent of company stock. FORTUNE magazine has repeatedly ranked Southwest Airlines in the top five of the "Best Companies to Work For" and the "Most Admired Corporations in America." A list of other honors and awards is too long to include. Aircraft, ramp support equipment, and ticketing facilities are innovative in many respects, and Southwest led the way as first carrier to have an internet website, in 1995. While major air carriers use a "hub-and-spoke" layout that encourages two or more flights to reach some destinations, Southwest relies on its own "Point-to-

Point" system … where *80* per cent of its passengers fly non-stop. For example, flights departing from Las Vegas land in all but ten of Southwest's destination airports. They've done ***just about everything different*** in the air travel business, starting 50 years after commercial flights in America started transporting folks from one city to another.

So who cares about Southwest? Competitors, of course. Funny thing: *each* of those companies who originally sued to *prevent* the launch of this soon-to-become-incredibly-successful approach to travel … became defunct or turned to bankruptcy or bailout. Southwest Airlines keeps people happy because of the *many* ways the airline does it different. Would you believe … chelation therapy keeps people happy because it is a different (and incredibly successful!) way to offer life long health. In much the same way that other airlines tried to suppress Southwest's new ideas in passenger service, "the medical Establishment" that relies on drugs and surgery actively *suppresses* the idea of using chelation therapy to treat the *causes* of disease. Yet, as you have seen … chelation shares with Southwest Airlines an unprecedented *pattern* of success, producing stunning results in so *many* conditions that, when ineffectively treated, are responsible for lingering suffering and death. Does opposition to chelation mean that … they want to "shut out" this kind of "competition"? Remember Southwest Airlines! *Remember the **90** number!* ***You*** decide.

Courts Plunge the Stake Deep into the Government Empire Vampire

PBS Public Broadcasting began to televise the Grand Ole Opry show in 1978, introducing Nashville country music to the world. A *former* Opry performer, Texas "outlaw country" platinum-album singer Willie Nelson teamed with later *Highwayman* sidekick Waylon Jennings to record in 1978 the Grammy-winning enduring favorite, "*Mammas, Don't Let Your Babies Grow Up To Be Cowboys*." Not quite a "platinum" event, but the most significant *chelation* event of that year *did* come from "on high." No, it had nothing to do with the unexpected death of Pope John Paul I after being seated for only 33 days. Oddly enough, it came from within the dark wood-paneled walls of a somber federal courtroom. The U. S. Food and Drug Administration (FDA) had prosecuted *(persecuted?)* chelation pioneer H. Ray Evers, M. D., for his use of EDTA chelation therapy for heart and blood vessel diseases. The FDA originally *had approved* the chelation drug (in the late 1950s) for listing in the *Physicians' Desk Reference* as "possibly effective" in the treatment of peripheral (leg) *artery*

disease! The passage of the Kefauver-Harrison Drug Control Act in 1962 lead to removal of its listing because the original study involved only 6 patients.

Tennessee Senator Estes Kefauver considered the law his "finest achievement" in consumer protection, requiring drug companies to disclose the side effects of their products and requiring them to "prove" (by extensive/expensive research studies) that their products were, in fact, effective and safe. (*Hundreds* of drugs were deleted or had "labeled indications" removed, as happened with EDTA. *Actifed*, a brand-named decongestant developed in 1958, was included in the standard medical kit aboard several Apollo space missions … despite having been classified by the FDA as "ineffective" after their Kefauver review because the manufacturer declined to submit qualifying research studies.) Clinical *observations* of EDTA effectiveness meant nothing to the government; they wanted specific (and expensive) testing that the manufacturer never performed, probably because patent protection was soon to expire in 1969.

In a paper privately circulated after presentation at professional meetings in the 1970s, "Chelation of Vascular Atheromatous [fatty blood vessel blockage] Disease," Dr. Ray Evers emphasized the effectiveness he had observed in some 15 years of treating "all comers":

> "We find [in a review of a six year period where chelation therapy treatments were given to about 3,000 patients by the Staff of Columbia General Hospital that results are,] in all cases of angina, characterized by the patient having no need for vasodilators [such as nitroglycerin] after about the fifth infusion ... and that ***ninety per cent*** of these problems in the lower extremities make significant gains including regaining ability to walk long distances comfortably, freedom from claudication [leg pains with walking], and evidence of improved distal [foot] circulation."[113]

As the saying goes, "It's hard to argue with success." "*Evidence*-based medicine" is the new buzzword in 21st century practice. Simply stated, it is a conscientious effort to assess the quality of evidence (scientific facts and observations) relevant to the risks and benefits of treatments and to apply the current best evidence in making decisions about the care of individual patients. Remember the ***90*** number? So … why are "modern" physicians so reluctant to accept the decades-long *evidence* of the extreme effectiveness of chelation therapy? *Good question!*

[113] Remarks later recounted in Evers R. Chelation of vascular atheromatous disease. *Journal International Academy Metabology* 1972;2:51-53. (Emphasis added)

As the FDA began even more intensely to flex its administrative muscle, the agency moved to shut down chelation treatments for anything other than its long-standing "approved use" in lead poisoning. Based on his personal observations of stunning clinical success, Dr. Evers was tenacious, insisting that he *had* to use EDTA chelation in order to *best* serve his patients, regardless of what the FDA had approved to be listed "on the label." The judge was unimpressed with the government's "case" against Dr. Evers, concluding that the federal agents were playing a bit fast and loose with the facts *(surprised?)*. The precedent-setting opinion issued by the federal court, still reflected today in the introductory pages of *every* edition of the *Physicians' Desk Reference*, says it best:[114]

> "In People v. Privitera, Cal.App., 141 Cal.Rptr. 764, 774 (1977), the court ... stated that,
>
> > 'To require prior State approval before advising – prescribing – administering – a new treatment modality for an informed consenting patient is to suppress innovation by the person best qualified to make medical progress. The treating doctor, the clinician, is at the cutting edge of medical knowledge.
> >
> > 'To require the doctor to use only orthodox "State sanctioned" methods of treatment under threat of criminal penalty for variance is to invite a repetition in California of the Soviet experience with Lysenkoism. The mention of a requirement that licensed doctors must prescribe, treat, "within State sanctioned alternatives" raises the spector of medical stagnation at the best, statism, paternalist big brother at worst. It is by the alternatives to orthodoxy that medical progress has been made. A free, progressive society has an enormous stake in recognizing and protecting this right of the physician.'
> >
> > " [page 1150] …..
>
> "Irrespective of the strong medical school of thought that chelation has not been clinically shown to help arteriosclerosis, the weight of the evidence submitted to this court is to the contrary." [page 1145] …..
>
> "The problem for the physician, as in most serious cases, is to weigh the possible benefits of treatment against the possible risks." [page 1146] …..

[114] United States v. Evers, 453 F Supp 1141, 1978.

> "... [The] physician must be free to use the drug for an indication not in the package insert when such usage is part of the practice of medicine and for the benefit of the patient." [page 1149] …..
>
> "... [The] physician can ascertain from medical literature and from medical meetings new and interesting proposed uses for drugs marketed under package inserts not including the new proposed usages. ... New uses for drugs are often discovered, reported in medical journals and at medical meetings, and subsequently may be widely used by the medical profession." [page 1149] …..
>
> "When physicians go beyond the directions given in the package insert it does not mean they are acting illegally or unethically and Congress did not interfere with medical practice by limiting the ability of physicians to prescribe according to their best judgment. See FDA Consumer, November 1975, page 7." [page 1150] …..
>
> "The courts have rather uniformly recognized the patients' rights to receive medical care in accordance with their licensed physician's best judgment and the physician's rights to administer it as it may be derived therefrom. [cases cited]" [page 1150] …..
>
> "The Court will keep in mind the well-known medical fact proved by several physicians in this proceeding that, of all patients treated by physicians, a large majority would recover no matter what treatment is provided therefor. However, this majority is obviously not applicable to those suffering from advanced arteriosclerosis wherein the patient may expect an early disabling resulting from stroke, hypertension, heart failure, or other related diseases or cardiovascular problems." [page 1144]

While it might be easy to miss the significance of this court-ordered protection, *these* facts might mean something to you personally: *many* of the current FDA-approved *high blood pressure* medications (as listed "on the label") are widely used by conventional doctors to treat *heart* disease … and many approved *heart* drugs are used to treat *high blood pressure* … and the list goes on and on. These common "off-label" uses came as a result of careful *observations* made by practicing physicians that *something worked better* than other approved drugs, regardless of what information was "on the label" or whether *any* research studies had been performed or reported.

What is clear now, based on 30 more years of scientific research, is that chelation "works its wonders" by reducing your body burden of toxic heavy metals and, thereby, reducing inflammation damaging your system. **Thus, *all* treatments**

are actually performed, in fact, for its *approved* and *labeled* indication! The only real problem is that "third-party payers" (insurance companies) refuse to accept the demonstration of chronic exposure as presented and refuse to reimburse for treatments except under the most dire of *acute* poisoning circumstances.

As Dr. Evers was fond of saying, "One does not have *true* freedom until one is free to choose how he wishes to be *treated* medically."[115] These issues will rise to intensely personal concern in coming years, as the impact of "***illness*** care reform" begins to severely limit ***any*** choices. And just how, exactly, should a patient *discover* the choices he has in terms of being treated. Why, from his physician, of course! At least, that is the opinion of the *courts*. For example: "Every physician has the ***duty to disclose all available choices*** of therapy to the patient, and if he fails to do so, he may be held liable."[116]

Surely you take great comfort in knowing that your physician "will step forward" to help you in understanding ***all*** your options and how you might best choose to be treated. If the physician assistant or the nurse practitioner isn't sharing this information, be sure to insist that you'd rather see your physician. And be *sure* to ask him or her about how chelation therapy might actually be your best choice – or at least an important part of your health care plan. And remember that your doctor, to advise you honestly, needs to know the *facts* about chelation – all ***these*** facts – rather than just "winging it" with a groundless opinion.

No Clean Air, *No* Clean Water, *No* Clean Food

Audiences stormed the movie theaters in December 1977 to see the wildly-popular *Saturday Night Fever*; its soundtrack became the best-selling ever. Actor/dancer John Travolta was nominated at age 24 for the Academy Award, one of the youngest ever so honored. That year saw another young one, *two*-year-old child golf prodigy "Tiger" Woods, begin an astounding career. Currently the World No. 1, he was the highest paid professional athlete of 2008, earning about $110,000,000 (yes, *million*) in winnings and endorsements. While entertainment certainly has its value, more important (to you) *health* issues sometimes hinge on *rational* actions by the national government. At the same time the FDA was *irrationally* prosecuting Dr. H. Ray Evers in 1978, the administration was overseeing the final removal of lead additives from automobile gasoline, first

[115] Evers HR, as quoted by Brecher H and Brecher A in *Forty-Something Forever: A Consumer's Guide to Chelation Therapy and other Heart-Savers*. Herndon, Virginia: HeartSavers Press, 1992. Page 115.
[116] Cobbs v. Grant, 8 Cal 3d 240, 104C.R. 505, Emphases added.

ordered by the Congress in 1975. Although lead helps to reduce "knocking" and loss of power in internal combustion engines, it has long been known to be profoundly toxic to humans and animal life. By 1978, ***un***leaded gasoline was the prevailing formula. The health impact of reducing lead exposure was unexpectedly sudden and well documented: *lowering* of blood pressure averages in the American population.

The NHANES (*N*ational *H*ealth *a*nd *N*utrition *E*valuation *S*urvey) is a major research effort conducted over 4 years, every 10 years, by the National Center for Health Statistics. The aim of the survey is to assess the health and nutritional status of adults and children and to *track changes* over time. The simplest explanation available from the statistics collected from 1976 through 1979 showed that the switch to unleaded gasoline reduced lead exposures, leading to lowering of blood lead levels across the population *and* decrease of blood pressures toward normal.[117,118] The general reduction of lead in the environment is desirable, even wonderful.

Lead (and other heavy metals) can settle from the air into our lungs or onto the soil and then gradually emerge in plants … plants that are eaten by animals or humans, concentrating the toxic elements even more. As heavy metals drift into the water supply (including the vast multi-state underground aquafirs, from which all human water sources arise), they concentrate in plants due to watering. And again into our bodies. These are small amounts, coming in daily over long periods of time. But *any* level of exposure is *toxic* as it concentrates into higher and higher levels, because lead goes in easily but comes out only slowly. Other than mercury, lead is among the most prevalent and serious toxic exposures for modern-day humans. Those who have lived through the 20th century (and beyond) have a dramatic need for chelation therapy, to reduce not only lead and mercury levels but those of other toxic heavy metals as well. Quite simply, we have poisoned the planet over the last 60 years. The resulting personal pollution with these toxics is killing us all, some slowly, some more rapidly. And *all* of us are suffering untold sorrows along the way.

Oddly, efforts are *still* continuing at present to remove lead from fuels used in over 2 dozen countries on the planet. Several countries switched in the late 1970s to adding manganese compounds to gasoline in place of lead. Our

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[117] Pirkle JA, Schwartz, et al: The relationship between blood lead levels and blood pressure and its cardiovascular risk implications. *Am J Epidemiol* 121(2):246-258, 1985.
[118] Schwartz J: The relationship between blood lead and blood pressure in the NHANES II survey. *Environ Health Perspect* 78:15-22, 1988.

Environmental Protection Agency (EPA) opposed its addition, citing too many "unknowns" with regard to possible toxicity. Its use was restricted in the United States until the Ethyl Corporation proved that manganese would not impair emissions control systems (forget human beings!). In *19**95***, a United States Appeals Court ruled that the EPA had exceeded its authority when preventing the addition of manganese "MMT," so it became a legal fuel additive here in America. In *19**96***, American scientists *finally* completed the difficult chemical analyses to identify the "combustion products" of manganese used in fuels … and they found them to be, in the opinion of some experts, at least as toxic as lead. Welcome to a wholly ***new*** toxic metal challenge to human survival and health!

Take home message: despite what any government agent or research scientist might say … there is ***no*** clean air, ***no*** clean water, ***no*** clean food.

The Science of Chelation Therapy Is … *Science!*

The inimitable John Wayne was recognized by the United States Congress in 1979 when he was awarded the Congressional Gold Medal. That year brought to a close the era of Wild West movies with the death (from stomach cancer) of "The Duke." An enduring American icon, Wayne had won the 1969 Best Actor Oscar for *True Grit*, a character trait he displayed all the way to the end ten years later. Similarly, heralding a new age for chelation was the 1979 publication of the *first* practical physician's treatise, *The Scientific Basis of EDTA Chelation Therapy,* written by chelation expert Bruce W. Halstead, M. D. He served (among his several governmental appointments) for many years as a definitive consultant in pollution and toxicology to the World Health Organization and the United States Armed Forces, an expert in Asian herbal treatments for modern illnesses, and the founder of the field of marine bio-toxicology. Dr. Halstead summarized a few of the scientific advances over the prior 25 years:

> "Experimentation and usage of EDTA chelation therapy has resulted in the development of techniques for the successful treatment of the catastrophic effects of atherosclerosis involving coronary [heart] artery disease, stroke, senility, early gangrene, essential hypertension, peripheral [leg] vascular occlusive disease, osteoarthritis, and related disorders ..... Clinical studies ... have consistently shown a definite improvement in the circulation of the patient as evidenced by improvement in skin color, improvement of arterial pulsation in the feet, return of normal temperature to the feet, regaining ability to walk long distances comfortably, elimination of anginal [heart chest] pain, improved brain function and improvement of muscle coordination. ...

> Chelation therapy generally results in a significant improvement in coronary [heart] circulation in most cases to the extent that the patient no longer requires the use of nitroglycerin or similar drugs. ... In a large number of cases chelation therapy has been found to improve kidney function, decrease the amount of insulin required by diabetics, and produce significant improvement in arthritis and some cases of Parkinson's disease."[119]

*Remember the **90** number?* Still, few people knew that chelation was available to help them gain life long health. As 1980 dawned, Ted Turner launched CNN / Cable News Network, the first all-news 24-hour television channel. For your future *health*, the real "news" on the horizon was the *first* patient education book on this marvelous chelation treatment, published that year by Dr. Morton Walker, podiatrist and medical author.[120] The internet is now acknowledged by all as the "health information source for the people," much to the distress of doctors trained in illness treatments and not in health preservation. Few people appreciate that these details were ***rarely*** made available to patients in the past. The whole field broke wide open in 1975, when Jonathan V. Wright, M. D., became a monthly "nutritional medicine" columnist for *Prevention Magazine*, leaving there in 1985 to write a similar monthly article for *Let's Live Magazine*, leaving there in 1996 to concentrate fulltime on his splendid and very readable *Nutrition & Healing Newsletter*.[121]

Medicare benefits for our aging population started being paid on July 1, 1966. From onset through 1980, the costs for ***this*** "illness care reform" program explosively ***doubled*** every ***four*** years, recklessly rupturing budget estimates time and again. Early expense projections of "about $*12* billion in 1990" mushroomed to over $***120*** billion when claims were actually paid some 20 years *ago*. By 2031, the 43 million enrollees in 2007 will have mushroomed to an estimated 77 million "senior citizens" as all the Baby Boomers "arrive." Administrators in the past scrambled to control access to services in efforts to contain the budget. Their prior efforts will pale by comparison to those that will be forcefully implemented in **any** "***illness*** care reform" programs of the future. Medicare "fraud" amounts to losses of over $60 *billion* annually. [*Medicaid* expenditures for those in less fortunate circumstances grew from 1990 to 1992 at an average annual rate of *28* per cent,

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[119] Halstead BW: *The Scientific Basis of EDTA Chelation Therapy*. Colton, California: Golden Quill Publishers, 1979. Page 14.

[120] Walker, M: Chelation Therapy: *How to Prevent or Reverse Hardening of the Arteries*. New York, New York: M Evans and Company, Inc., 1980.

[121] For a list of Dr. Wright's bestselling books, go to < http://www.tahoma-clinic.com/JVW_CV.pdf >. To subscribe to his monthly newsletter, go to < http://www.wrightnewsletter.com/healthy/subscribe.html >.

mushrooming to $*113* billion.] Medicare and Medicaid costs shattered all budget "projections" partly due to wonderful advances in medical technology since 1966 – heart surgery, advanced tests, better antibiotics, new drug treatments for high blood pressure, arthritis, and gut diseases, among many others. Today, we simply assume the availability of technology for cure or control of many health problems, not realizing how recently that ground breaking progress has been made. C. Everett Koop, M. D., who from 1982 through 1989 served as Reagan's outspoken Surgeon General of the United States, recounted his pioneering contributions in the 1950s and -60s with these telling perspectives:

> " … [E]ach day of those early years in pediatric surgery I felt I was on the cutting edge. Some of the surgical problems that landed on the operating table at Children's [Hospital of Philadelphia, Pennsylvania] had not even been named. Many of the operations I performed had never been done before. It was an exuberant feeling, but also a little scary. At times I was troubled by fears that I wasn't doing things the right way, that I would have regrets, or that someone else had performed a certain procedure successfully but had never bothered to write it up for the medical journals, or if they had I couldn't find it."[122]

Countless adults are now alive because surgeons were sharing as they developed new aggressive procedures "back then": Koop was *first* editor of the *Journal of Pediatric Surgery*, founded in 19*66*. You might have thought it had been around "*forever*," right?

Would restricting your access to "the newest" care be the easiest way to limit expenses associated with advanced surgical and medical treatments in any future "***illness*** care reform" plan? Senseless limitations on insurance and Medicare reimbursement for chelation therapy have been very effective in keeping this miraculous "new" treatment from being readily available – since thinking "out of the box" isn't politically correct. Should you take little comfort in reassurances from any politician regarding *your* future healthcare? Recall that *protections* ***guaranteed*** in the preamble to the Act of Congress that established the Medicare program were abandoned very early on:

> "Nothing in this title shall be construed to authorize any Federal officer or employee to *exercise any supervision or control over the practice of medicine* or the manner in which medical services are provided …"[123]

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[122] C. Everett Koop article at wikipedia. Available at < http://en.wikipedia.org/wiki/C._Everett_Koop >, accessed August 8, 2009.

[123] (Review of) Medicare Act (1965), available at < http://www.enotes.com/major-acts-congress/medicare-act >, accessed July 14, 2009. Emphasis added.

While the American economy was crashing from Medicare costs (despite more and more restrictive rules) and other federal spending in 1980 and while bank loan interest rates passed *20* per cent, the newest diversion – *Pac-Man* – became the most popular arcade game of all time. Despite our fascination with entertainment, changes in the political climate dominated our attention as the former Hollywood star-turned-Governor of California, Republican Ronald Reagan, defeated the one-term Democratic President Jimmy Carter.

The politics of medicine were in a state of flux as well, with some ***wins*** finally emerging for chelation therapy. Physicians offering these treatments had banded together in 1973, establishing the American Academy of Medical Preventics (AAMPs, later [1986] called ACAM, the American College for Advancement in Medicine) so they could exchange ideas on improving chelation results. One member, Robert J. Rogers, M. D., pursued by the state medical board, appealed his case to the Florida Supreme Court. He won and established clearly his *right* to practice chelation therapy for cardiovascular disease. In its opinion, the highest State court offered this:

> "...[We] affirm the result of the district court's decision because, under the particular facts of this case, it appears that the action of the Board of Medical Examiners restraining Dr. Rogers from further utilization of chelation treatment was an *arbitrary and unreasonable exercise of the state's police power*. .....
>
> "Although the state has the power to regulate the practice of medicine for the benefit of the public health and welfare, this power is not unrestricted. ..... The record before us *fails to evidence harmfulness* as a reasonable basis for the Board's action in restricting use of this treatment. ... Furthermore, the evidence demonstrates that *no fraud or deception* was exercised by Dr. Rogers upon his patients who were fully informed of the nature of the procedure and the possibility of no improvement. Sanctions were imposed against Dr. Rogers because *he used a modality not accepted by the Board* as having been proven effective, not because the Board found that the treatment was harmful or that Dr. Rogers had defrauded his patients into believing that chelation treatment was a cure for their conditions. The Board's findings do not support a conclusion of quackery ..."[124]

Time after time, physicians have challenged *unreasonable* restraints and, thankfully, more recently have found protection from impartial judges. Despite the

[124] Decision No. 56.096, rendered on September 4, 1980, in the matter of State Board of Medical Examiners of Florida, Appellant, vs. Robert J. Rogers, M. D., Appellee. Emphases added.

court's encouraging findings in Dr. Rogers' precedent-setting case, Medicare has carefully *restricted* the practice of *that* kind of "alternative" medicine, where thinking "outside the box" often produces better results than conventional drugs or surgery! Medicare and insurance reimbursement issues aside, the Rogers decision was a first: No longer would a State or a federal agency casually "pursue and chew" a physician offering the chelation alternative and be able to expect rubber-stamp success in the courts, devouring its prey with no regard to the limits of law.

PART FOUR:
EVIDENCE-BASED CHELATION THERAPY

Symbolic of an emerging era in *television* education, was the premier of the wildly popular Public Broadcasting System (PBS) series *Sesame Street* (Elmo, Cookie Monster, others) in 1969: "Our program today is brought to you by the number ***'one.'***" Abbott Laboratories *could* have had a number one bestseller forever, but they had stopped funding research studies because the patent protection for EDTA expired in 1969. Unexpectedly – but another wonderful start! – personally-funded research projects began to be reported by chelation specialists in larger clinics. They provided more of a solid evidence base for the practice of chelation therapy. The 1980 Nobel Prize in Medicine was awarded to three separate research scientists – Drs. Snell, Dausset and Benacerraf – whose independent work was on a chromosome gene area called the "MHC system." This "Major Histocompatibility Complex" allows the immune defense system to distinguish between ***normal*** cells of the body that should not be attacked and ***changed*** cells (such as those infected by viruses or becoming cancerous) that must be eliminated because they threaten the integrity of the organism. Their scientific research illustrates the *complexity* of "modern medical approaches": every little detail is investigated, but the big picture – assuring *YOU* life long health – seems to gets missed in the process.

While nowhere near as "sophisticated" as this Nobel Prize research, the clinical findings published from Switzerland in 1980 offer ***you*** a very real chance to be *spared* from suffering with cancer. The remarkably simple, safe, effective, and affordable treatment studied by Walter Blumer and T. Reich was startlingly successful. What was it? Sure, you guessed it! They showed a statistically significant ***90*** per cent reduction in *occurrence of* ***cancer*** in a group of 59 EDTA ***chelation*** patients studied over a ***10-year*** *follow-up*, when compared to 231 control

patients.[125] None of the study subjects started with detectable cancer. Yes, we should continue to study how the immune system works. But in the meantime, would you want to choose a treatment available right ***now***, one that could dramatically reduce ***your*** risks of dying from cancer?

Was this unexpected result *real?* Would it last? Controls and treated patients lived in the same neighborhood, adjacent to a heavily traveled highway in a small Swiss city. Both groups were exposed to the same amount of lead from automobile exhaust, industrial pollution and other carcinogens (cancer-causing chemicals). Exposure to carcinogens was no greater for the studied population than exists in most other *metropolitan* areas throughout the world. Drs. Blumer and Cranton subsequently updated this report with an ***18-year*** *follow-up* in 1989, showing that only *1* of 59 treated patients (1.7 per cent) had died of cancer while 30 of 172 non-treated control subjects (17.6 per cent) had *died* of cancer – a *90 per cent reduction* in mortality![126] Remember the ***90*** number? Blumer's work – in a population growing older, where cancer should be *increasing* with age – offers a whole new way of looking at chelation therapy and *90 per cent improvement!*

Slowing and Reversing *Killer* Blood Vessel Diseases

Immune system function was more than just the subject of a Nobel Prize at that time. Diseases and death from failing defenses were about to emerge as major concerns for the next several decades. In 1981, The Centers for Disease Control and Prevention reported that 5 homosexual men in Los Angeles, California, were diagnosed with a rare form of pneumonia seen only in patients with weakened immune systems. These were the first recognized and reported cases of AIDS (Acquired Immune Deficiency Syndrome). While creating fear of the unknown, AIDS/HIV holds much less worry for most people than the prospect of suffering with a heart attack or stroke, since these two still account for death in about *two-thirds* of Americans. In two landmark studies, California chelation specialist, H. Richard Casdorph, M. D., reported on his small series of patients, documenting effectiveness of chelation therapy in arteriosclerotic (hardened artery) heart disease and in brain blood flow disorders.[127,128] Both of these studies showed significant improvement in arterial blood flow. Patients with narrowing of their heart arteries

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[125] Blumer W and Reich T: Leaded gasoline—a cause of cancer. *Environmental International* 3:465-471, 1980.
[126] Blumer W and Cranton EM: Ninety percent reduction in cancer mortality after chelation therapy with EDTA. *J Adv Med* 2(1-2):183-188, 1989.
[127] Casdorph HR: EDTA chelation therapy - efficacy in arteriosclerotic heart disease. *J Holistic Med* 3(2):53-59, 1981.
[128] Casdorph HR: EDTA chelation therapy, II. Efficacy in brain disorders. *J Holistic Med* 3(2):101-117, 1981.

felt relief due in part to an improvement in heart pumping efficiency, measured as an increase in "ejection fraction" (volume of blood pumped to the body with each contraction). Leg pains with walking and gangrene leading to amputation strike down millions of people worldwide. Casdorph and Charles Farr, M. D., Ph. D., used chelation treatments to save the legs on four patients that had been referred for amputation due to artery blockage conditions.[129]

The French joyfully say *"Vive la différence"* when speaking of the contrasts between the sexes. Recognizing the equal regard Americans should have for the contributions made by both, President Ronald Reagan in 1981 appointed the first woman as a justice of the Supreme Court, Sandra Day O'Connor. Some puzzling differences between the sexes, though, are glaring – such as the ***decreased*** incidence of (and death from) heart and blood vessel diseases in ***pre***menopausal women (whether both ovaries slowly cease working or are removed at earlier surgery) compared to their counterparts, age-matched men. Speculation regarding why women are *"protected"* before they cease having periods has long centered on their levels of iron.[130] J. L. Sullivan wrote a provocative series, suggesting that excessive iron in the body (as in men, who do not have periods) could contribute to increased free radical formation and, therefore, to an increase in atherosclerotic hardening of arteries.[131,132,133,134] Link and colleagues further investigated these ideas with particular regard to heart disease.[135] Rahko and his group probed further, finding that severely impaired heart muscle function ("cardiomyopathy") could be related to iron overload in the tissues … and could be *reversed* by chelation therapy![136]

All these findings led chelation specialist Charles Farr, M. D., Ph. D., to speculate that removal abnormal/toxic iron concentrations, reducing the production of free radicals in tissues, might be a major way by which chelation creates such

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[129] Casdorph HR and Farr CH: EDTA chelation therapy, III: treatment of peripheral arterial occlusion, an alternative to amputation. *J Holistic Med* 5(1):3-15, 1983.

[130] Gordon T, Kannel WB, Hjortland MC, et al. Menopause and coronary heart disease. The Framingham Study. *Ann Intern Med* 1978;89:157-161.

[131] Sullivan JL: Iron and the sex difference in heart disease risk. *Lancet* 1:1293-1294, 1981.

[132] Sullivan JL: The sex differences in ischemic heart disease. *Perspectives in Biolog Med* 26:657-671, 1983.

[133] Sullivan JL: Sex, iron, and heart disease. *Lancet* 2:1162, 1986.

[134] Sullivan JL: The iron paradigm of ischemic heart disease. *Am Heart J* 117:1177-1188, 1989.

[135] Link G, Pinson A and Hershko C: Heart cells in culture: a model of iron overload and chelation. *J Lab Clin Med* 106(2):147-153, 1985.

[136] Rahko PS, Salerni R and Uretsky BF: Successful reversal by chelation therapy of congestive cardiomyopathy due to iron overload. *J Amer Coll Cardiol* 8:436-440, 1986.

profound clinical improvements.[137] Charles J. Rudolph, D. O., and associates went on to confirm iron reduction by chelation as a potential mechanism to explain reduction of inflammation (oxidation/free radical injury) in chronic diseases:

> "One hundred twenty-two patients suffering from various chronic degenerative disorders were evaluated objectively for fasting serum iron values before and after EDTA chelation plus multivitamin mineral (excluding iron) supplementation. After 30 intravenous 3 gram treatments of EDTA, average serum iron levels dropped 17.5% ($p<0.001$). Abnormally high initial iron [blood levels] decreased 43.1% ($p<0.001$), while low initial iron increased 41% ($p<0.01$)."[138]

In the 1964 Soffer monograph, Rubin had summarized then-recent research showing EDTA was successful in helping disordered iron metabolism.[139] What is remarkable is how far into the future was the vision of these early investigators. Bit by bit, the many reasons ***why*** chelation therapy is ***so stunningly effective in so many disease conditions*** – *remember the* ***90*** *number?* – were becoming much clearer. The year 1992 was to reveal a simple way in which iron status could be used reliably to predict heart attack risk … *stay tuned!*

Better Brain Health … Actually, Chelation Therapy Improves *Many* Degenerative Illnesses

Iron wasn't the only common mineral implicated in serious human illness. In the early 1970s, D. R. Crapper-McLaughlin suggested that certain dementias might be related to aluminum-related brain degeneration and that chelation therapy (with desferoxamine [DFO, Desferal, deferoxamine, desferrioxamine], a chelator fond of aluminum and excess iron) might assist in treating Alzheimer's disease.[140,141,142,143] Of concern is the ease with which aluminum creates cross-linkages, giving further weight to Johan Bjorksten's proposal of the Cross-Linkage

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[137] Farr CH: Possible Therapeutic Value of Intravenous Hydrogen Peroxide. *Plzen Lek Sborn*. Supp 56:171-173, 1988.

[138] Rudolph CJ, McDonagh EW and Barber RK: The effect of EDTA chelation on serum iron. *J Adv Med* 4:39-45, 1991.

[139] Rubin M: The significance of chelation for clinical problems of iron metabolism, in Soffer A, Chenoweth M, Eichhorn G, et al: *Chelation Therapy*. Springfield, Illinois: Charles C Thomas. P 66-122, 1964.

[140] Crapper DR, Krishman SS and Dalton AJ: Brain aluminum distribution in Alzheimer's disease and experimental neurofibrillary degeneration. *Science* 180:511, 1973.

[141] Crapper DR, Krishnan SS, Quittkat S: Aluminium, neurofibrillary degeneration and Alzheimer's disease. *Brain* 99:67-80, 1976.

[142] Crapper DR, Kalrik S and DeBoni U: Aluminum and other metals in senile (Alzheimer) dementia, in: *Alzheimer's Disease: Senile Dementia and Related Disorders*, by Katzman R, Terry RD and Bick KL (eds.). New York, New York: Raven Press, 1978.

[143] Perl DP: Pathologic associations of aluminum in Alzheimer's disease, in: B Reisberg (ed.): *Alzheimer's Disease*. New York. New York: Macmillan. p116-121, 1983.

Theory of Aging.[144] Teasing out the reasons behind development of degenerative diseases[145] has been far more complicated than the happily chance discovery of a safe and effective treatment for many of them … namely chelation therapy.

Pendergrass and coworkers showed mercury to be devastating to brain tissue, causing changes looking very much like Alzheimer's.[146] You might conclude that only lead, aluminum, and mercury are important only in brain degeneration. So you need to know that a mountain of scientific studies have shown that mercury – long known to be a potent brain/nerve toxin – can also be a major contributor to failing heart function. Frustaci and colleagues showed mercury levels 22,000 times higher in "idiopathic dilated cardiomyopathy" (a particular form of heart failure) than in "normal" hearts.[147] (They found antimony to be 12,000 times higher than in "normals." As a research control, they took skeletal muscle samples from their heart patients; only the heart muscle biopsies showed the dramatic toxic metal elevations.) Lorsheider and Vimy raised a fundamental question about Frustaci's findings of elevated mercury in "idiopathic dilated cardiomyopathy," where "*idiopathic*" means "we don't know what seems to be an obscure cause" for this heart muscle enlargement disorder. Their question: since studies clearly establish that the largest source of mercury exposure is from dental amalgams (so-called "silver" fillings), could Frustaci inquire and report on the dental amalgam history of his patient group?[148] In other words … maybe we now *do know* the cause of this dilated cardiomyopathy!

Many remember 1982 as the year when soon-to-be-legendary Michael Jackson's "*Thriller*" album debuted, selling 20 million albums to become the largest selling record ever. Singer/actress Dolly Parton was named Top Female Box Office Star in 1981 ***and*** 1982. "*The Best Little Whorehouse in Texas*," in 1982, scored two Golden Globe nominations and was one of her major movie hits. Parton's career has spanned 45 years and produced an incredible 25 No. 1 singles and a record-setting 41 Top 10 Country albums. Few know that 1982 also began

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[144] Bjorksten J, Sundholm F and Tenhun H: Aging, crosslinking and Alzheimer's disease. *Rejuvenation* 12:3-4, 43-46, 1984.

[145] Demopoulos HB, Flamm ES, Seligman ML, et al. Membrane perturbations in central nervous system injury: theoretical basis for free radical damage and a review of the experimental data. In: Popp AJ, et al., eds. *Neural Trauma*. New York, New York: Raven Press; 1979:63-78.

[146] Pendergrass JC, Haley BE, Vimy MJ, et al. Mercury vapor inhalation inhibits binding of GTP to tubulin in rat brain: similarity to a molecular lesion in Alzheimer diseased brain. *Neurotoxicology* 1997;18:315-324.

[147] Frustaci A, Magnavita N, Chimenti C, et al. Marked elevation of myocardial trace elements in idiopathic dilated cardiomyopathy compared with secondary cardiac dysfunction. *J Am Coll Cardiol* 1999;33:1578-158.

[148] Lorsheider F and Vimy M. Mercury and Idiopathic Dilated Cardiomyopathy: Letter to the editor. *J Am Coll Cardiol* 2000;35:819.

the publication of one of the *longest series of studies* reporting on the improvements produced by chelation therapy. Kansas City, Missouri, chelation specialists Edward W. McDonagh, D. O., and Charles J. Rudolph, D. O., Ph. D., were joined by research professional Emanuel Cheraskin, M. D., D. M. D., to publish ***31*** papers documenting their clinical practice experience. Topics included significant improvements with blood sugar, cholesterol, HDL (heart protective) cholesterol, triglycerides, kidney function and serum creatinine levels, artery blockage disease (even of the aorta), severe heart artery blockage, blockage of neck carotid arteries, hardening of the arteries, platelet clotting functions, fatigue, pulse rate and blood pressure, serum calcium and iron levels, trace element patterns in degenerative diseases, psychological status, and general "clinical change" (improvements) observed in chelation patients. Validity to the McDonagh/Rudolph/Cheraskin series comes easily from the extensive review and update of chelating agents in medicine authored in 1983 by chelation expert and textbook editor Bruce W. Halstead, M. D.[149] A complete listing of the dozens of persuasive articles by the Kansas City specialists is available online at "http://www.mcdonaghmed.com/abstracts.htm."

While the McDonagh-Rudolph medical office was amassing a mountain of evidence regarding benefits available from chelation through the 1980s, Pro Football Hall of Fame quarterback icon Joe Montana clearly topped the peak by starting four Super Bowl games for the San Francisco 49ers … and they *won* all four. Perhaps of more interest to many *readers* is the demonstrated ***reversal*** of ***macular degeneration*** (eye vision deterioration) reported by McDonagh and Rudolph's group in 1994. Their evidence included retina photographs, documenting improvement consistent with increased circulation to the eyes.[150] Other chelation specialists have reported similar reversals of macular degeneration over the past 20+ years.[151] Complementing these general clinical studies was the report by Charles Farr, M. D., Ph. D., of Oklahoma, showing a 30 to 50 per cent reduction of calcium concentrated in aging skin (with documented reduction of wrinkles and increase in elasticity skin tone) as a result of EDTA chelation treatments.[152]

Walking *Farther*, Without Leg Pains or Chest Pains

[149] Williams DR and Halstead BW: Chelating agents in medicine. *J Toxicol Clin Toxicol* 19(10):1081-1115, 1983.
[150] Rudolph CJ, Samuels RT and McDonagh EW: Visual field evidence of macular degeneration reversal using a combination of EDTA and multiple vitamin and trace mineral therapy. *J Adv Med* 4(7):203-212, 1994.
[151] Trowbridge JP and Walker M. *Chelation Therapy: The Key to Unclogging Your Arteries, Improving Oxygenation, Treating Vision Problems*. New York, New York: Devin-Adair. 1985.
[152] Farr, C. American Academy of Medical Preventics (AAMP, later ACAM) (Presentation). late 1980s.

At the University of Utah in 1982, 61-year-old retired dentist Barney Clark became the first person to receive a "permanent" artificial heart. No, unfortunately, he did *not* receive chelation to help with his heart disease before (or even after) the drastic surgical procedure, and he lived for only 112 days with the device. Many frustrated patients (and doctors) have offered their criticism that "modern" medicine remains solidly preoccupied only with (expensive) "high-tech" solutions rather than exploring simpler, basic, physiologic approaches to restoring and maintaining life long health, especially with heart and blood vessel diseases.

Despite the *proven* effectiveness of chelation therapy in patients treated with leg artery disease – remember the ***90*** number? – a new **drug** was reported in 1982 to improve walking distance without pain by (hold your breath … drum roll … bugles blaring … are you ready?) a ***whopping … 24 per cent!*** That means a patient who could walk *100* yards before the onset of pain could then walk a startling *124* yards after just a few months of taking prescription *Trental*.[153] Four hundred milligram tablets can be purchased *today* (2009) from Canadian pharmacies for "only" US$62.00 for a 20- to 30-day supply (generic cost is about 1/3 less). Consider that chelation patients often enjoy increases in pain-free walking distances of up to ***3,000 to 5,000 per cent***. Which treatment – *Trental* or chelation – is a "better bargain"? ***You decide.*** Trick question: ***Which*** treatment do *you* believe will be "approved" and "covered" under any upcoming "***illness*** care reform" programs?

The number ***90*** keeps coming up … but ***is it real?*** In 1988, the United States Air Force 'fessed up to reality and finally (and unexpectedly) admitted publicly the existence of the F-117 *Nighthawk*, the world's most effective (and powerful) stealth ground attack aircraft. That same year brought the unexpected publication of the largest study to date of what appears to be the world's most effective treatment for heart and blood vessel diseases, chelation therapy. Efrain Olszewer, M. D., of Brazil, and James P. Carter, M. D., Dr. P. H. (Doctor of Public Health), Head of the Section on Nutrition at Tulane University School of Public Health and Tropical Medicine in New Orleans, Louisiana, reported on a 28-month retrospective analysis of ***2,870*** patients with documented atherosclerosis blockage and other degenerative, age-associated diseases.[154] They treated with intravenous EDTA according to then-recommended protocols. The results?

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[153] Porter JM, Cutler BS, et al: Pentoxifylline (Trental) efficacy in the treatment of intermittent claudication. *Am Heart J* 1:104, 1982.

[154] Olszewer E and Carter JP: EDTA chelation therapy: a retrospective study of 2,870 patients. *Medical Hypoth* 27:41-49, 1988.

Marked improvement in 76.9 per cent and ***good*** improvement in 17 per cent (totaling ***94*** per cent) of treated patients with ischemic (blockage) coronary (**heart**) artery disease.

Marked improvement in 91 per cent and ***good*** improvement in 8 per cent (totaling ***99*** per cent) of treated patients with peripheral (**leg**) vascular disease and intermittent claudication (pain and/or cramps with walking).

Marked improvement in 24 per cent and ***good*** improvement in 30 per cent (totaling 54 per cent) of treated patients with cerebrovascular (**brain** blood vessel) and other degenerative cerebral (brain) diseases.

Overall, ***almost 90 per cent*** of the patients showed ***good to excellent improvement*** as measured by walking distance, EKG, and Doppler (ultrasound testing) changes. *Remember the **90** number?*

While America's favorite *Beach Boys* were performing to a boisterous crowd of one million fans in Philadelphia, Pennsylvania, on the afternoon of July 4, 1985, and then to 750,000 later that evening on the National Mall in Washington, D. C., events in the science of chelation were much more subdued. Professor A. Zechmeister from Czechoslovakia presented data to the American Academy of Medical Preventics (AAMP) spring conference in the national capital in 1985, detailing his studies in mini pigs ("pot-bellies," weighing only 60 to 300 pounds). Their blood vessels are similar to humans in the way they can develop artery hardening and blockage. (AAMP later changed its name to the American College for Advancement in Medicine, ACAM) Zechmeister demonstrated "microcalcification" (tiny deposit) patterns in peripheral (leg and arm) arteries, "macrocalcification" (clump deposit) patterns in cerebral (brain) arteries, and a *mixture* of the two patterns in coronary (heart) arteries. These data conform to – and appear to explain – observations (in clinical practice, by chelation experts and as documented in the Olszewer study and others) that peripheral arterial occlusive (leg blockage) disease responds more rapidly and to a greater extent than do coronary occlusive (heart blockage) changes, while cerebral occlusive (brain blockage) changes respond most slowly and least well.

The Doctor's Job Is to Heal … *What We Do Works!*

Given the startling evidence of overwhelming success from EDTA chelation in the treatment of deadly and debilitating diseases, the insistent opposition offered by "conventional" medicine and surgery specialists remains puzzling at best. New

Zealand physicians offered their frustrated perspectives in a letter to the editor in the respected *New Zealand of Medicine*:

> "Sir, – 'The Physician has but a single task: to cure; and if he succeeds, it matters not a whit by what means he has succeeded.' Hippocrates 400 B. C. ..... Diabetics are justifiably angry when they realise that they may not have had to lose a foot or leg after chelation has reversed the ischaemic [starving for blood flow] changes in the remaining limb. Clinical observation has always preceded published scientific proof and medicine is still hopefully an art rather than being part of a protectionist industry."[155]

These comments are all the more poignant when you consider that surgery *itself* can be life threatening, particularly in aging patients. Open-heart (bypass) surgery in octogenarians (age 80 to 89) results in about one-half of the patients still alive at one year post-operatively – far less than would be expected without surgical intervention. Coronary (heart) artery bypass surgery has an average mortality ranging from 4 to 10 per cent, with mortality highest among older patients.[156]

The world geo-political situation changed dramatically in 1989 with the fall of the Berlin wall, paving the way for the soon-to-come elimination of socialism in the Soviet Union. And the wall of silence that critics had long hoped to erect around the practice of chelation therapy fell forever when the *Journal of Advancement in Medicine* published in 1989 a special issue edited by Elmer M. Cranton, M. D.: *A Textbook on EDTA Chelation Therapy*.[157] The volume is a collection of key papers published over the previous 10 years, appending as well the ACAM-endorsed (American College for Advancement in Medicine) protocol for safe and effective administration of EDTA. When administered in compliance with the principles embodied in the published protocol, EDTA chelation is both effective *and* safe, with a mortality rate that approaches *zero* and with minimal morbidity.

While Americans in 1989 gathered in their dens to casually enjoy "*The Cosby Show*" on TV, chelation specialists Elmer M. Cranton and James P. Frackelton pursued their intensive physician-training efforts to make this miraculous chelation treatment more available to general public suffering and dying from heart attacks and strokes. Their extensive review of the "*Current status of EDTA chelation therapy in occlusive arterial disease*" stated the facts simply:

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[155] Godfrey ME, Agnihotri R, and Strauss A: Chelation and arteriosclerosis. *NZ Med J* 101:122, 1988.
[156] Edmunds LH, Stephenson LW, et al: Open-heart surgery in octogenarians. *N Engl J Med* 319:131-136, 1988.
[157] Cranton EM, ed.: *J Adv Med* 2(1-2):460, 1989.

> "Benefits of intravenous chelation therapy are unknown to most physicians. A series of circumstances led to the cessation of investigations and the lack of acceptance of an effective non-invasive therapy, which is less expensive and safer than bypass surgery. ... This review supports the use of EDTA in treatment of occlusive arterial disease and is a companion reference to reports of a series of highly significant controlled studies showing the safety and effectiveness of this therapy."[158]

"Occlusive arterial disease" can be simplified to two key features that restrict flow:[159]

first, progressive deposition of debris (cholesterol, fibers, cells, calcium) that narrows the inside dimensions of the artery over many years and

second, sudden and severe interruption of blood flow at the narrowed point.

Platelet "plugs" cause the *sudden* blockages (occlusions) and blood "clots" that result in "acute coronary syndrome" (ACS, heart attack), "cerebrovascular accident" (CVA, stroke, *and* TIA, "come-and-go-stroke"), and "gangrene" (dead tissue). Experts propose that chelation reduces free radical and other chemical injury patterns[160] to the cells lining the inside of each artery, reducing the accumulation of debris and blockage.[161] Research by chelation experts George Kindness, M. D., and James P. Frackelton, M. D., showed that EDTA significantly blocks or slows the aggregation (jamming together, to form plugs) of human platelets in the test tube. Chelation treatment also extends the partial thromboplastin time, a laboratory measure of blood clotting.[162] Their studies were confirmed by McDonagh's group (1990) and by Soviet scientists A. Suvorov and R. A. Marksoyan in earlier and later reports.[163,164]

Irving Berlin, the most celebrated composer and lyricist of the 20th century, died in 1989 at the age of 101. He is remembered for hundreds of hits, including

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[158] Cranton EM and Frackelton JP: Current status of EDTA chelation therapy in occlusive arterial disease. *J Adv Med* 2:107-119, 1989.

[159] Much more detailed review at Wissler RW: Principles of the pathogenesis of atherosclerosis. In: Braunwald E, ed. *Heart Disease*. Philadelphia, Pennysylvania: W. B. Saunders Co., 1980:1221-1236.

[160] Morel DW, Hessler JR, Chisolm GM. Low-density lipoprotein cytotoxicity induced by free radical peroxidation of lipid. *Journal of Lipid Research* 1983;24:1070-1076.

[161] Mechanisms of lipid peroxidation damage addressed at Tappel AL. Lipid peroxidation damage to cell components. *Fed Proc* 1973;32:1870-1874.

[162] Kindness G and Frackelton JP: Effect of ethylene diamine tetraacetic (EDTA) on platelet aggregation in human blood. *J Adv Med* 2(4):519-530, 1989.

[163] Suvorov A and Marksoyan RA: The mechanisms of action of EDTA on reducing platelet aggregation. *J Mol Cell Cardiol* 9:897-908, 1981.

[164] Suvorov A and Marksoyan RA: Some mechanisms of EDTA effect on platelet aggregation. *Byull Eksp Biol Med* (USSR) 91(5):587-590, 1991.

"*White Christmas*," sung by Bing Crosby and which sold over 30 million copies when released as a record single. "Staying power" certainly was Berlin's strong suit, in entertainment and in life itself. Chelation therapy provides "staying power" for patients: they often return to work and more active lifestyles after having earlier resigned themselves to dwindling disability, generally after hearing ominous and discouraging predictions from their conventional physicians. Dutch cardiovascular surgeon Peter J. van der Schaar, M. D., (who trained in Houston, Texas, with Dr. Denton Cooley) reported *significant* improvements in exercise tolerance in 111 patients studied before and after 25 EDTA infusions. "Double- and triple-product measurements" (yes, fancy statistics) on treadmill (stress) testing uniformly improved in patients with blood vessel diseases, whether coronary (heart) artery disease, peripheral (leg) vascular disease, or cerebrovascular (brain) disease.[165] Remember the ***90*** number?

"Complementary," "Alternative," "Integrative" Medicine Gains Recognition

In 1990, the first McDonald's opened in Moscow, Russia. The Kremlin bosses might have denied their business permit if they had first read *Dr. Atkins' Health Revolution: How Complementary Medicine Can Extend Your Life*[166], published that year. This pinnacle book by chelation expert Robert C. Atkins, M. D., long a popular radio host and bestselling author, carefully and clearly reviews many of the diagnostic and treatment concepts involved in "complementary" (also called "alternative" or "integrative") medicine. As testimony to the realization that non-conventional technologies were coming into wider acceptance, chelation specialist Robert J. Rowen, M. D., persuaded the Alaska State Legislature in 1990 to pass a "freedom of choice in health care" law. This was the very *first* guarantee that physicians practicing "complementary medicine" could no longer be brought up on administrative, civil, or criminal charges *simply because* they were practicing differently than the conventional standard. Other states have slowly begun to follow suit. In 1993, Governor Walter Hickel appointed Dr. Rowen to serve on the Alaska State Medical Board.

The Human Genome Project, to map the sequences of the genetic code in the 25,000 human chromosome genes, was founded in 1990. The field of genetic

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[165] van der Schaar PJ: Brief communication: exercise tolerance tests in chelation therapy. *J Adv Med* 2(4):563-566, 1989.

[166] Atkins RC: *Dr. Atkins' Health Revolution: How Complementary Medicine Can Extend Your Life*. New York, New York: Bantam Books, 1990.

medicine jumped forward in 2003, when sequencing the code was complete – 2 years early and under-budget! While useful high-tech treatments will eventually come from this effort, more present interest to complementary medicine physicians was the formation, in 1990, of the Fellowship recognition program by the American College for Advancement in Medicine. The designation "FACAM" (Fellow of ACAM) is bestowed by the board of directors to honor those physicians who have made *exemplary* scientific contributions to the field of "preventive medicine" and whose leadership efforts have advanced the ACAM organization as well.

Other organizations have been established over the years, and their contributions should be noted as well. The American Board of Chelation Therapy (ABCT) was formed in 1983 by leading chelation experts to provide, develop, and promulgate standards for training and safe, effective clinical practice. The designation "Diplomate" is bestowed on those who have completed basic and advanced education, testing, training, and clinical experience in the administration and monitoring of EDTA intravenous infusions. "Diplomate-Candidate" is used to identify those who have embarked on the training and testing process to become recognized as a specialist. In 2003, the ABCT board recognized that "clinical metal toxicology" is more than just "chelation therapy" but rather a deeper understanding of how people get sick and of what legitimately can be done to help them regain better health. Accordingly, the name was changed to the American Board of Clinical Metal Toxicology (ABCMT). Physicians around the *world* are "certified" as specialists (Diplomates) by the *International* Board of Clinical Metal Toxicology. The board of directors of ABCMT has designated a dozen distinguished experts to oversee conduct of the Diplomate training and testing program in America.

The Great Lakes Association of Clinical Medicine was formed in 1983 by participants in educational seminars who had come together informally over the prior several years. In 1996, it was renamed the Great Lakes College of Clinical Medicine. In 2000, it became the International College of Integrative Medicine (ICIM). The International Society of Chelation Technicians (ISCT) was founded in 1983 to provide standards for training, testing, and certifying para-professional office medical personnel in the administration of EDTA chelation therapy, so that these staff members could better serve the needs of patients in chelation physician offices.

PART FIVE:
SHARP CRITICISM DESPITE STELLAR RESULTS

The Hubble Space Telescope was deployed by Space Shuttle *Discovery* in 1990, to peer deeply into the secrets of the universe. The pictures have been nothing short of spectacular. Closer to home but looking deeply into the secrets of degenerative disease, chelation specialists Efrain Olszewer, M. D., F. C. Sabbag, M. D., and James P. Carter, M. D., Dr. P. H. (Doctor of Public Health), reported the *first* "double-blind placebo-controlled" study published in a *major* peer-reviewed medical journal, the *Journal of the National Medical Association*.[167] This monumental article details the effectiveness of EDTA chelation for peripheral (leg) vascular disease. Interestingly, publication of their clinical research was *refused* by several major journals, despite the repeated insistence from the National Institutes of Health, the Food and Drug Administration, medical schools, and medical associations that "further study is needed to determine whether chelation therapy is effective." The doctors originally planned a series of 20 infusions, either chelation treatment OR a "non-treatment (placebo)" solution with magnesium - B-complex - vitamin C - Ringer's lactate, given in "double-blind" fashion (neither physician nor patient knows whether the infusion is "treatment" or "placebo"). Ten male patients were selected with significant peripheral vascular disease. These 41 to 53 year-old men had diabetes or atherosclerosis, aggravated by prior smoking, with intermittent claudication (leg pains with walking). The 5 treatment group patients received 1.5 grams (10 ml, *half* the "usual" dose then popular) of EDTA added to the base solution; the 5 "control" patients received distilled water added to the base solution.

After just *10* infusions, half the patients were showing *obvious* improvement in both walking distance and ankle/arm blood pressure measurements related to blood flow. The physicians, faced with a clear positive benefit in exactly half of the patients, took the unusual but ethical move (because the differences among study subjects were so striking) to "break the blind" (determine which subjects were receiving the treatment solution). *ALL* improving patients were in the *treatment* group. The physicians chose to conclude the study in "single-blind" fashion (the patients do not know which solution they are receiving), with the placebo control group to receive EDTA solution as their *last* 10 treatments as a "crossover design." The original treatment group went on to complete their planned total of 20 EDTA chelation infusions. The crossover patients, originally

[167] Olszewer E, Sabbag FC, and Carter JP: A pilot double-blind study of sodium-magnesium EDTA in peripheral vascular disease. *J Natl Med Assoc* 82(3):173-177, 1990.

showing *no* improvement with their first 10 (placebo) *non*-treatments, showed the *same* level of measured improvements in their 10 *final* (*treatment*) infusions (*with* EDTA) as the doctors had earlier seen in the *treated* group in *their first 10* treatment infusions. The original treatment group completed their expected total of 20 EDTA infusions, and they clinically improved even *more* than was seen at the end of their first 10 treatments.

How to Lie with Statistics[168] – a "great" book written in 1954 by Darrell Huff – might have been read by all pharmaceutical company marketing departments. Indeed, American humorist Mark Twain popularized this observation by British prime minister Benjamin Disraeli: "There are three kinds of lies: lies, damned lies, and statistics."[169] Mike Adams, the Health Ranger, *NaturalNews Editor*, had this to offer in 2006 about how to *confuse* physicians and potential patients:

> "Which drug would you rather take? One that reduces your risk of cancer by 50 percent, or another drug that only eliminates cancer in one out of 100 people? Most people would choose the drug that reduces their risk of cancer by 50 percent, but the fact is, both of these numbers refer to the same drug. They're just two different ways of looking at the same statistic. One way is called relative risk; the other way is absolute risk. ….. When you look at drug claims, especially new miracle-sounding claims on drugs like *Herceptin*, be aware that these statistics are routinely given as relative statistics, not absolute. The numbers are distorted to make the drugs look more effective than they really are. ….. At the same time, when conventional medicine promoters want to discredit a natural substance, an herbal remedy or the effects of nutrition on health, they always talk about absolute risk. ….. Now you know how drug companies, the FDA, the popular press and many doctors lie with this numerical shell game. It's a clever way to promote the minuscule benefits of pharmaceuticals while discrediting the enormous healing effects of natural remedies. ….. There's nothing in the world of pharmaceutical medicine that even comes close. Yet the only thing you'll ever hear from the drug company-controlled mainstream media, medical journals, the FDA and most old-school doctors is that natural remedies are useless, but

[168] Huff D: *How to Lie with Statistics*. New York, New York: Penguin Books, 1954.

[169] "Lies, Damn Lies, and Statistics" article, available at < http://en.wikipedia.org/wiki/Lies,_damned_lies,_and_statistics >, accessed June 4, 2009.

prescription drugs have all been scientifically proven. Sure they have, if you fall for the relative risk gimmick and can't do basic math."[170]

These perspectives are timely because advice that physicians offer can easily be filtered by any bias they share in presenting "statistics." What you need is a real understanding based on their expertise, a perspective established by – and relying on – principled reporting of their professional observations.

Harvard Second Opinion: Heart Bypass Surgery Often *Not* Needed

Harvard cardiologist Thomas B. Graboys and colleagues addressed this question of bias in 1987, publishing results of their "second-opinion" program for coronary (heart) artery bypass grafting surgery. He noted that surgeons and their patients tend to view heart disease as a plumbing problem, that blocking heart arteries are like corroded pipes and simply must be replaced. *Not so!* Eighty-eight patients had been advised by their doctors to undergo coronary bypass surgery. The reason? Their cardiac catheterization study (heart angiogram pictures) had found blockages in their coronary (heart) arteries. They received second opinions from specialists working under Dr. Graboys. The cardiologists judged that, despite the known blockages, 74 of the patients could be effectively managed with drugs *instead of* surgery. Most patients chose to defer surgery; two-and-a-half years after the study began, *none* of them had died.[171] None of the "medical" treatment patients were treated with chelation therapy, which could have helped to improve their condition during the term of the research study. *Remember the **90** number?*

A skyrocketing rate of diagnostic cardiac catheterizations (angiogram pictures) is partly to blame for the upsurge in bypass operations, noted Dr. Graboys. In this procedure, a catheter tube is inserted through the skin near the elbow or in the groin area. This tiny tube is carefully threaded through blood vessels into the coronary (heart) arteries so that dye can be injected and X-ray pictures then taken to find blockages. Angiogram (blood vessel) pictures are often advised as *"necessary"* when patients complain of chest pains or when there are abnormal EKG or stress-test results. *Not so!* Graboys' group of cardiologists gave second opinions to 168 patients whose other doctors had recommended cardiac catheterization: the experts considered the diagnostic procedure to be ***un***necessary in all but 6 cases because the patients were medically stable and their condition could be controlled merely by life-style changes or medication *instead of*

[170] Adams M: " Lying with statistics: how conventional medicine confuses the public with absolute risk vs relative risk." *NaturalNews*. May 6, 2003. Available at < www.naturalnews.com/01368.html >, accessed June 10, 2009

[171] Graboys TB, Biegelson B, et al: Results of a second-opinion program for coronary artery bypass grafting surgery. *J Am Med Assoc* 258:611-614, 1987.

consideration for surgery.[172] Their fatal heart attack rate was *only 1.1* per cent *annually* over the *next 5 years*, much lower than the up to 5 per cent rate for heart artery bypass operation and the 1 per cent rate for balloon angioplasty surgery. Again, none of the "medical" treatment patients received chelation therapy, which could have helped to improve their condition even more.

Reversing Neck Artery Blockage *Without* Surgery

Why has chelation been embraced so enthusiastically over the decades by physicians, *each* of whom was originally trained in one or more medical or surgical specialties? Simply because *it works* – especially in conditions poorly treated (or treated with significant survival or side-effect risk) by conventional care – and because it is *so safe*. Chelation specialists Charles J. Rudolph, Ed W. McDonagh, and R. K. Barber reported in 1991 on the striking and highly significant reversal of atherosclerotic stenosis (hardening artery blockage) of *both* internal carotid (neck) arteries (feeding the brain) in 30 patients treated with only 30 EDTA infusions over a 10 month period. Ultrasound imaging showed overall obstruction was *decreased* by 21 per cent! Those patients who showed *more severe* stenosis (narrowing) had even *greater reduction* of blockage.[173] Their study was planned because of the startling success they had observed in *one* patient who had *severe* carotid (neck) artery occlusive (blockage) disease and visibly evident shear (disrupted flow) motion in her right carotid artery. Using duplex scanning (neck ultrasound imaging), the authors showed the original ***98*** per cent occlusion (blockage) was *reduced to only **33*** per cent after just 30 chelation therapy treatments. The abnormal shear motion observed initially resolved to *normal*.[174]

Some Doctors Just Can't See the Forest ***OR*** the Trees! – But Others See *Both*

In 1991, the Honda Accord was once again the top selling automobile, having been selected to the "Ten Best Cars" 23 times. That stellar performance has been consistent, year after year, since then. Consumers would be surprised if the Accord failed to get that recognition into the future. Chelation therapy also has had such a consistently successful history that treatment experts were startled when

[172] Graboys TB, Biegelson B, et al: Results of a second-opinion trial among patients recommended for coronary angiography. *J Am Med Assoc* 258(2):537-540, 1992.
[173] Rudolph CJ, McDonagh EW and Barber RK: A non-surgical approach to obstructive carotid stenosis using EDTA chelation. *J Adv Med* 4(3):157-168, 1991.
[174] Rudolph CJ and McDonagh EW: Effect of EDTA chelation and supportive multivitamin/trace mineral supplementation on carotid circulation: case report. *J Adv Med* 3(1):5-11, 1990.

Danish *vascular surgeons* published their 1991 results, the *very first study claiming **NO** results* in the chelation therapy group.[175,176] The number of irregularities were startling: The study did *not* follow the accepted (ACAM) protocol for EDTA treatment, although the investigators *claimed* to do so. The study has been reviewed by the Danish Committee for Investigation into Scientific Dishonesty and has been criticized in at least 4 journals.[177]

In 1992, United States President George H. W. Bush and Russian President Boris Yeltsin formally declared an end to the Cold War that had cursed the nations of the Free World and those behind the Iron Curtain for over 50 years. The controversy over improvements available from chelation therapy, however, was nowhere near being settled. Danish *cardiologists* C. Hancke, M. D., and K. Flytlie, M. D., published *their* study, showing clinical benefits in *marked* contrast to the "no improvements" report published earlier by Danish vascular *surgeons*.[178] Positive results were noted in 80 to 91 per cent of patients, depending on which measurement (mostly objective) was used. They treated 65 patients with chelation therapy who had been *on the waiting list* for bypass surgery for an average of 6 months. Eighty-nine percent were able to cancel their surgery because of symptomatic improvement due to chelation. Similarly, they treated 27 patients who were recommended for amputation; 24 affected limbs were saved. Of *92* patients referred for surgical intervention, *only 10* required surgery after or during their treatment period with chelation therapy. The authors concluded that EDTA chelation therapy is safe, effective, and cost-saving. *Remember the **90** number?*

Talk about a "health care reform" program: the savings in the Hancke/Flytlie study amounted to an estimated $3,000,000 in insurance benefits! Their research spanned a period of six years, with *no* severe side effects or deaths arising from the treatment. Chelation specialist L. Terry Chappell noted that similar results were obtained in the United States of America, and in 1992 alone, *363,000* of 407,000 coronary artery bypass operations (***89** per cent*) could have been *avoided* and 102,000 limbs could have been *saved* if treatment initially had been with chelation therapy. The direct U. S. cost savings, in 1992 alone, could have been as much as $8,000,000,000.[179] The only plausible explanations for

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[175] Sloth-Nielsen J, Guldager B, Mouritzen C, et al.: Arteriographic findings in EDTA chelation therapy on peripheral arteriosclerosis. *Am J Surg* 162:122-125, 1991.

[176] Guldager B, Jelnes R, Jorgenson SJ, et al: EDTA treatment of intermittent claudication - a double-blind placebo-controlled study. *J Intern Med* 231:261-267, 1992.

[177] Cranton EM and Franckelton JP: Negative Danish study of EDTA chelation biased (Letter). *Townsend Letter for Doctors* July, 604-605, 1992.

[178] Hancke C and Flytlie K: Benefits of EDTA chelation therapy on arteriosclerosis. *J Adv Med* 6:161-170, 1993.

[179] Chappell LT: Chelation therapy, smoking and health care costs (Letter). *J Adv Med* 7:107, 1994.

Hancke's positive treatment results are that *not* all surgery is necessary – ***or*** that the EDTA treatment is *highly* effective – or maybe *both*.

Losing Life and Limb Because of Desert Storm: the FDA Study Suspended

Country singer Randy Travis launched a stellar career in 1986 with his first No. 1 hit, "*On the Other Hand*," winning two Grammy Awards for the Best Male Country Vocalist and several Dove Awards for gospel songs. (In 2003, he was named No. 13 in the 40 Greatest Men of Country Music by *Country Music Television*.) During the first Gulf War, Travis joined with buddies Garth Brooks, Kenny Rogers, and Kathy Mattea to record a single to raise money for allied troops. Operation Desert Storm, the Gulf War in early 1991, had an unknown and unintended "side-effect" that has *killed many more Americans* than the reported 3,295 military casualties. The Food and Drug Administration (FDA) had granted Investigational New Drug (IND) Application #128.847 in 1986, to study the use of "Disodium EDTA with Magnesium" in the treatment of claudicatory (walking leg pain) peripheral vascular disease. FDA approval was obtained largely as a result of persistent efforts of chelation expert Ross Gordon, M. D., leading a group of ACAM physicians who labored months to author the study protocol. (I was one of the group that drafted those research procedures.) In approving the IND application, the FDA did not require *any* further safety studies, confirming their long recognition of EDTA as *safe* when given intravenously for treatment of toxic metal overload. So … how can we say that so many *more* Americans were killed?

Wyeth-Ayerst Pharmaceutical Company, which helped to support earlier portions of the IND study, had agreed to finance the remainder with an investment of $6,000,000. The company hired a new president in 1992 for Wyeth-Ayerst Research, Robert I. Levy (a former director at the National Heart and Lung Institute and long an *opponent* of chelation therapy[180]). Soon after Levy settled into his new corner office, Wyeth suddenly withdrew its promise of funding and its support for completing the study. Perhaps testifying to a tendency to bias, Levy in 1981 had falsely proclaimed that the decline in mortality from cardiovascular disease since the 1960s was due to "risk factor awareness and modification [cigarette smoking, hypertension control, diet change and reduction in cholesterol levels]," when the decline is considered by statistical analysis to have occurred

[180] "Chelation Therapy - An informal summary." Department of Health & Human Services. National Institutes of Health. National Heart, Lung, and Blood Institute. Bethesda, Maryland, June 1992.

despite the lack of such changes.[181] The IND (FDA-approved research) study was performed at Letterman Army Medical Center Hospital in San Francisco and at Walter Reed Army Medical Center Hospital in Bethesda, Maryland, with full endorsement of the Department of Defense and the Veterans Administration. So … how can we say that so many *more* Americans were killed?

Termination of the federally approved study occurred after about only thirty patients had completed treatment and testing in the study. *Why so few?* Study enrollment had been slow due to reluctance of Army cardiovascular surgeons to refer patients. But actual termination of the research came only because Army physicians and nurses supervising the study were transferred to the Arabian Gulf in preparation for war. Neither an alternate clinical site nor final funding were available to complete the investigation, but the changes seen in the some thirty subjects showed three *distinct* groups: one group improved dramatically, another showed virtually no change, and the third group was "in between," showing only moderate improvement. These groups *likely* represented those who received full dosage treatments with EDTA, those who received none, and those who received half-dosage treatments.[182] Had the Army physicians been able to complete this carefully planned study, the FDA once again *might* have approved "labeling" of EDTA for the treatment of peripheral (leg) blood vessel disease. [Recall that the FDA originally *had approved* the drug (in the late 1950s) for listing in the *Physicians' Desk Reference* as "possibly effective" in the treatment of peripheral (leg) *artery* disease. The passage of the Kefauver-Harrison Drug Control Act in 1962 lead to removal of its listing because the original study involved only 6 patients, considered too few to permit "labeling" as effective for blood vessel diseases.] Millions of people are hesitant to pay their own personal funds for treatments not "covered" by insurance or Medicare benefits – and "off-label" uses are not covered! Interruption of the IND study by the Gulf War, a study that *could* have resulted in "labeling" and government acceptance *and* eventual insurance coverage, likely ***will*** cost millions of patients their *legs* or their *lives*.

"*Rusting*" as a Prediction of Heart Attack Risk

"*The Tonight Show Starring Johnny Carson"* ended its 30-year run in 1992. Millions enjoyed the Johnny's monologue then nightly banter (with straight man Ed McMahon and celebrity guests) and lively skits while they were drifting off to sleep. Due to a change in rules, the Olympics allowed professional basketball

[181] Levy RI: Declining mortality in coronary heart disease. *Arteriosclerosis* 1(5)312-315, 1981.
[182] Gordon R: private communication with Trowbridge JP (Interview). The history of chelation, 1995.

players in the games in 1992. Our "Dream Team" (including stars Patrick Ewing, Larry Bird, Scottie Pippen, Michael Jordan, Clyde Drexler, Karl Malone, Charles Barkley, and Earvin "Magic" Johnson) easily won the gold medal. Less entertaining but far more significant to your life long health was research published in 1992 by Finnish researcher Jukka T. Salonen and colleagues. *Their* work showed how *millions* now can *easily* be forewarned of their risk of developing heart disease. How can they find out? By means of a simple blood test related to changes in iron status. Salonen knew that iron can induce lipid peroxidation (fat "rusting") in humans and that such changes have promoted ischemic (blocked blood flow) myocardial (heart) injury in experimental animals. They tested and then followed 1,931 men, aged 42, 48, 54, or 60 years old, all of whom started with no symptoms of heart disease. Over a period of 3 years, 51 participants had a heart attack and 9 of them died. How might these victims been identified early on and selected for preventive treatment (such as chelation)? Salonen reviewed the tests performed at the start of the study, looking at what was distinctive about those who had suffered with heart disease. Men with serum ferritin (special iron blood measurement) over 200 mcg/l had a 2.2-fold risk factor-adjusted higher risk of acute myocardial infarction compared with men with a lower serum ferritin. For each ***1*** per cent *increase* in the amount of ferritin in the blood, they found *more than a **4** per cent increase in risk* for heart attack. The association was stronger in men who also had a serum LDL (cholesterol) level over 193 mg/dl than in others patients. Also and interestingly, dietary iron intake had a significant positive association with the disease risk. Ferritin was identified as the ***second strongest risk factor*** for heart attacks, behind the most significant factor – *you guessed it!* – a number determined by multiplying the pack-total of ***cigarettes*** smoked daily and the total years over which the participant had smoked (= "cigarette pack-years"). Clearly, the removal of excess iron by chelation therapy (the *only* method available, other than blood-letting) offers a logical treatment option to reduce excessive heart attack risk.[183]

The United States Postal Service in 1993 issued a stamp featuring Elvis Presley – hips *not* grinding around! – in recognition of his long years of original contribution to American rock and roll music. That same year, chelation expert L. Terry Chappell, M. D., and John P. Stahl, Ph. D., in recognition of *dozens* of years of documented improvements with chelation treatments, published a sophisticated *meta-analysis* (statistical review) of *nineteen* clinical research studies meeting their strict criteria for review, with a total of *22,765* patients. Eighty-seven percent of

[183] Salonen JT, Nyyssonen K, et al: High stored iron levels are associated with excess risk of myocardial infarction in Eastern Finnish men. *Circulation* 86:803-811, 1992.

patients included in the meta-analysis showed clinical *improvement* by objective testing. *(Remember the **90** number?)* The "correlation coefficient" (statistical measurement) of "r = 0.88" indicated a *strong* relationship between EDTA treatments and improved cardiovascular function.[184]

Included in this meta-analysis review (the only *un*published study) were studies from 19,147 patients studied with the advanced medical technology called "thermography." Much the same way that "infrared goggles" allow soldiers to see clearly at night, thermogram heat pictures provide very detailed measurements of the warmth of body areas, and higher temperature relates directly to greater blood flow. These 19,147 patients had peripheral (arm and leg) artery stenosis (narrowing), not yet severe enough to require amputation. They were studied before and after a series of EDTA chelation infusions. This study, overseen by thermography specialist Philip P. Hoekstra, III, Ph. D., was conducted over *thirteen years*, during which time chelation physicians within the United States referred patients to a single reference laboratory for definitive evaluations of peripheral (leg) vascular perfusion (blood flow). The authors derived rigorous quantitative criteria to classify the response of these patients and subjected the results to binomial analysis (statistical measurement). Arterial perfusion (blood flow) of the upper and lower extremities demonstrated significant *enhancement* in 86 per cent of chelated patients – remember the ***90*** number? – with a significant dose-response relationship evident.[185,186]

To avoid the prospect that excluding ***un***published data might lead to a criticism of selective bias, Chappell and colleagues in 1994 followed up the original 1993 meta-analysis report with a second study. This paper reviewed ***un***published "file drawer" data on 1,241 patients from 32 clinicians. Eighty-eight per cent of the patients improved – *remember the **90** number?* – as measured by a variety of testing parameters (EKG, ankle/arm blood pressure index, walking distance, exercise activity, Doppler [ultrasound] blood vessel testing, and others). This "observational" study also showed a correlation coefficient (statistical measurement) of "r = 0.88," the *same* as in the earlier published meta-analysis study, again a *strong* indication that EDTA is effective in treating vascular

[184] Chappell LT and Stahl JP: The correlation between EDTA chelation therapy and improvement in cardiovascular function: a meta-analysis. *J Adv Med* 6(3):139-160, 1993.
[185] Research sponsored by Hoekstra III PP, Gedye JL, Hoekstra Jr P, Lewis HT, Scarchilli AJ, Parente PA, and Baron J, "Serial infusions of magnesium disodium ethyleneamine tetraacetic acid enhance perfusion in human extremities," pre-publication draft: Therma-Scan, Inc., 26711 Woodward Ave., Huntington Woods, Michigan 48070.
[186] Hoekstra III PP: private communication with Trowbridge JP (Interview). The history of chelation, 1996.

disease.[187]

Complex Science Demands Advanced Training

Space Shuttle *Endeavor* made the first repair visit to the Hubble Space Telescope in 1993, fixing optical problems with the mirror and upgrading the magnification and clarity substantially. The unit had been designed for such future upgrades, a process known as "continuous improvement." The Great Lakes Association of Clinical Medicine (GLACM, later renamed as the International College of Integrative Medicine, ICIM) instituted its *own* program for continuous improvement in 1993, establishing the semi-annual (later annual) Advanced Training Program in Heavy Metal Toxicology. The two-day seminars feature university and government scientists (from the Environmental Protection Agency, the Centers for Disease Control and Prevention, international research centers, major universities, and so on) presenting basic research findings with toxic metal exposures. Other faculty include chelation experts presenting clinical training in evaluation, diagnosis, and treatment performance and monitoring of EDTA and other chelating drugs. The training program was instituted at the request of Theodore C. Rozema, M. D., then president of GLACM. Program chairmen and clinical lecturers are leading certified specialists, Diplomates of the American Board of Clinical Metal Toxicology (ABCMT, formerly named the American Board of Chelation Therapy, ABCT).

American film actress *Kathryn* Hepburn was named, in 1999, as the greatest female star in the history of American cinema by the American Film Institute. She holds the record for the most Best Actress Oscar wins with four, from 12 nominations. Kathryn won an Emmy in 1976 and was nominated for four other Emmys, two Tony Awards, and eight Golden Globes. Academy Award-winning *British* film and stage actress *Audrey* Hepburn became one of the most successful and admired leading ladies. She was nominated for the Oscar four more times after her best actress role in "*Roman Holiday*" in 1953 and also received a Golden Globe, a Tony, a Grammy, and an Emmy. One month before her death, she received the Presidential Medal of Freedom recognizing her long devotion to humanitarian efforts. *She* was laid to rest in 1993. Unfortunately, the argument over chelation treatments was *not*. New Zealand physician Andre M. van Rij and colleagues published *negative* conclusions from their purportedly "double-blind, randomized, placebo-controlled" trial on the use of intravenous magnesium-EDTA

[187] Chappell LT, Stahl JP and Evans R: EDTA chelation therapy for vascular disease: a meta-analysis using unpublished data. *J Adv Med* 7:131-142, 1994.

chelation therapy for the treatment of intermittent claudicatory (walking pain) peripheral (leg) artery occlusive (blockage) disease. Measurements included measured walking distance to (a) onset of pain and (b) stopping due to disabling claudication pain and ankle/brachial blood pressure measurements (indicating blood flow) at rest and immediately after the interrupted treadmill exercise. Once again *and* surprisingly, these authors concluded that "Chelation therapy has no significant beneficial effects over placebo in patients with intermittent claudication."[188] Chelation experts have advanced a number of criticisms,[189] including selective presentation of statistics and conclusions, similar to that described earlier regarding the 1963 Kitchell and Meltzer "reappraisal" article. "Raw data" obtained for critical review showed that patients in the EDTA *chelation group* ***actually improved*** *significantly* in ***five*** of the studied parameters (ankle/brachial indices in both better and worse legs, two different parameters of physical activity, and femoral pulsatility [leg pulse] indices) compared to controls. Further, ***none*** of the EDTA patients worsened *except* ***one*** patient in ***one*** parameter (ankle/brachial [blood flow] indices in worse leg), although this was not the case for the control subjects, many of who *did* worsen. The technical criticisms were published as letters to the editor.[190,191,192]

Is Chelation Suppressed Because … Racketeers Fear *Competition?*

Why do "negative" reports repeatedly have *obvious* problems with their methods of administering treatments, with their statistics, and with their conclusions? *Good questions!* Several answers were reviewed in 1992 in a disturbing book by James P. Carter, M. D., Dr. P. H. (Doctor of Public Health), Head of the Section on Nutrition at the Tulane University School of Public Health and Tropical Medicine, entitled *Racketeering in Medicine: The Suppression of Alternatives.*[193] The most shocking revelation is evidence on how local medical societies have teamed up with government agencies to persecute providers who use "unorthodox" (as-yet "unapproved") treatments. (When something other than new drugs or new surgical procedures, virtually all different ideas start out as

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[188] van Rij AM, Solomon C, Packer SGK, et al: Chelation therapy for intermittent claudication. A double-blind, randomized, controlled trial. *Circulation* 90(3):1194-1199, 1994.
[189] Chappell LT, Miranda R, Rubin M, Carter JP, Trowbridge JP: Chelation therapy (Letter). *Circulation* 92:1350, 1995.
[190] Schachter MB: Chelation therapy. *Circulation* 91:2291, 1995.
[191] Chappell LT, et al: Chelation Therapy. *Circulation* 92:1350-1351, 1995.
[192] Godfrey ME and Chappell LT: Chelation therapy for intermittent claudication—a reappraisal. *N Z Med J* 109:83, 1996.
[193] Carter JP: *Racketeering in Medicine: The Suppression of Alternatives*. Norfolk, Virginia: Hampton Roads, 1992.

"unapproved." Even some of the operations take a while to become "accepted," for example, "Lap Banding" to reduce stomach size for weight loss.) Carter offers a sharply-worded exposé of just how the financial bottom line is warping and skewing the manner in which bona fide medical treatments are being selectively persecuted rather than impartially researched, thoroughly tested, and approved if appropriate.

Carter has explained just how the "racketeering" has been able to suppress the miraculous benefits of life long health available from chelation therapy:

> "When a therapy is widely accepted by the medical profession, no scientific proof of effectiveness is required, and anecdotal evidence is accepted as valid. If an alternative therapy is contested by those physicians, however, they attack by demanding that the therapy in question be subjected to very expensive and time-consuming double-blinded, placebo controlled trials costing tens of millions of dollars to meet FDA requirements. Medicare regulations also exclude the need for scientific proof for treatments that are utilized by a majority of physicians. The federal government thereby adds support to this double standard. …..
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> "The Office of Technology Assessment, a branch of the United States Congress, with the help of an advisory board of eminent university faculty, has published a report[194] with the conclusion that, ' . . . only 10 to 20 percent of all procedures currently used in medical practice have been shown to be efficacious by controlled trial.' Therefore, 80% to 90% of medical procedures routinely performed are unproven. … That report further points out that research which purports to prove effectiveness of the remaining 10% to 20% of medical procedures is largely flawed, and ' . . many of the other procedures may not be efficacious.' The most frequent reason for not accepting the value of EDTA chelation therapy reflects a flagrant double standard."[195]

Lest you think that Carter is over-emphasizing the influence of financial bottom line, you need to understand that research studies demanded by the FDA serve well to keep the "smaller fish" out of "the pond": a new drug has development costs

[194] *Assessing the efficacy and safety of medical technologies*. Washington DC, Congress of the United States, Office of Technology Assessment. Publication No: 052003-00593-0. Washington DC: Government Printing Office, 1978.
[195] Carter JP: If EDTA chelation therapy is so good, why is it not more widely accepted? *J Adv Med* 2:213-226, 1989.

from $500 million to $2 ***b***illion to bring it to marketplace (your local pharmacy … *and* the television in your living room!).[196]

What about surgery and the influence that the bottom line might have on perpetuating an approach that might be less effective than available alternatives such as chelation? Professor and cardiologist Thomas A. Preston, M. D., at the University of Washington School of Medicine, Seattle, Washington, expressed similar views, feeling that marketing matters more than evidence when procedures are "in favor" with the conventional practicing physicians:

> "Coronary-bypass (heart) surgery is overused, frequently ineffective, and absurdly expensive. It is the epitome of modern medical technology, yet, as it is now practiced, its net effect on the nation's health is probably negative."[197]

Severe criticisms. Happily, the medical and surgical community have felt no need to offer *any* response in their defense. After all, they "write the rules," regardless of any negative evidence or any negative opinions of others, whose statements won't influence the ways things *are* being done.

In 1996, prescription drug *Lipitor* was first approved by the Food and Drug Administration (FDA) to lower blood cholesterol levels; by 2006, worldwide sales had accumulated to $14+ ***billion***, making it the number one selling drug that year … a position it had held for the *prior **6*** years as well. Odd, since this class of drugs – the "statins" – cause profound interruptions in the body biochemistry, even disrupting energy metabolism in every cell. This marketing success is even more puzzling because many people who suffer heart attacks have *normal* cholesterol levels and do *not need* to take *any* drugs for control. Chelation therapy is known to lower elevated blood cholesterol levels by about 15 to 20 per cent.[198] This and other beneficial effects (including enhanced energy production!) had been known for *dozens* of years and were reviewed in 1996 by chelation experts L. Terry Chappell, M. D., and Michael Janson, M. D., who reported to cardiovascular nurses on the history and current status of "EDTA Chelation Therapy in the Treatment of Vascular Disease."

> "EDTA chelation therapy does not preclude the use of surgery, and in spite of receiving chelation treatments, some patients will require surgical interventions. There is usually time for patients to try

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[196] Adams C and Brantner V: Estimating the cost of new drug development: is it really 802 million dollars? *Health Aff (Millwood)* 25(2):420-8, 2006.

[197] Preston TA: Marketing an operation: coronary artery bypass surgery. *J Holistic Med* 7(1):8-15, 1985.

[198] Saunders JF, Princiotto JV and Rubin M: Effect of calcium disodium ethylenediamine tetraacetate on hypercholesterolemic rabbits (22374). *Soc Exp Biol Med* 92:29-31, 1956.

> chelation therapy before surgery or amputation, as Graboys and associates found in 1987 and 1992. ... In addition, patients who are not surgical candidates and who are doing poorly often benefit from chelation therapy. ... This approach offers great potential benefit and is quite safe. It is also relatively inexpensive and does not interfere with other treatments."[199]

Controlling cholesterol might generally be of little value, but restoring better health is *always* critical. That makes chelation therapy – which can help normalize cholesterol and triglycerides while improving heart and blood vessel conditions, among many others – the clear choice in anyone's book. *Remember the **90** number?*

The year 1997 saw a long and valued history recognized in two ways. First, an Act of Congress named comedian and perennial host of the Academy Award shows, Bob Hope, as an "Honorary Veteran." He had appeared in so many theaters of war to entertain the troops at USO events since 1941 that the quip arose, "Where's there's death, there's Hope." Second, hope for treating degenerative diseases was documented in a more complete scientific update by Bruce W. Halstead, M. D., and Theodore C. Rozema, M. D. Together they published the *2nd* edition of Halstead's original 1979 physician primer, *The Scientific Basis of **EDTA** Chelation Therapy*.[200] This standard textbook introduces basic chelation chemistry and physiology to physicians training to become experts in this valuable treatment.

The research scientist whose early studies in the 1950s led to the first clinical use of EDTA chelation therapy, Martin Rubin, Ph. D., later an emeritus professor at Georgetown University, continued to urge its adoption as a standard treatment for heart and blood vessel diseases. In 1996, he authored a chapter entitled "Magnesium EDTA Chelation" in Franz Messerli's widely-acclaimed *Cardiovascular Drug Therapy* textbook, 2nd edition. In this chapter, he included details of the coronary (heart) artery decalcification study originally presented to the American Chemical Society meeting in 1994.[201] That report provided clinical evidence of the removal of calcium from atheromatous (fatty) and arteriosclerotic (hardened) arteries. The decrease of coronary calcification and improvement in the clinical status was clearly documented in two patients treated with

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[199] Chappell LT and Janson M: EDTA chelation therapy in the treatment of vascular disease. *J Cardiovsc Nurs* 10(3):78-86, 1996.

[200] Halstead BW and Rozema TC: *The Scientific Basis of EDTA Chelation Therapy*, 2nd ed.. Landrum, South Carolina: TRC Publishing, 1997.

[201] Rubin M, Rozema TC, Casdorph HR and Scarchilli A: Cardiac decalcification by Na2MgEDTA. Presented at American Chemical Society, 208th meeting. Washington DC, 1994.

$Na_2MgEDTA$ (disodium-magnesium-EDTA, the favored modern compound) and studied by the newest technology, "Ultrafast" CT scan. These were the first patients in whom clear clinical improvement had been conclusively correlated with reduction of heart artery calcification.

> "… Thirty infusions of … [magnesium EDTA] were administered during a period of 7 months. The patient had a history of myocardial infarction [heart attack] and a five-vessel bypass operation 14 years prior to the present course of [EDTA] chelation therapy. Ultrafast CT obtained through the coronary arteries for evaluation of calcification revealed '216 lesions for a total calcium score of 15872.' The radiologic impression [diagnosis] was 'extensive multivessel coronary artery disease. This corresponds to a 91% specificity [it really *is* calcium hardening and blockage in heart arteries] and a 74% positive predictive value [it really *is* serious heart disease 3 times out of 4 when it appears like this] based on the patient's age.' The CT scan at the completion of 30 [EDTA] infusions in 7 months of therapy was as follows: 'There are 118 lesions and a total calcium score of 7970.' The radiologic impression [diagnosis] was 'extensive multivessel coronary artery disease. There has been a significant reduction in the number of lesions and in the total calcium score from the prior examination.' [footnoted as quoting from the report presented to the American Chemical Society meeting]"[202]

Reviewers noted that Dr. Messerli's textbook provides the reader with a comprehensive review of the *most current therapy* in cardiac care and a *complete* compendium of the ***most current standards of care*** for the treatment of the cardiac patient using ***evidence-based*** *medicine*. *Hmmm ..... recall "evidence-based"?*

Chelation Therapy: Patients of Specialists Enjoy Results *and* Safety

People readily (and excitedly!) embrace the most advanced computer technology, and in 1995 Bill Gates' Microsoft Corporation released "*Windows 95*," a major advance in computer operating systems. Intel introduced the Pentium Pro chip to allow faster processing. Advanced technology in healthcare, however, seems to have a much slower pace of acceptance … but only ***if*** it challenges the ways that conventional physicians think. Spanish chelation physician G. A. Escobar and colleagues studied patients with significant peripheral (leg) artery disease, describing marked improvement in ankle/arm blood pressure indices

[202] Messerli FH, ed.: *Cardiovascular Drug Therapy*, 2nd ed. New York, New York: WB Saunders Company, 1996; pp. 1613-7, at 1615-6.

(relating to blood flow) in 76 of 80 patients treated with chelation therapy. Pulse evaluations in ankles and feet also showed improvement. Twenty-eight of the diabetic patients had ***inoperable*** tibial (foreleg) artery blockage; 10 of these had already undergone amputation. Three of the patients had documented Leriche's syndrome, blockage forming in the aorta (large belly artery going toward the legs). *No* patients suffered serious side effects from EDTA therapy. Kidney function was unchanged except for a temporary reduction in creatinine clearance in only 6 patients – ranging from a dip of 30 to 50 per cent and *returning to baseline normal* within 30 days. "Because of the good results obtained, we consider that chelation with EDTA represents another alternative to treating arterial insufficiency due to atherosclerosis. This is especially effective in patients who are unable to be treated surgically, or also can be a *complement to the surgical procedure*."[203] *Remember the **90** number?*

Harvard psychologist Timothy Leary was famous for his 1960s advocacy of psychedelic drug research, coining his famous phrase before *30,000* hippies gathered in Golden Gate Park: "Turn on, tune in, drop out." He died in 1996 – the final *"dropping out"?* – and a portion of his ashes were later "scattered" in space. In that year, chelation specialists Efrain Olszewer, M. D., Fuad Calil Sabbag, M. D., and James P. Carter, M. D., Dr. P. H. (Doctor of Public Health), were struck by how ***few*** side effects were encountered with over three times that many *chelation* patients. In Brazil, treatments were administered to ***more than 100,000 patients***; they had undergone 2 million infusions over the prior 11 years. This vast clinical experience prompted the authors to analyze *prospectively* (starting now, looking forward as they go through treatment) a group of patients, to determine the most frequent side effects seen with EDTA chelation therapy.

> **Thrombophlebitis Vein Irritation** – In 20,000 patients treated with EDTA with *no* heparin in the infusion (often used to reduce thrombophlebitis tendency), only 2 cases (0.001 per cent) developed thrombophlebitis. Of 200,000 total infusions (with and without heparin), only 16.5 per cent of patients even mentioned a burning sensation. Thrombophlebitis should be considered as a historical fact, rarely seen in practice.
>
> **Kidney Function Changes** – Data in 20 patients with normal pretreatment BUN and creatinine (kidney function blood test) values showed no significant increases (meaning, *no* worsening) in mean (average) values post-treatment. Data in 36 patients with varying

[203] Escobar GA, Escobar SC, et al: Chelation in peripheral arterial insufficiency. *Cir Cir* (Surgery and Surgeons) 61(2):58-62, 1995. Emphasis added.

renal insufficiency (early kidney failure) showed post-treatment creatinine levels *improved* slightly in the 78 per cent of patients who were able to be able to be teased to three-quarters of the optimal EDTA dosage. In the 22 per cent of patients whose EDTA treatments were stopped because of worsening kidney function, laboratory levels rose only modestly (BUN increased by 28 per cent, creatinine increased only by 35 per cent).

Osteoporosis – Bone densitometry studies for 78 patients were evaluated pre- and post-treatment and showed only a slight improvement.

Heart Failure – Many patients with heart failure improved, with *no* significant side effects seen when treatments were carefully monitored.

Hypoglycemia – Hypoglycemia (lowered blood sugar) as a result of EDTA infusion should be listed as a rare side effect.[204]

"It'll kill your kidneys!" has been claimed by conventional doctors as a *primary* criticism of chelation therapy. But not so, as demonstrated by the Brazilian studies. Supporting the findings of Olszewer and colleagues are a number of earlier and later published studies,[205] including that by chelation specialist Keith Sehnert, M. D., and colleagues in 1984.[206] They studied 13 patients with chronic degenerative disorders and with renal (kidney) damage. After 20 EDTA infusions, creatinine clearance (kidney function) significantly *improved toward normal*. "Within the limits of this study, creatinine clearance [critical measure of kidney function] *approaches the optimal* (100 ml/min/1.74 cm2) following chelation therapy under the conditions outlined in this report."

Thursday, August 2, 2001, was declared *Lance Armstrong Day* in the Big Apple by New York City Mayor Rudolph Guiliani. The world-renowned 29-year-old Plano, Texas, professional road-racing cyclist had just become the first non-European to win three consecutive Tour de France race. Starting in 1999, after recovering from widespread testicle cancer, Armstrong won a record-breaking 7 consecutive Tour de France races. In 2009, after a four-year retirement, he returned to win third place, becoming the second oldest rider to stand on the Tour winners podium. Garth Brooks, second only to *The Beatles* in the United States'

[204] Olszewer E, Sabbag FC, and Carter JP: Side effects studies on patients treated with EDTA. *Townsend Letter for Doctors & Patients* 157(58):92-94, 1996.

[205] Cranton EM: Kidney effects of ethylene diamine tetraacetic acid (EDTA): A Literature Review. *J Holistic Med* 4:152, 1982.

[206] Sehnert KW, Clague AF, and Cheraskin E: The improvement in renal function following EDTA chelation and multivitamin-trace mineral therapy: a study in creatinine clearance. *Med Hypotheses* 15:301-304, 1984. Emphasis added.

all-time chart, announced his retirement from country music in 2001, but that didn't last even four years. What *has* lasted is a collection of profound changes for which the year 2001 will long be remembered *after* "9-11," the September 11th Middle Eastern terrorist attack on the World Trade Center, the Pentagon, and another unknown target. Americans fearful for their future wellbeing allowed their government to institute sweeping personal freedom changes in the name of security and safety. (Odd that no one appears to remember the admonition by Founding Father Benjamin Franklin: "Any society that would give up a little liberty to gain a little security will deserve neither and lose both."[207]) Far more significant for Americans' future health, though, was the 2001 publication, by chelation expert Elmer Cranton, M. D., of an expanded and extensively updated second edition of his excellent monograph, *A Textbook on EDTA Chelation Therapy*.[208] Cranton presents chapters by the world's leading experts in this miraculous medical treatment. "This therapy has been proven effective over and over again in clinical practice," says Dr. Cranton. "More than one million patients have received more than twenty million infusions with no serious or lasting adverse effects." In his textbook foreword, Nobel Prize-winning scientist Linus Pauling, Ph. D., states, "EDTA chelation therapy makes good sense to me as a chemist and medical researcher. It has a rational scientific basis, and the evidence for clinical benefit seems to be quite strong."[209]

The National Institutes of Health Steps Up to the Plate Once More

Perennial American favorite pop rock/jazz fusion band, *Chicago*, released a compilation album in 2002, *The Very Best of Chicago: Only The Beginning*, with hits spanning their entire star-studded career since 1967. Second only to the world-famous *Beach Boys* in terms of singles and albums, *Chicago* remains one of the longest running and most successful American pop/rock and roll groups, more recently touring with the bands *Huey Lewis and the News*, *America* and *Earth, Wind and Fire*. But the year 2002 held two *never-before-seen* surprises: first, Switzerland joined the United Nations (they *hadn't* been a member *before?*), and second, the National Institutes of Health (NIH) announced funding for a study of chelation therapy in coronary (*heart*) artery disease! The National Center for Complementary and Alternative Medicine along with the National Heart, Blood,

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[207] Franklin B: BrainyQuote Ben Franklin quotes. Available at < http://www.brainyquote.com/quotes/authors/b/benjamin_franklin.html >, accessed June 5, 2009.

[208] Cranton EM: *A Textbook on EDTA Chelation Therapy* 2nd ed., Charlottesville, Virginia: Hampton Roads Publishing, 2001.

[209] Gordon GF: EDTA and chelation therapy: history and mechanisms of action – an update. *Clin Prac Alt Med* 2:36-47, 2001.

and Lung Institute announced $30,000,000 funding for a 5-year, multicenter, multidisciplinary *T*rial to *A*ssess *C*helation *T*herapy (TACT) to evaluate the leading cause of death of both men and women, under the direction of cardiologist Gervasio Lamas, M. D., of the Mt. Sinai Medical Center, Miami Beach, Florida.[210] Lamas said he decided to design the study when one of his own patients asked about chelation. "While my answer, as a very conventional cardiologist, was initially, 'No, that's silly,' as I looked into it, I realized I didn't really have the evidence base to say that," Lamas said. "Now we'll see what the real truth is."

The study proposes to enroll 2,372 patients, age 50 and older, with a history of myocardial infarction (heart attack), never treated with chelation therapy. Subjects will be appropriately "randomized" to a treatment and a control placebo group, "double-blinded" so that neither physicians nor their patients will know which ones are receiving the chelation treatment infusions or the "dummy" placebo solutions. Thirty weekly intravenous infusions are scheduled for each study subject, followed by 10 bi-weekly infusions, according to an accepted research protocol. Scientists will track whether those who receive chelation live longer, suffer fewer heart attacks or strokes, need less hospitalization for chest pain, and need fewer balloon angioplasties or bypass surgeries. All study participants will also get standard heart treatments (such as drugs and lifestyle counseling), so the question to be answered is whether chelation will provide any *added* benefit. Enrollment into the study has been slower than expected, so results might not be available until about 2015.

Another unusual event for 2002 was the publication of yet *another* negative study, proclaiming "there is **no** evidence to support a beneficial effect of chelation therapy in patients with ischemic [narrowing arteries] heart disease, stable angina [heart pains], and a positive treadmill test for ischemia" (emphasis added), in stark contrast to the overwhelming majority of studies over the prior 45+ years. The authors, mostly nurses, of the "PATCH" study (*P*rogram to *A*ssess Alternative *T*reatment Strategies to Achieve *C*ardiac *H*ealth) screened 3,140 patients in Calgary, Alberta, Canada, performing a qualifying treadmill test in 171 of them, enrolling 84 of those in the study.[211] Patients were over 20 years old with proven coronary (heart) artery disease, abnormal treadmill testing, and stable angina (heart pains) while receiving optimal medical therapy. They claimed to follow the ACAM protocol, but – as with *other* so-called "negative" studies – several

[210] NIH . "News Release: NIH Launches Large Clinical Trial on EDTA Chelation Therapy for Coronary Artery Disease", August 7, 2002. Available at < http://nccam.nih.gov/news/2002/chelation/pressrelease.htm >, accessed June 17, 2009.
[211] Knudtson ML, Wyse DG, et al: Chelation therapy for ischemic heart disease. *JAMA* 287:481-486, 2002.

important procedural aspects were altered or ignored. Interestingly, the authors failed to comment on the angioplasty rate observed at one-year follow-up post-"treatment" – ***9.4*** per cent for the placebo group vs. ***ZERO*** per cent for the chelation group. Further, the authors failed to comment on ***5*** cardiac events noted in the placebo group vs. ***only one*** in the chelation group during the one-year follow-up.

Another 2002 report would be humorous if it weren't tragic in its implications. M. C. Kim and colleagues offered their conclusions regarding treatment of angina heart pains that were resistant to conventional medical treatments. Their rather arrogant statement is disturbing:

> "Refractory angina pectoris is defined, and traditional medical therapies are discussed. ... No data support the role of chelation therapy in this population. Heart transplantation remains a final option for these patients. ... The importance of randomized, double-blinded, placebo-controlled trials cannot be overemphasized, as the placebo effect of these therapies is probably marked."[212]

As a chelation specialist who has been privileged to treat *2* patients who were on "the list" for "heart transplant surgery" and who were subsequently *removed from* "the list" due to marked clinical improvements,[213] I cannot refrain from expressing both contempt and frustration when easy, safe, possibly effective, and relatively inexpensive chelation treatment is outright ***dismissed*** while the authors consider that the extreme and risky operation of "heart transplantation remains a final option."

Lead Poisoning Is More Important than Ever as a Cause of Human Suffering

How do "*The Dukes of Hazzard*" and NASCAR auto racing relate to the history of chelation therapy? The "Dukes" TV show aired from 1979 through 1985, featuring cousins living in a fictional rural county in Georgia, racing around in their Dodge Charger and on probation for their illegal transportation of "moonshine," illegally-produced alcohol distilled in the back hills by their uncle. National Association for Stock Car Auto Racing (NASCAR) was founded in 1947 and sanctions and governs auto racing sports events. Stock car racing in the United States has its origins in bootlegging during Prohibition, when drivers raced to

[212] Kim MC, Kini A and Sharma SK: Refractory angina pectoris: mechanism and therapeutic options. *J Am Coll Cardiol* 39(6):923-934, 2002.
[213] Trowbridge JP: Personal clinical practice experience, Houston, Texas.

deliver bootleg whiskey made in Appalachia region of the United States. Bootleggers needed to distribute their illicit products, and they typically used small, fast vehicles to better evade the police. By the late 1940s, highly modified "stock" cars were for pride and profit. *But chelation?* Pipes for stills used to produce the illegal alcohol often were welded together, typically with lead solder. Lead-contamination of moonshine alcohol sometimes poisoned "consumers," who presented for treatment of symptoms of plumbism (lead poisoning) (*and* alcoholic liver disease?!). Nephrologists – *conventional* kidney specialists – especially in Southern States, became quite competent in using EDTA chelation to remove toxic lead from these patients.

In 2003, Taiwan nephrologists Ja-Liang Lin, Dan-Tzu Lin-Tan, Kuang-Hung Hsu and Chun-Chen Yu, all of the Divisions of Nephrology or Clinical Toxicology at the Chang University, Taipei, Taiwan, reported their stunning success in ***reversing*** progressive kidney failure. They studied intravenous chelation treatments compared to placebo ("dummy") infusions, concluding that "Low-level environmental lead exposure may accelerate progressive renal [kidney] insufficiency in patients without diabetes who have chronic renal disease. Repeated chelation therapy may improve renal function and slow the progression of renal insufficiency."[214] Their EDTA-treated patients *improved*, while patients receiving ***in***active infusions *worsened* and were referred for dialysis. P. A. Marsden, reflecting on the issues raised by Ja-Liang Lin et al., offered the critical question regarding whether lead (and perhaps other toxic metals) might be a significant but often ***un***recognized (thus, ***un***treated) contributing factor to non-diabetic chronic kidney disease.[215]

PART SIX:
"SAFE" AND "EFFECTIVE," *THE WINNING EDGE*

The 1980s were landmark times in American history – Space Shuttle missions becasme almost routine and began to unlock the mysteries of deep space. Closer to home, *Cabbage Patch* dolls stirred the imagination of young girls who wove intricate stories about their dolls' background and experiences, revealing *their own* dreams for a fairy princess future. CDs and PCs and Apple's *Lisa*

[214] Ja-Liang L, Dan-Tzu LT, Kuang-Hung H and Chun-Chen Y: Environmental lead exposure and progression of chronic renal diseases in patients without diabetes. *NEJM* 348(4):277-286, 2003.
[215] Marsden PA: Increased body lead burden—cause or consequence of chronic renal insufficiency? *NEJM* 348:345-347, 2003.

computer were introduced to usher us into the Information Age. Sadly, the history of chelation very quickly became almost exclusively one of *medical* ***politics*** rather than *medical* ***progress***. ***The*** major studies of coronary (heart) artery bypass surgery (Veterans Administration, National Institutes of Health, Coronary Artery Surgery Study) concluded that surgery offered perhaps only a ***small*** but measurable improvement compared to conventional medical management. Still, surgery captured the imagination and admiration of the public *and* the reimbursements of insurance carriers. The main criticism leveled at chelation was derived ***not*** from data but from "opinions" formed by physicians in various professional and trade organizations – each repeated time and again by the *other* groups, each of which echoed the negative *opinions* and *conclusions* already expressed by the *others* without providing any new *studies*.

Taking the lead in *slamming* chelation was the American Medical Association (AMA), a *trade* group that claims it seeks to "promote the art and science of medicine and the betterment of public health," by "representing the medical profession, providing information about medical matters, upholding professional conduct and performance, and advancing standards of medical education." The *D*iagnostic *a*nd *T*herapeutic *T*echnology *A*ssessment Program (DATTA) was created in 1982 to distill and publicize information for practicing physicians on the safety and clinical efficacy of emerging or "controversial" medical technologies. Their widely-cited 1983 conclusion regarding chelation therapy was enthusiastically *negative*, as the conventionally-practicing physicians were hoping to make it disappear the same way they had buried other promising medical treatments.[216]

Most telling was how "private" practice physicians influenced the United States "Public Health Service [PHS] Assessment of Ethylenediamine-Tetra-Acetic Acid Chelation Therapy for Atherosclerosis, 1981."[217] The government agency acknowledged that research on experimental drug therapies has traditionally been funded by the drug manufacturers. The PHS also acknowledged that, in the case of EDTA, commercial funding for research would be highly unlikely because the patent on the drug had long ago expired. In their Summary, the PHS boldly asserted that …

> "EDTA chelation therapy for the treatment and prevention of atherosclerosis is controversial. There is no widely accepted rationale

[216] Chelation Therapy (diagnostic and therapeutic technology assessment). *JAMA* 250:672, 1983.

[217] Public Health Service Assessment of Ethylenediamine-Tetra-Acetic Acid Chelation Therapy for Atherosclerosis. National Center for Health Services Research. Rockville, Maryland: Office of Health Technology Assessment, 1981.

> to explain the beneficial effects attributed to this therapy. Its safety is questioned and its clinical effectiveness has never been established by well designed, controlled clinical trials. It is not widely accepted and practiced by American physicians. EDTA chelation therapy for atherosclerosis is considered experimental. Its safety and clinical effectiveness will need to be established by well designed, controlled clinical trials."

Their question of *safety* is erroneous, since EDTA had, ***years*** *before*, been approved by the FDA as safe and had, ***years*** *before*, been approved as clinically effective for removal of toxic heavy metals. "Clinical effectiveness" for treating environmental poisoning has long been recognized. That leaves the question of ***needing*** "clinical trials" to show "effectiveness" in treating heart and blood vessel diseases. *Wait* – isn't that what *this* lengthy chapter has been about, detailing advances year after year after year? *Remember the* ***90*** *number?*

Glaringly evident in the PHS statement is the bias held by the conventional medical community, a bias that undoubtedly influenced the "official" government position. The Public Health Service took – *at face value* and without any intellectual challenge – the discriminatory conclusions uniformly expressed by private trade associations of physicians whose practices were based solely on the drug and surgery approach:

> "This [Public Health Service] assessment is based on a search of the medical literature with assistance from the Food and Drug Administration and the National Institutes of Health. The American College of Physicians, American Academy of Family Practice, American Society for Clinical Pharmacology and Therapeutics, American College of Cardiology, American Osteopathic Association … provided assistance with this evaluation either directly or through their members."

The National Heart, Blood, and Lung Institute was a welcome partner in the assassination of chelation therapy.[218] These criticisms were echoed throughout the "academic" community, in their interface with the inquiring public.[219]

Like the Kitchell and Meltzer 1963 "reappraisal" article, the conclusions expressed in this unified stance taken by American medical trade associations – without having *any* new studies or information – were quoted time and again to justify why

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[218] "Chelation Therapy - An informal summary." Department of Health & Human Services. National Institutes of Health. National Heart, Lung, and Blood Institute. Bethesda, Maryland, June 1992.

[219] "Chelation Therapy: A second look." *The Harvard Medical School Health Letter*. Boston, Massachusetts. IX: 1, 1984.

doctors should *ignore* the earlier observations showing that chelation relieved suffering.

Statistics that Tell the Truth Don't Lie

One of the most damning criticisms offered by academic scientists is that many of the studies showing chelation benefits have had so few patients enrolled. Indeed, in the history of medicine, "observations" offered have often been derived by seeing such startling improvements in most of the few patients studied. That so-called limitation was persuasively put to rest by Benson and Hartz in 2000, reporting in the prestigious *New England Journal of Medicine*. They reviewed 136 "reports" of 19 diverse *medical and surgical treatments* (not chelation), because for many years the criticism had been offered that "observational studies find stronger effects than randomized, controlled trials." They found …

> "… little evidence that estimates of treatment effects in observational studies reported after 1984 are either consistently larger or qualitatively different from those obtained in randomized, controlled trials [that are the "gold standard" of research reporting]."[220]

In other words, Benson and Hartz say that consistent observations are *real* and that they *do* matter! *Remember the **90** number?* Is it *real?* Do people really *"get better"* with chelation therapy – or at least *"feel better"?* Or actually find that chelation helps provide life long health?

How can *you* answer this troubling thought, that many (uninformed?) doctors insist that there is *little evidence* that chelation works any better than doing nothing at all? Or that it might even be harmful? You can easily confirm it for yourself: simply arrange to visit the offices of an experienced chelation specialist and sit down in the treatment room. ***Ask the patients*** to share their stories. Before you go, write down the questions you want answered. *Be sure to ask these:*

Would the patients you meet prefer to do *drugs* or *surgery* or chelation?

Have they improved so much that they are now taking *fewer* medications or *lower* doses?

What can they *do* now that they couldn't do before?

Have they repeated testing with their usual doctors? How are they *improving*?

[220] Benson K and Hartz AJ: A comparison of observational studies and randomized, controlled trials. *NEJM* 342(25):1878-1886, 2000.

These are *the* "observations" – *the **real** history* – that *you* will find convincing, and these success stories have formed the basis of the enthusiastic reports in the medical literature for over 50 years. Chelation. Life long health? *You* decide.

In 2002, the ("private nonprofit consumer protection organization") National Council Against Health Fraud (NCAHF) issued a position statement approved by its board of directors: "The National Council Against Health Fraud believes that chelation therapy is unethical and should be banned …"[221] You should know that founder and head of the "Council" is a discredited physician who routinely testifies (for a fee, paid by the State) at various State medical board hearings, against physicians who chelation and other advanced therapies, claiming as an "expert witness" that they "don't work." After *you* interview patients at a chelation specialists office, *you* decide whether statements such as this from the "Council" are based on history and science … or on another agenda. *What's really going on here?*

Chelation Is Available … So Why Are People Still Suffering?

Perhaps you will gain some insights on the history of chelation from some observations offered by L. Terry Chappell, M. D., one of the leading specialists and one who has written extensively about these topics. The following excerpts are from one of his "White Papers," this one on "Integrative Medicine":

> "According to a report by the Institute of Medicine in 1999, there were between 44,000 and 98,000 deaths each year due to medical mistakes in hospitals. This compared to … 43,400 deaths from automobile accidents. Substantial efforts have been made to reduce such mistakes, but minimal progress has been made to date. …..
>
> "Just as Eisenhower warned the nation about the Military-Industrial Complex, others have expressed concern about the Medical-Pharmaceutical Complex. Concentrated Economic Interests in the medical field includes interactions among drug companies, organized medicine, hospitals, medical schools, businesses and industry that fund insurance, and insurance companies themselves, especially managed care. …..
>
> "The FDA [Food and Drug Administration] also has full statutory authority to approve claims for dietary supplements.

[221] "NCAHF Policy Statement on Chelation Therapy." National Council Against Health Fraud. October 7, 2002. Peabody, Massachusetts. Available at < http://www.ncahf.org/policy/chelation.html >, accessed June 4, 2009.

Congress passed the Dietary Supplement Act of 1994, which required the FDA to approve reasonable claims. The FDA refused to comply. In 1999 the Court of Appeals determined that the FDA's restrictive health claim rules were unconstitutional and a violation of the Administrative Procedures Act. Still, the FDA refuses to encourage truthful information to be disseminated about dietary supplements …..

"The Federal Trade Commission has two roles, consumer protection and anti-trust. In recent years, the FTC has filed complaints against several professional societies who teach and advocate Complementary and Alternative Medicine (CAM). The FTC's strategy is to find a claim made at some time by the society and charge them with false advertising, with huge potential penalties. The FTC then seeks consent orders from these organizations. No matter how strong the defense arguments, none of these organizations have had the financial resources to combat the deep pockets of the government. Several have signed consent orders, simply because they have run out funds to pay the legal fees required to pursue their cases in court. …..

"The Federation of State Medical Boards [FSMB] is a private group of Medical Board members, who license medical doctors and osteopathic physicians throughout the US. Following the guidance of Conventional Medicine, the FSMB has labeled nearly all CAM [complementary/alternative medicine] as 'questionable'. The FSMB works with the Association of State Attorneys General, the individual Medical Boards, and Administrative Law Judges, whose salaries are usually paid from Medical Board budgets, to regulate physicians who offer CAM to their patients. A disproportionate number of CAM doctors have been brought before Medical Boards, even with no patient complaints and no concern about causing harm to patients. In this way Conventional Medicine has indirectly discouraged physicians from offering Integrative Medicine to their patients. Despite this threat, more and more physicians are learning about integrative techniques, as they seek new and safer ways to help their patients. Medical students, residents and practicing physicians have asked for more information about Integrative Medicine. Courses are now taught at most medical schools, and there is an abundance of continuing education courses in the field. …..

"The American Board of Medical Specialties (ABMS) has consistently refused to recognize specialties in Integrative Medicine, even if those specialties have functioning Boards of Examiners that

> offer written and oral examinations of high quality. In turn Medical Boards and elements of Concentrated Economic Interests such as insurance companies do not recognize specialties not listed by ABMS. Thus, despite their attempts to achieve and document a high standard of excellence, integrative specialists have been kept out of the official health care network, and Consumers have been forced to pay for their services out of pocket."[222]

White papers such as this, reviewing the current state of affairs in medical practice and politics, have been consistently ignored by the majority of physicians, the "drug and surgery" doctors.

Does *any* of this really *matter* to you? Only if you want to keep chelation therapy available, now or in the future, as a possible *choice* for you and your family. Conventional physicians continue to say that "more research needs to be done" to see whether chelation should be included as a treatment option for various illness conditions. The National Institutes of Health (NIH) has embarked on a major investigation (the TACT study: Trial to Assess Chelation Therapy) which, for all of its shortcomings, at least has the prospect of proving clinical benefits that have been "observed" by doctors and patients for over 50 years. Why, then, would doctors lobby *against* completing the study? In urging the NIH to *abandon* the research, the authors of a 2008 online journal article maintain that …

> "A few case series in the 1950s and early 1960s had found Na_2EDTA to be ineffective for CAD [coronary (heart) artery disease] or peripheral [leg] vascular disease (PVD). Nevertheless, a few hundred physicians, almost all of whom advocate other dubious treatments, continued to peddle chelation as an office treatment. They claim that chelation dramatically improves symptoms and prolongs life in 80% to 90% of patients. In response, academics performed 4 controlled trials during the 1990s. None favored chelation, but chelationists repudiated those findings. We have investigated the method and the [NIH] trial. ….. The trial's outcome will be unreliable and almost certainly equivocal, thus defeating its stated purpose. *We conclude that the TACT is unethical, dangerous, pointless, and wasteful. It should be abandoned*."[223]

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[222] Chappell LT: "A White Paper On Safety and Choice With Integrative Medicine: Proposed Answer To Our Health Care Crisis". Celebration of Health Association. Available at < http://www.healthcelebration.com/MoreInformation/AWhitePaperonSafetyandChoice/tabid/89/Default.aspx >, accessed June 3, 2009.

[223] Atwood IV KC, et al: Why the NIH trial to assess chelation therapy (TACT) should be abandoned. *Medscape J Med* 10(5):115, May 13, 2008. Available at < http://www.pubmedcentral.nih.gov/articlerender.fcgi?tool=pubmed&pubmedid=18596934 >, accessed June 5, 2009.

To insist that a 5 year treatment study approved and monitored by the National Institutes of Health is "unethical, dangerous, pointless, and wasteful" is not only arrogant but also wrong on all points. A rebuttal article[224] authored by former congressional committee staffer Beth Clay offers this pointed conclusion:

> "An important clinical trial has been hindered by publication of an agenda-driven 51-page article in MedScape, despite the lack of expert qualifications and known bias of the authors, and the fact that most authors derive income from legal compensation for testifying against medical professionals who use chelation or other alternative or complementary therapies in their practices. …..
>
> "Investigation of off-label uses of FDA-approved drugs is essential for progress in medicine."

Congressman Dan Burton, chair of the House Committee on Government Reform, had these telling comments at a 1999 hearing:[225]

> " **…..** The off-label use of chelation therapy is an excellent example of an alternative therapy with tremendous bias against it within the medical establishment and within the government. …..
>
> "The committee has concerns that doctors and the public, who refer to MEDLINE [computer database] for access for medical information, are not gaining access to novel treatments that have not been accepted in mainstream publications. It is widely known that there is a publication bias against alternative medicine in conventional journals."

The significance of abandoning an NIH study takes on a more ominous cast when you consider the following resolution, passed by the AMA House of Delegates at its December, 1984, meeting in Honolulu, Hawaii:

> "RESOLVED, American Medical Association reports show that there is no scientific documentation that the use of chelation therapy is effective in the treatment of cardiovascular disease …; and be it further
>
> "RESOLVED, That if chelation therapy is to be considered a useful medical treatment for anything other than heavy metal poisoning … it is the responsibility of its proponents to (a) conduct properly controlled scientific studies, (b) adhere to Food and Drug Administration (FDA) guidelines for the investigation of new drugs,

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[224] Clay B: Study of chelation therapy should not be abandoned. *J Am Phys Surg* 14(2):51-57, 2009.

[225] "Cardiovascular Disease: Is The Government Doing More Harm Than Good?" EDTA Chelation Therapy. Hearing before the House Committee on Government Reform. March 10, 1999. Available at < http://commdocs.house.gov/committees/gro/hgo59973.000/hgo59973_0.htm >, accessed June 5, 2009.

and (c) disseminate results of scientific studies in the usually accepted channels."[226]

So … ***you should study chelation*** unless, of course, the doctors want to ***shut you down!*** Once again, you are faced with controversy among physicians – *Whom should **you** believe?* Consider this: one group of doctors wants *more* research studies to be done, to prove their claims of benefits that they have observed over the past 50+ years; the other group wants research efforts to be avoided and abandoned, since *obviously* chelation "doesn't work." The question comes … which group might have a vested (financial) interest in dismissing the competition represented by chelation and continuing to offer drugs and surgery? Which group is really seeking the ***truth?*** *How do **you** want to write the future history, **your** future history? Remember the **90** number?*

The Postal Service, Social Security, Medicare, Veterans Administration Hospitals, and Now … *Your Health?*

While no one would claim that any Congressman is biased against a reasonable medical treatment and, therefore, would not want to have his mind confused with "the facts" … the following exchange at a 1999 hearing on chelation therapy held by the House Government Reform[227] give you pause to reflect [the person speaking is indicated by CAPITAL letters]:

> "[Committee Chair Representative Dan] BURTON [at the start of the hearing, from which Committee member Representative Waxman had just excused himself after making a brief introductory statement]: It kind of bothers me that, you know, no disrespect to Mr. Waxman, but he reads the information that comes in from the agencies, i.e., the National Heart, Lung, and Blood Institute, and makes a statement about that, and then leaves before we even have a chance to have the chelation experts testify. That is disappointing."

Late in the hearing, after Mr. Waxman had returned to his seat …

> "Mr. WAXMAN. Mr. Chairman, I have a conflict.
>
> "Mr. BURTON. Well, you know, Mr. Waxman, you have been gone all day. We have been sitting here hearing testimony. We had doctors, prominent, eminent doctors here, testify about the efficacy of chelation therapy. You weren't here to hear their testimony, which

[226] Resolution 66 (I-84) chelation therapy. American Medical Association. Reference committee E p 430, 1984.

[227] "Cardiovascular Disease: Is The Government Doing More Harm Than Good?" EDTA Chelation Therapy. Hearing before the House Committee on Government Reform. March 10, 1999. Available at < http://commdocs.house.gov/committees/gro/hgo59973.000/hgo59973_0.htm >, accessed June 5, 2009.

was disconcerting. If you need to have 5 minutes now, we will give you 5 minutes.

"Mr. WAXMAN. Mr. Chairman, I don't need a lecture from you on how to do my job. I have conflicts in my schedule. I am sorry that I was not here to listen to all the witnesses. I would have regretted not being here and not listening to other people in other meetings that I have at the same time. But I am entitled under the rules to be able to ask questions, and the Chair went 5 minutes beyond when his time had expired. After I leave, He can continue on in another round. Those are the rules; so let's follow the rules. Under the rules, I want to ask some questions."

If Representative Waxman had been the *only* committee member to leave, you might understand that, as a very important Congressman, he has more vital issues concerning him than just protecting free choice in medical care options for millions of Americans. Apparently other members attending had more pressing business as well:

"Mr. BURTON. My good friend, Dr. Vega.

"Dr. MARCIAL-VEGA. How are you doing? Thank you, Mr. Chairman, and one member of the committee that I see.

"Mr. BURTON. Rest assured that the other Members will get the information. I promise."

Certainly at some future time, *your* health and that of *your* family and friends will receive from the Congressmen the attention you feel you deserve, so that they can insist on government agencies giving chelation the proper consideration it needs rather than a casual dismissal. Right? After all, two-thirds of Americans are ***still dying*** from heart attacks and strokes, despite all the advances in conventional medical and surgical technologies.

Well, *maybe*. Congressman Burton was moved to ask the chelation specialist physicians, appearing as witnesses before the Committee, about a *suspicion* that was gnawing at him:

"Mr. BURTON. OK. I have a pretty hard question, and then I will accede to my colleague here. I suspect from your testimony, and the testimony of other doctors with whom I have talked about the chelation therapy and alternative therapies, that there is not only a bias by the conventional medical system, the AMA, the IMA, Indiana Medical Association, and all the medical associations, but that there might be some kind of a — I don't like to use word ''conspiracy''— but an organized opposition to these alternative therapies because it might cut into the profits that they might be making from

pharmaceutical companies or other specialties. Do you have that kind of suspicion? Or is there any indication that you have seen that that is the case? …..

"[Chelation specialist Dr. Norman] LEVIN: I think that there has been a deliberate campaign to produce the misconception that physicians doing chelation are akin to gypsies in the business of selling driveway repair jobs to little old ladies who don't know any better. Nothing could be further from reality. Most of the chelating physicians I have met at conferences were trained at the finest medical universities in the country. Many are board-certified cardiologists. And a surprising number used to do cardiovascular surgery."

None dare call it conspiracy unless you have letters or memos or telephone transcripts that prove a concerted and deliberate effort to interfere with the activities of others. But is it *odd* that "all" the "other" doctors seem to have the *same mind-set* about chelation, and the *same interest* (even the *same words*) in discrediting chelation practitioners and the results gained by their patients.

The Scientific Facts Get More and More Persuasive

The year 1993 will be remembered for the siege and storming of the Branch Davidian religious compound outside of Waco, Texas, *and* for the first bombing of the World Trade Center in New York City. But more important in the big picture was a brief announcement from CERN, the European Organization for Nuclear Research in Geneva, Switzerland, that an emerging tool of the information age, the "World Wide Web," would soon be available free to the general public. The significance of "free access" to information could barely be appreciated then – the Web *now* might have as many as 50 ***b****illion* pages and is explosively growing daily! Yet, *today's* easy information-gathering would have been treasured by Stephen F. Olmstead, M. D., a clinical medicine professor and cardiologist at the University of Washington School of Medicine in Seattle, Washington. He had used chelation to treat lead toxicity when serving in the Indian Health Service. Unfamiliar with its usage in heart and blood vessel disorders, he felt that it deserved the same objective scrutiny as any other drug when he was asked by the first director of the Office of Alternative Medicine at the National Institutes of Health (NIH) to review the prospect of developing research protocols. Olmstead was committed to maintaining a purely objective viewpoint, to finding honest answers. Like early chelation researchers, he waded through mountains of journals and files bulging with sheaves of papers, all needed for him to assemble his report to the government in 1994. Seeing the value in outlining his findings for the

benefit of future investigators, he published in 1998 a definitive review of chelation therapy.[228]

> "Whatever the current prevailing medical opinion regarding the use of EDTA chelation, patients are seeking out this treatment in hopes that chelation therapy will improve their health. Physicians continue to provide chelation therapy on demand despite strong opposition from many of their peers and sanctions from regulatory agencies. Whether history will place EDTA chelation among ineffective treatments, such as bloodletting, or memorialize the therapy as an effective procedure irrationally rejected by organized medicine, remains to be resolved." [page v, conclusion of Preface]

The discouraging medical-political *setting* in which chelation therapy is currently practiced is, for the most part, the *intended* result of those whose specific mind-set has been to create a disparaging history for this step-child treatment. What if … chelation treatments *only* helped with oddball problems with which only a very few people suffered? What if … physicians made little or no income with chelation? What if … chelation treatments made no improvements with heart and artery disorders, so there was *no* "competition" with doctors who make substantial income from prescribing drugs and performing high-risk operations? What if? Well, if chelation were like other "orphan drugs," it could help only a few people. And it would provide little (if any) financial disruption to the Medical Establishment. And, unless you had a special need for help with your oddball illness, you would never hear about chelation at all. Believe it? Believe it!

Important to recognize is that every single chelation therapy specialist began his professional career as a *conventionally-practicing* physician. That means that he or she graduated from basic science and clinical training in one of the 125 accredited university medical schools in the United States or in one from other countries. After graduating with an M. D. or D. O. degree, each then served an internship year (and perhaps even more years in advanced specialty training) in one of the 150+ academic medical centers (or hundreds of larger community hospitals) in this country or in one overseas. The choice to offer chelation as a treatment program came from their *chance* observation of patient benefits they had *never* seen in their *usual* drug and surgery practice. Perhaps the case is better

[228] Olmstead SF: *A Critical Review of EDTA Chelation Therapy in the Treatment of Occlusive Atherosclerotic Vascular Disease*. Klamath Falls, Oregon: Merle West Medical Center Foundation, 1998.

made by chelation specialist Norman Levin, M. D., in testimony offered at a 1999 hearing of the House Committee on Government Reform:[229]

> "I always make it a point to talk to the new physicians coming to a conference for the first time. And one of the questions I ask is why are you here. Almost all report getting interested in chelation therapy because patients requested that they look into it. Then they become further involved for the same reason that I did, because it works. …..
>
> "I think it is important to point out that you would be hard-pressed to find a doctor who administers chelation who doesn't chelate themselves and their family. To me, that says something significant about the nature of the treatment and the physicians who are offering it to their patients.
>
> "And not uncommonly, the results are so dramatic and life-changing in people that their gratitude brings tears to your eyes because it is such a wonderfully fulfilling feeling to be treating people this way and to so consistently be getting this kind of feedback."

A comment offered by Representative Dennis Kucinich at that 1999 hearing of the House Committee on Government Reform[230] gives this poignant reminder:

> " … I would like to say that I think these hearings on alternative and complementary medicine are important because, as much respect as we all have for allopathic practice *[conventional medical care as provided by usual M. D.s]* in this country, which is second to none in the world, it is important that we keep our minds open with the new frontiers because the allopathic practice, which we recognize today as being the best, was advanced through many years of having to push the barriers and create debates over their practice. And things that were years ago considered at the fringe are now at the heart of allopathic practice.
>
> "So we have to consider that our understanding of human health and the ways in which we treat disease keep changing. And it keeps changing because we learn of newer and sometimes alternatively effective ways of doing things."

The problem of *suppression* of this medical miracle unfortunately *appears* to come down to this, as paraphrased from chelation specialist Elmer Cranton, M. D.: "If

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[229] "Cardiovascular Disease: Is The Government Doing More Harm Than Good?" EDTA Chelation Therapy. Hearing before the House Committee on Government Reform. March 10, 1999. Available at < http://commdocs.house.gov/committees/gro/hgo59973.000/hgo59973_0.htm >, accessed June 5, 2009.

[230] "Cardiovascular Disease: Is The Government Doing More Harm Than Good?" EDTA Chelation Therapy. Hearing before the House Committee on Government Reform. March 10, 1999. Available at < http://commdocs.house.gov/committees/gro/hgo59973.000/hgo59973_0.htm >, accessed June 5, 2009.

chelation were adopted as a recognized treatment program, a significant number of practicing physicians and surgeons would suffer a substantial economic *dislocation*."[231]

Chelation *Lies?* Heart Surgery *Truths?*

The real question, when "getting down to brass tacks," is whether ***all*** chelation physicians – and their patients? – are ***lying****?* Deceiving. Fabricating. Fibbing. Exaggerating. Stating something that they *know* to be false with the intention that others will gullibly take it for the truth. Certainly that's what conventional physicians would appear to "sorta kinda" *mean to say* when they *dismiss* dozens of years of studies, case reports, and observations. Here's a telling conclusion from a very detailed statistician review from the University of Birmingham in the United Kingdom, referring to the 1990 report by Olszewer and colleagues published in the *Journal of the National Medical Association*:

> "***Implausible*** intervention results: ***all*** [Chelation Therapy] patients ***improve dramatically*** and all placebo [control] patients remain essentially unchanged or deteriorate; after cross over to [Chelation Therapy treatments for the last half of the study,] the original placebo group ***all improve dramatically***."[232]

What "exactly" does the term "*implausible*" mean? Try these synonyms: unlikely, improbable, questionable, doubtful, unrealistic, far-fetched, incredible, unbelievable, inconceivable, fanciful, ridiculous, absurd, preposterous, outrageous, hard to swallow, cock and bull. Or … *maybe* they just meant that they were "*surprised*" that the patients did so very well, as had been repeatedly "observed" by Clarke and dozens of other physicians and scientists since the mid-1950s? Or … maybe, you might ask, do *they* honestly believe that *all* chelation doctors ***and*** *all* of their patients really ***are lying?*** After all, one of Connock's concluding statements is that "The direction of evidence indicates that [Chelation Therapy] may ***completely lack benefit***."[182] What "exactly" does "*completely*" mean? *Totally*. *Utterly*. *Wholly*. *Fully*. *In every way*. *In every respect.* You might guess that we ***must*** be lying. ***Remember the 90 number?***

So you could go ahead and *ignore* the invitation to visit any chelation therapy clinic, overseen by an appropriately trained, experienced, and conscientiously practicing specialist M. D. or D. O. After all, Connock's

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[231] Cranton EM: private communication in years past with Trowbridge JP.

[232] Connock M, et al: "Chelation Therapy for Intermittent Claudication and Coronary Heart Disease": report #33. 2002. Department of Public Health & Epidemiology. University of Birmingham. Birmingham, United Kingdom. Available at < http://rep.bham.ac.uk/pdfs/2002/chelation.pdf >, accessed June 1, 2009. Emphases added.

conclusion is that there is a good chance the patients and their doctors and nurses might try to give you "implausible" information. But at least you *could* read for yourself the many reports published in the medical journals. Some of them are available online, others through the library at your closest medical school. But you might protest … "I'll get confused, I don't understand the medical language … and how would I know whether the *evidence* is any good?" Dictionaries and a doctor friend could help with the first two issues. But the third one could be a real puzzler. Recall "***evidence***-based medicine"? That's the scientifically rigorous effort to "apply the current best evidence in making decisions about the care of individual patients." *Should* be simple, right? But it gets a little muddy when you start looking at the *conventional* treatment methods accepted and approved by virtually "all" doctors for heart disease. ***What??!!***

Many will remember 1995 as the year when "The Juice," legendary football running back O. J. Simpson was acquitted of double murder in the deaths of his former wife, Nicole Brown Simpson, and her friend, Ronald Goldman. In the words of defense attorney Johnnie Cochran: "If the glove doesn't fit, you must acquit." The evidence simply wasn't persuasive enough for the jury to find him guilty. But what about "*problems*" with the ***evidence*** regarding whether heart bypass ***surgery*** is a "safe" and "effective" treatment? In 1995, chelation specialist Julian Whitaker, M. D., editor of a wildly successful health newsletter[233], tackled this "evidence" problem head-on when he published a marvelous book[234] expanded from his lectures presented in 1992. Daring to read the original journal articles (ask *your* doctor if he has done so!) and to share *their* conclusions, Whitaker points out that …

> "The first major study of the results of bypass was the publicly funded Veterans Administration Cooperative Study (VACS) … The surgical group of 286 patients got bypass surgery, while the medical group of 310 patients continued with their regular therapy.
>
> "At the end of the trial three years later, the difference between the two groups' survival rate was statistically insignificant. The surgical group had a survival rate of 88 percent, and the medical group's survival rate was 87 percent. …..
>
> "If bypass is meant to extend the life of low-risk heart patients, then in this respect, it was a failure."[page 16]

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[233] For a list of Dr. Whitaker's bestselling books, go to < http://shop.whitakerwellness.com/store/pc/viewCategories.asp?idCategory=2 >. To subscribe to his monthly newsletter, go to < http://www.drwhitaker.com/Shared/Subscribe.aspx >.

[234] Whitaker J: *Is Heart Surgery Necessary? – What Your Doctor Won't Tell You*. Washington DC: Regnery Publishing, 1995.

But wait – there's more.

> "The Coronary Artery Surgery Study (CASS) … sought out surgical centers with the highest patient volumes, the lowest death rates, and the most experienced surgeons and cardiologists. The results were shocking. …..
>
> "… [These] were patients with very serious heart problems.
>
> "… After five years, the two groups [surgery vs. drugs] were statistically identical. The nonsurgical group had an annual mortality [death rate] of 1.6 percent, while the surgical group had an annual mortality of 1.1 percent, but that figure does not include the 1.4 percent perioperative [at the time of surgery] mortality. … The annual survival rate for those who refused surgery this time was even better than in the case of the VACS nonsurgical group – more than 98 percent.
>
> "CASS researchers concluded: "patients similar to those enrolled in this trial [remember: very serious heart disease, meaning a history of heart attack or persistent angina chest pains and a 75 percent or greater blockage in one, two, or three main arteries] can safely defer bypass surgery until the symptoms worsen to the point that surgical palliation [operating to ease pain *not* to cure the patient] is required." …..
>
> "A ten-year follow-up study on the CASS patients was published in 1990, comparing the death rates of the medical and surgical groups. The numbers were still statistically identical. About 80 percent of both groups were still alive. The researchers again concluded that bypass surgery did not prevent heart attacks or cardiac death."[pages 17-18]

But wait, there's more.

> "In the eight-year follow-up of another group of Veterans Administration heart patients, 468 patients were randomized into high- and low-risk groups. …
>
> "Among 181 low-risk patients, cumulative mortality, after eight years of follow-up, was significantly lower in the medically-treated patients (16.8 percent) than in the group that had surgery."[pages 18-19]

But wait, there's more.

> "The European Coronary Artery Surgery Study (EuroCASS) Group came out with a study in 1988 that purported to prove that bypass patients had a much higher survival rate than those treated medically. But when they looked at the same patients years later, they

were forced to conclude that "the patients originally assigned to surgical treatment who survived to five years fared worse than those in the medically treated group, and the benefit of early surgical treatment gradually decreased.

"EuroCASS also found that patients who underwent surgery had just as many subsequent heart attacks as those who were treated medically. [Medical treatment did not include chelation therapy or intensive nutritional support that has finally been recognized by the American Heart Association as helping maintain or restore heart function.] …

"Not only does bypass not cure heart disease, it also does not extend longevity in most patients." …

" … Dr. Harvey Simon of Harvard Medical School, reviewing the current literature, notes that 'after five years, 40 percent of bypass grafts are at least partially blocked, and after 10 years the failure rate is about 75 percent."[pages 19-20]

But wait, there's more. At least bypass is pretty *safe*, right?

" … A major study published in the *New England Journal of Medicine* concluded that progression of significant heart disease – defined as a loss of 25 percent or more of the lumen (the cavity of a tubular organ [such as a blood vessel]) – was more than ten times as frequent in bypassed arteries as in those that were not operated on."[page 21] …..

" … [A] six nation study published in 1990 … found that a person after bypass runs a high risk of stroke, severe cases of anxiety and depression, and even hallucinations. This same study concluded that bypass was more traumatic than any other surgery. …..

"Among the other side effects of bypass surgery are pneumonia, hemorrhage [bleeding], heart attack, cardiac causalgia (intense, burning pain), irregular heartbeat, bursting wounds, and reoperation due to reclosed grafts.

"With each repeated procedure, the risks increase geometrically."[pages 23-24] …..

"The worst side effect of bypass surgery is, of course, death. While the death rates at specific hospitals can range anywhere from zero to 52 percent, the national average is about 3 to 5 percent. Would you fly on an airline if one out of twenty of their flights crashed? …..

> " … Every year some ten thousand people who have had bypass surgery die from heart attacks (that does not include the 5 percent who suffer from heart attacks during the surgery itself). …..
>
> "The Stanford [University, Palo Alto, California] researchers have found that [the artery and tiny branches beyond the bypass graft or, in angioplasty balloon surgery, beyond the opened blockage] constrict within thirty minutes of surgery and stay constricted, negating the effects of the operation before the patient even comes out of anesthesia.
>
> "How many bypass operations are unnecessary? Nearly half, according to a Rand Corporation study published by the *Journal of the American Medical Association* in 1988."[pages 24-25]

Surely *your* doctor has thoroughly *studied* these and other critical studies, in order to make an *informed* recommendation for you to have bypass surgery. Feel free to discuss with him or her just how these published findings from the most respected surgery centers could mean that ***you*** might be at risk.

You might suspect that surgery has improved over the past 10 to 20 years and that outcomes are so much better as to make heart bypass or angioplasty balloon surgery and stents more desirable now. Just remember – these studies took into account the drugs available back then ("medically-managed" or "non-surgically managed" patient groups) … more refined medications are available today, just as better surgical procedures are now used. Yet, neither of these produces survival statistics nearly as impressive as a chelation therapy program. Chelation "treats" all of your 60,000+ miles of arteries … surgery treats only a few inches at a time. *You* decide which therapy is more likely to offer you life long health.

Doctors might feel "justified" in claiming that "observations" from chelation studies are overly optimistic and that *chelation* is "unsafe" – but who could argue with the survival and side-effect numbers found in large long-term studies by the smartest surgeons in the world? At best, your heart doctor might offer, "Well, I doubt that chelation is likely to hurt you, but I don't know that it could help you." After you have read this history essay, after you have "seen the numbers" … what do you feel your cardiologist or surgeon, in all honesty, ***should*** say to you?

What About Angioplasty Balloon Surgery *Truths?*

So … if bypass surgery maybe has some problems, what about angioplasty balloon surgery? Oops – there's more. Again, Dr. Whitaker reviews major

published studies summarized in his book, *Is Heart Surgery Necessary? – What Your Doctor Won't Tell You*:

> "When artery walls are injured, fatty deposits form and are soon joined by other substances, including calcium, which makes the arteries sclerotic – that is, hard and rigid. [Balloon] Angioplasty is an attempt to push the plaque aside, allowing freer blood flow. …
>
> "The risk of death increases with age. One study found the death rate from angioplasty in Medicare patients was 3.9 percent, roughly one in twenty-five patients. The complication rate was 13.5 percent. …..
>
> "Restenosis is the clinical term for reclosure of an artery. The rate of reclosure in angioplasty is scandalous. More than a third of treated arteries close up within six months. …..
>
> "What happens when a procedure becomes popular and profitable, even though it doesn't work? The medical establishment will go to great lengths trying to fix it. …..
>
> "One attempt was something called a 'stent,' a small piece of coiled wire that resembles the spring inside a ballpoint pen. The stent is inserted inside the artery just after the angioplasty balloon has expanded and the artery is open. It is supposed to keep the artery from closing back up. …..
>
> "A study published in the American Journal of Cardiology found significant bleeding and damage in 16.8 percent of stenting procedures."[pages 57-59]

Incidentally, stents now are coated with chemotherapy or embedded with radioactive particles, so every cell of your body can be exposed to low levels of these "toxins," which are *intended* to reduce the reclosure rate of angioplasty-"treated" heart arteries.

But wait, there's more. Dr. Whitaker simply couldn't ignore the studies from the most prestigious medical centers, published in the most respected medical journals. He goes on to offer …

> "In fact, angioplasty and bypass are being performed repeatedly on the same patients. … As Dr. William Castelli, head of the prestigious Framingham Heart Study, says, 'Angioplasty is like a potato chip. You can't have just one.' …..
>
> " … In the Emory [University, Atlanta, Georgia] study 10 percent of the angioplasty patients required emergency bypass surgery! …..

"In the Emory study 14 percent of the bypass patients and 63 percent of the angioplasty patients required a repeat procedure within three years. …..

"As part of this new 'marketing strategy' [where medical "practitioners are … behaving like entrepreneurs, seeking out and acquiring new patients"], EKGs and stress tests are often offered at a very low cost by hospitals. They may seem like a good deal. But those screening devices are often used to find potential patients and funnel them into bypass or angioplasty.

"As a result even patients who are not sick can find themselves being wheeled into the operating room.

"An angioplasty is an operation. If your doctor says you need one, get a second opinion."[pages 60-62]

And if you believe the Harvard cardiology studies from the late 1980s by Dr. Thomas Graboys, you have no need to rush into surgery in the coming weeks (or even *years?*), since you are not likely to be a "ticking time bomb" unless you're suffering with worsening chest pains while simply sitting or lying down.

If you come to realize that you ***do*** have the time to learn about whether chelation therapy might be a wonderful choice for you, then pause to reflect on comments offered by chelation expert Norman Levin, M. D., at a 1999 hearing of the House Committee on Government Reform:[235]

"It's a sad comment on the times that most patients choose not to tell their other doctors that they are taking chelation therapy because they are afraid of the response that they will get from their other doctors. …..

"Why do people come to me for chelation therapy? I don't advertise or market my practice in any way, nor do I give public talks to recruit patients. We don't even have a brochure to hand out or fliers or any kind of promotional material. Nevertheless, I see two to four new patients a day.

"Most of the patients that I see have already been through the so-called system and have either not responded satisfactorily or have had such bad experiences one way or the other that they refuse to continue on the conventional or, ''acceptable'' medical path.

"Most of the people who come to me are there because of word of mouth. They have come because a patient recommended the

[235] "Cardiovascular Disease: Is The Government Doing More Harm Than Good?" EDTA Chelation Therapy. Hearing before the House Committee on Government Reform. March 10, 1999. Available at < http://commdocs.house.gov/committees/gro/hgo59973.000/hgo59973_0.htm >, accessed June 5, 2009.

> treatment based on their own experience or they know of someone who has responded well to the treatment. Or they have read about chelation and want to try a non-invasive therapy before undergoing surgery."

These comments are far from casual, this is *sworn testimony* before Congress. And the *viewpoints* are far more than casual as well. Practicing physicians might have a bias, but what about medical school professors? Chris Calapai, D. O., a member of the American College of Nutrition and a professor of family practice at the New York College of Osteopathic Medicine makes the case quite plainly:

> "Doctors do not realize that there are phenomenal risks to even the smallest surgical procedures when you're trying to remove or strip off the cemented type of plaque [from blood vessels]. ….. When you compare the risks from surgery to the absolutely nil possibilities of having adverse reactions from chelation, it almost boggles the mind as to why doctors are constantly pushing for all these surgical modalities before trying something like chelation."[236]

Once again, we find that we're back to … "*Remember the **90** number!"*

Chelation Helps Problems Far Beyond *Any* Operation

Perhaps this history essay emphasizes too much the *heart blockage* problems treated by chelation … and overlooks giving details on how ***all*** blood vessels of your body can be improved. What your doctor might forget to explain to you is that the primary precursor to heart disease, atherosclerosis (fatty, hardened, blocking arteries), is *not* a "localized" injury but rather is shows a "systemic" condition. In other words, atherosclerosis blockage changes are present *not only* in the coronary (heart) arteries, *but also **everywhere else**,* in the arteries of your brain, lungs, liver, kidneys, legs, ***all*** other areas. While chelation can treat *all* of these many different areas, surgery has devised different and specific operations for each. Shuffle the deck, draw a card, any card – yep, we got an operation for that *… you're a winner!*

Beyond helping with blood vessel hardening and blockage changes throughout the 60,000+ *miles* of arteries, veins, and capillaries in your body, chelation therapy can have dramatic benefits for organ *functions* as well. Remember, toxic metals can "deposit" in any part of your body, any organ, any

[236] Professor Chris Calapai, D. O., as quoted by Null G, "Chelation Therapy: One of Medicine's Best-Kept Secrets?" From Natural Health Solutions section of Natural Healing House website. Available at < http://www.naturalhealinghouse.com/hm_secret.htm >, accessed June 8, 2009.

cell. Toxic heavy metals interfere with normal functions – energy production, maintenance and repair, cell reproduction, and just doing all the jobs that you need for those cells to be doing. Toxic heavy metals also dramatically enhance the formation of oxidizing free radicals, which can damage cell functions beyond repair.

Medical doctors have no drugs except chelation therapy to remove toxic metals. Modern medicine has no other method except chelation therapy and nutritional supplements to reduce free radicals and reverse these damaging changes. Surgeons have no operations that can remove toxic metals and free radicals. The only "reversing-damage" operations they have are those that remove organs or "patch" problems or implant "new plastic and new steel." *Yet, **these toxic metal burdens must be treated** because these are **the** **reasons why people become ill!*** Toxic metals and free radicals, when present in cells or tissues of someone having unsuspected mild (or even profound) nutritional deficiencies,[237] can be overwhelmingly amplified in the destructive changes they cause.

"Nutritional deficiencies?" Most people think that they "eat well," but the studies show otherwise. Even when food selections *are* reasonably good, reviews published by the United States Department of Agriculture repeatedly show that various nutrients – especially minerals and vitamins – are sadly missing in crops grown in many parts of the world, *including* here in America. Even in fresh foods. Certainly in canned and cooked foods. "Refined" and "junk" foods often are "empty calorie" foods, providing calorie intake but few (if any) essential nutrients. Synthetic chemicals present in foods (bleach, additives, artificial sweeteners, sugars in drug-dosage rather than flavor enhancing amounts, "high fructose corn syrup," "corn syrup solids," pesticides, preservatives, emulsifiers, stabilizers, imitation vitamins, inorganic minerals, and so on) can affect the availability of critical nutrients needed for health.

Cooking methods themselves – such as boiling, microwaving, "over"-cooking, intensive grilling – can alter nutrient-dense (good) foods by destroying or removing susceptible nutrients, far more readily than people expect. Even insufficient daily water intake – as has been documented in many studies in America and elsewhere – can challenge your wellbeing and comfort.[238][239][240]

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[237] Gaby AR: Nutritional factors in cardiovascular disease. *Journal of Advancement in Medicine* 2(1&2):89-105, 1989.

[238] Batmanghelidj F. *Your Body's Many Cries for Water*. 3rd ed. Global Health Solutions, Inc. 2008.

[239] Batmanghelidj F. *Water: For Health, for Healing, for Life: You're Not Sick, You're Thirsty!* Grand Central Publishing. 2003.

Former United States Surgeon General C. Everett Koop cautioned, "Your choice of diet can influence your long-term health prospects more than any other action you might take."

What about when food *selections* are "less appropriate"? Consider this: about 25 per cent of the American food dollar is estimated to be spent every day on … "fast foods." And every day about 47 million customers are served daily at … you guessed it, the *Golden Arches*. Ronald has 20 per cent of the fast-foods market share … and he would like to welcome you with popcorn and a Coke as you settle into your comfortable chair … to watch *Super Size Me*. This Academy Award-nominated 2004 film was produced by and starred Morgan Spurlock, and the film was the 10th largest grossing documentary of all time, at over $28 million worldwide[241] (of course, *Mickey-D* is worldwide!). (DVD available at amazon.com and other retail outlets) He filmed his "progress" (a frightening *decline* in his health, gaining over 24 pounds) as ***he ate every meal for a month at McDonald's*** (*super-sizing* whenever he was asked: only nine times). He did ***what??!!***

Results, of course, would have been similar at any fast-food "burger joint." Despite insistent advice from Spurlock's three doctors during the last week that he was placing his health at serious risk, including prospect of a heart attack, he completed his dining disaster *and* the movie. Were his doctors *serious* in their warnings? Pause to realize that many stop-n-go locations offer major discounts on America's favorite beverages – such as 99 cent specials for 44 ounce soft drinks – ***each*** containing over 140 grams of sugar, over ***500 calories!*** Consider that member of Parliament and English physician to Queen Elizabeth I, Thomas Moffett (1553-1604), had this to offer, long before the era of modern drugs and surgery: "Men dig their graves with their own teeth and die more by those fated instruments than by the weapons of their enemies."

How easy is it to "eat natural" and "eat healthy"? Actually, it's a whole lot easier to eat "the ***other*** way": you'll bump into over *35,000* McDonald's locations around the world – dozens of thousands of others featuring "quick serve" food. From 1982 to 2003, American "quick service restaurant" annual revenues have mushroomed from $26 billion to over $126 billion while during the same period, obesity rates ballooned more than double, to over 30 per cent according to the

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[240] Batmanghelidj F. *Obesity Cancer & Depression: Their Common Cause & Natural Cure*. Global Health Solutions, Inc. 2005.

[241] Super Size Me movie article at wikipedia, available at < http://en.wikipedia.org/wiki/Super_Size_Me >, accessed August 5, 2009.

Centers for Disease Control and Prevention.[242] By 2006, per person expenditure for the "hurry-hurry" fast food lifestyle in America was the highest in the world, approaching $600 annually.[243] The White Rabbit in Alice in Wonderland would be proud of many of us: "No, no, no, no – I'm overdue! – I'm really in a stew! – No time to say "goodbye," hello! – I'm late! – I'm late!! – I'm late!!!"[244] The roles played by food selections, amounts, and cooking methods in accelerating degenerative disease onset and progression cannot be underestimated.[245] Not only can critical nutrients (essential for organ functions) fall into short supply,[246] but also toxins and free radical chemicals can challenge the wellbeing of even those who fancy themselves to be quite healthy.

Chelation therapy does not, in and of itself, "repair" damage caused by inappropriate food choices but … your body is better able to repair itself when toxic heavy metals are reduced. Further, chelation specialists will evaluate your nutritional status and other health risks and prescribe specific therapeutic-dosage supplements and dietary changes intended to enhance your health and wellbeing. The "damage" caused by toxic exposures (heavy metals and various chemicals, including preservatives and such in packaged or treated foods) can cause or contribute to an astonishing variety of illnesses with which your family and friends are suffering. Dementia, Alzheimer's, memory and concentration difficulties, lightheadedness, visual changes, hearing difficulties, head "pressure," pulsating noises in the background – these are examples of several distressing brain problems that have shown improvement with chelation.

The list of problems that can arise over time in your brain is long, and you can imagine the lists that can be written for *every other organ or system* in your body. Yes, chelation therapy can help *many* of them. Rashid Buttar, D. O., chair of the American Board of Clinical Metal Toxicology, has recently prepared a series of entertaining color DVD lectures ("Know Your Options – The Medical Series") that persuasively explain how people become ill. What is even more important is

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[242] "Fast Food, Addiction, and Market Power" article, in BNET business publications, derived from J Agric Resource Econ, Dec 2007, by Richards TJ et al., available at < http://findarticles.com/p/articles/mi_hb5844/is_200712/ai_n32251930/?tag=content;col1 >, accessed July 30, 2009.

[243] Hofman O, Who eats the most fast food?, EuroMonitor International, August 11, 2006, available at < http://www.euromonitor.com/Who_eats_the_most_fast_food >, accessed July 29, 2009.

[244] "I'm late," from "Alice in Wonderland," music and lyrics by Sammy Fain and Bob Hilliard, at Disney Song Lyrics, available at < http://www.disneyclips.com/lyrics/alicelyrics1.html >, accessed August 5, 2009.

[245] Alfthan G, Pikkarainen J, Huttunen JK, et al. Association between cardiovascular death and myocardial infarction and serum selenium in a matched-pair longitudinal study. *Lancet* 1982;2(8291):175-179.

[246] Willett WC, Morris JS, Pressel S, et al. Prediagnostic serum selenium and risk of cancer. *Lancet* 1983;2(8343):130-134.

that these videos show how advanced medicine specialists (M. D.s and D.O.s using chelation therapy, nutritional prescribing, dietary recommendations, and lifestyle changes) can dramatically improve many troubling problems and degenerative illnesses. (DVDs with supporting booklets available at amazon.com, at www.themedicalseries.com, and other retail outlets.)

This chapter is a history of chelation therapy, not one of heart bypass and balloon angioplasty procedures. So … why are all *those* details given here? Simply because the critics of chelation claim that 50+ *years* of published studies should be ignored, despite the fact that most of them show dramatic clinical improvements even when the patient numbers were few. But the *real* question is … why are cardiologists and surgeons ignoring their *own* studies, from major medical centers, with hundreds of patients … which show clear-cut evidence that bypass surgery and angioplasty are extremely risky and their success rates are disappointingly dismal?

So Why Do People Foolishly Choose Operations Over Chelation?

The *history of chelation* oddly enough shows you just *why* people routinely choose instead to have surgery – whether bypass or balloon angioplasty – when they *could* try chelation first and perhaps find their condition much improved for years to come. *(Remember the **90** number?)* Why would people walk (or be wheeled) right *past* chelation offices and into the hospital operating rooms? Well, conventional doctors have dismissed or ignored the historical data. They fervently insist that "no evidence exists" to show that chelation helps relieve symptoms and improve heart and blood vessel (and other) diseases. So medical insurance programs simply won't pay for treatments for which "no evidence exists." There you have it – is it *always* a *"Follow the money"* trail?

But wait, there's more. The *real* question is … why do insurance companies *still pay* for bypass surgery and balloon angioplasty, where the success rates have been *proven* (in large, long, randomized, cross-over controlled published university studies, using the finest surgical techniques!) to be dismal and the procedures are risky, even to the point of death. *Good questions!*

Since you're sharp enough to ask the questions, let's break them down into the simple parts that really shed light on the answers:

> Where are American Medical Association DATTA reports, evaluating the major risks of *these* "controversial" therapies – heart bypass surgery or angioplasty – and emphasizing the very real

> concerns that survival numbers are, at best, comparable to medical management (drugs, which are less expensive and safer) for most patients? Where's the resolutions from the AMA House of Delegates, demanding more research studies for safety and effectiveness … to be paid for by the surgeons themselves?
>
> Where are the position statements from the American College of Cardiology, warning that heart bypass surgery or angioplasty can be dangerous (even deadly) and that repeated procedures are sometimes necessary?
>
> Where are the warnings from the American Academy of Family Practice and the American Society for Clinical Pharmacology and Therapeutics? Why hasn't the American Osteopathic Association stepped forward to voice its concerns and to warn patients that bypass or balloon surgery could be dangerous to your health?

These leading professional *trade* organizations of doctors who use drugs and surgery are strangely silent about serious problems with the surgical solutions – *maybe drugs and surgery are no solution after all?*

The current "recommendation" of the American Heart Association (AHA) with regard to "Chelation Therapy" is perhaps most telling:

> "Up to now, there have been no adequate, controlled, published scientific studies using currently approved scientific methodology to support [chelation] therapy for cardiovascular disease. The United States Food and Drug Administration (FDA), the National Institutes of Health (NIH) and the American College of Cardiology all agree with the American Heart Association on this point. …..
>
> "If people use chelation therapy and it doesn't work, they may be deprived of the *well-established benefits from* the many other *valuable* methods of treating these diseases, such as lifestyle modifications, *medications* and *surgical procedures*."[247]

Do you pause to wonder … exactly *which* unique and ***valuable*** "well-established *benefits*" they are promoting with regard to "surgical procedures" – and just why there are no warnings that those benefits might be delivered at major risk and an extreme price, like … disability or death? What the AHA *does* say about heart bypass surgery is this glowing endorsement: "One of the most common and *effective* procedures to manage blockage of blood to the heart muscle."[186]

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[247] American Heart Association. Available at < http://www.americanheart.org/presenter.jhtml?identifier=3054086 >, accessed June 4, 2009. Emphases added.

Even the American *Cancer* Society felt the need to get "into the act" about the "dangers" of chelation but remains disturbingly silent with regard to risks and results of bypass and angioplasty …

> "However, available scientific evidence does not support claims that [chelation therapy] is effective for treating other conditions such as cancer. *Chelation therapy can be toxic* and has the potential to cause kidney damage, irregular heartbeat, and even death. …..
>
> "Chelation therapy has also been promoted as an alternative treatment for many unrelated conditions, such as gangrene, thyroid disorders, multiple sclerosis, muscular dystrophy, psoriasis, diabetes, arthritis, Alzheimer's disease, and the improvement of memory, sight, hearing, and smell. …..
>
> "Chelation therapy is a proven treatment for lead poisoning and poisoning from other heavy metals. However, *available scientific evidence does not support claims* that the treatment benefits patients with cancer, heart disease, or any medical problems other than heavy-metal poisoning. …..
>
> "*According to a number of well-respected organizations*, including the American Heart Association, the American Medical Association, the Centers for Disease Control and Prevention, the American Osteopathic Association, the American Academy of Family Physicians, and the FDA, there is no scientific evidence that chelation therapy is an effective treatment for any medical condition except heavy metal poisoning. ….. Last Revised: 11/01/2008"[248]

Echoes of what you've seen before? "*They*" say it doesn't work and it isn't proven, and "*they*" must know, so "*we*" say so, too – even though ***none*** of us have any new information that disproves the published observations over the past 50+ years.

Not to be outdone in the rush to crush chelation, the *("medical experts?")* at the United States Federal *Trade* Commission (FTC) vigorously pursued in the 1990s a complaint against the American College for Advancement in Medicine (ACAM), the first group organized by physicians endorsing chelation therapy:

> "9. In truth and in fact, *scientific studies do not prove* that EDTA chelation therapy is an effective treatment for atherosclerosis.
>
> "10. The acts and practices of respondent [ACAM] as alleged in this complaint constitute *unfair or deceptive* acts or practices, and the making of false advertisements, in or affecting commerce in

[248] American Cancer Society (position statement). Available at < http://www.cancer.org/docroot/ETO/content/ETO_5_3x_Chelation_Therapy.asp >, accessed June 5, 2009. Emphases added.

violation of Sections 5(a) and 12 of the Federal Trade Commission Act."[249]

In explaining and defending the FTC position to Representative Dan Burton, at a 1999 hearing of the House Committee on Government Reform[250], witness Joan Z. Bernstein, J. D., Director of the Bureau of Consumer Protection at the FTC had this determination to offer:

> "Our inquiry focused on two claims that ACAM allegedly made to consumers. The first claim, which is alleged to be false, is that *scientific studies show* that EDTA chelation therapy is an effective treatment for atherosclerosis. Second claim, which is alleged to be unsupported by reliable scientific evidence, is that EDTA chelation therapy *is effective* in treating atherosclerosis. …..
>
> " … The order is strictly limited to advertising claims that would be made by ACAM. It does not prohibit them from *any* advertising claim, but requires well-controlled clinical trials. If they make a claim, that it is supported by such studies. They also must have substantiation or support for any claim they make, if they make a truthful claim."

So … it's "okay" for ACAM to make any claim it wants, so long as *all* the *other* doctors accept their research studies as truthful and convincing. Which, of course, they don't. So much for *that* idea. This means that … one of the major physician groups endorsing chelation therapy is ***prohibited*** by the government from reviewing the experience of its members or results documented in the published literature and then claiming that the treatment is effective for heart and artery blockage diseases – ***or*** from stating *their* professional opinion that the scientific studies have *shown* it to be effective. So much for remembering that ***90*** number!

Oh – and about the Federal Trade Commission's position statements on anyone making claims regarding bypass surgery or balloon angioplasty and their possible risks and limited results? Sorry, can't find any.

The Pediatric Holocaust

[249] "*In the Matter of* American College for Advancement in Medicine, A Corporation," Docket #C-3882 Federal Trade Commission (complaint). Available at < http://www.ftc.gov/os/1999/07/9623147c3881acamcmp.htm >, accessed June 5, 2009. Emphases added.

[250] "Cardiovascular Disease: Is the Government doing more Harm than Good?" EDTA Chelation Therapy. Hearing before the House Committee on Government Reform. March 10, 1999. Available at < http://commdocs.house.gov/committees/gro/hgo59973.000/hgo59973_0.htm >, accessed June 5, 2009. Emphasis added.

Since the Federal Trade Commission (FTC) chose to get involved regarding "truthful claims," a valuable side-comment must be offered here. Keep in mind that the FTC has been painfully silent with regard to most other medical treatments. Heart and blood vessel diseases – along with immune system challenges such as cancer – are the major causes of suffering and death among adults. Certainly the rising tide of Alzheimer's dementia (associated with aluminum and other toxic heavy metals) and other brain disorders of evaporating memory, concentration, and function – including Parkinson's disease – are of concern as you grow older.[251] But adults have children, and those children have grandchildren. And the tragedy of a brain development disorder, autism, poignantly demonstrates that a brain (and a life) is a horrible thing to waste.

Since the label "autism" was introduced by Austrian psychiatrist Leo Kanner, M. D., in 1943, a wide spectrum of dysfunctions – from very mild to disablingly severe – has been catalogued. Approximately one million Americans suffer from autism. Since the late 1980s, the rate of American children born and later identified as autistic has skyrocketed, to where now 1 child in 100 – 150 is found to be suffering. The ratio favors boys 4 times more often than girls: about 1 in a hundred sons will deliver heartache and despair to his parents. Autism is the fasting "growing" developmental disability, and a family will consume an estimated 3 to 5 million dollars in medical and social services through the lifetime of each affected child. More children will be diagnosed with autism this year than with cancer, diabetes, Down's Syndrome, and AIDS … *all combined*.[252]

The following excerpts from Congressional testimony offered by Rashid A. Buttar, D. O., painfully show the struggles that parents endure when realizing that a child appears to be autistic. Sadly, pediatricians make that realization often many months later. Even sadder, the American Academy of Pediatrics maintains that vaccines containing thimerisol (a mercury-based preservative) cannot have contributed to the epidemic of early childhood autism.

> "On January 25, 1999, my son Abid Azam Ali Buttar was born. By the time he was 14 or 15 months old, he was already saying "Abu" which means father in Arabic, and a few other words such as "bye bye". But by the age of 18 months, my son had not only failed to progress in his ability to speak, but had also lost the few words he had

[251] Demopoulos HB, Flamm ES, Pietronigro DD, et al. The free radical pathology and the microcirculation in the major central nervous system disorders. *Acta Physiol Scand* 1980;492(suppl):91-119.

[252] Generation Rescue, available at < http://www.generationrescue.org/autism-facts-statistics.html >, accessed July 10, 2009.

been saying. As he grew older, I began to worry more and more that he was suffering from a developmental delay. He exhibited the same characteristics that so many parents with children that have developmental delays have observed, such as stemming, walking on tip toes, and lack of eye contact. Sometimes I would call to him but his lack of response would convince me there must be something wrong with his hearing. Certain sounds would make him cringe and he would put his hands on his ears to block the obvious discomfort he was experiencing. He would spend hours watching the oscillation of a fan. But through all this, when he would make eye contact with me, his eyes would say, "I know you can do it Dad". The expression he would give me, for just an instant, would be that of a father encouraging his son.

"The oceans of tears that I cried and the hours that I spent trying to determine what was happening to my son are no different than that of any other parent in the same situation. The only difference was that I was one of only a 190 some doctors throughout the U. S. board certified in clinical metal toxicology. And if this was [toxic heavy] metal-related as was a theory that I had read, I should know how to fix this problem. I tested him and re-tested him and tested him again, searching for mercury. … [M]y son's [early tests and] his system showed no appreciable levels of mercury. But the older he became, the more obvious it became that my son was not developing as he was meant to be developing. My son was not meant to be this way and that was the only one thing that I knew for certain. From the time Abie lost his speech which was around 18 months or so, until 36 months of age, he had absolutely no verbal communication except for the one syllable that he would utter, "deh," on a repetitive basis.

"About the same time while desperately searching for the cause of the same ailment that had afflicted so many of my own patients previously, I … [met to] discuss my son's situation with Dr. [Boyd] Haley [Chair of the Department of Chemistry, University of Kentucky]. That meeting turned out to be one of the key elements which resulted in our development and subsequent current protocol for treating children with autism, autism-like spectrum and pervasive developmental delay. My son was the first one who went through this protocol [to remove toxic metals, especially mercury] once safety had been established. …..

> "I started Abie's treatments on his 3rd birthday, using a rudimentary version of the current TD-DMPS (DMPS in a transdermal base) that my partner, Dr. Dean Viktora and I had played around with a few years previously. By the age of 41 months, 5 months after initiating treatment with the TD-DMPS, my son started to speak, with such rapid progression of his speech that his speech therapist was noted to comment how she had never seen such rapid progress in speech in a child before. Today at the age of 5, Abie is far ahead of his peers, learning prayers in a second language, doing large mathematical calculations in his head, playing chess and already reading simple 3 and 4 letter words. His attention span and focus was sufficiently advanced to the point of being accepted as the youngest child into martial arts academy when he was only 4. His vocabulary is as extensive as any 10 year old's, and his sense of humor, power to reason and ability to understand detailed and complex concepts constantly amazes me."[253]

You might be more persuaded to hear from Abie himself:

> "Dr Buttar: [Congressman] Dr. [Dave] Weldon before you leave is it alright for this 5 year old who at the age of three who was not speaking at all to address the chairman and the respective members of congress that are here. …..
>
> "Abie: Mr. Burton and Ms. Watson and Dr. Weldon, thank you for helping my dad getting all the people better and the children better."[254]

The autism-mercury connection is far too involved to be reviewed in this chapter. What you should know – to share with your family and friends – is that studies by Dr. Buttar and others continue to prove that autism can be reversed, but only if treated early.

Could mercury really be a major explanation for the degenerative diseases that are slaying us by the millions? Consider these results of a literature review, as presented by Dr. Buttar to the Congressional subcommittee:

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[253] Buttar RA, "Autism Spectrum Disorders: An Update of Federal Government Initiatives and Revolutionary New Treatments of Neurodevelopmental Diseases: Autism, The Misdiagnosis of Our Future Generations," written testimony submitted to the U. S. Congressional Sub-Committee Hearing (Government Reform & Oversight Hearing, Subcommittee on Wellness & Human Rights), May 6, 2004, pp. 9 ff. Available at < http://www.drbuttar.com/media/CongressionalHearing.pdf >, accessed July 10, 2009.

[254] Transcribed from video tape presentation, Government Reform & Oversight Hearing, Subcommittee on Wellness & Human Rights, May 6, 2004, page 15. Available at < http://www.hyperbaricmedicalassociation.org/390/text/591/files/3_Oral_Transcript_May_6_2004_Reform_Hearing.pdf >, accessed July 10, 2009.

> "The search for the association between mercury and cardiovascular disease, the number one killer in the industrialized world, revealed 358 scientific papers exemplifying the relationship. The search for the association between mercury and cancer, the number two killer in the industrialized world at the time of this writing, revealed 643 scientific papers exemplifying the relationship. Both of these conditions represent 80% cause of all deaths in the industrialized world, according to the WHO (World Health Organization) as published in 1998. But the association of mercury with neurodegenerative diseases is the most significant, with the references numbering 1445."[255]

Whether you're an adult or a child, the take home message is simply this: personal pollution by toxic heavy metals are the root cause of the degenerative disease killers that are epidemic in our time.

The despair of autism. Special treatment for children: chelation therapy for mercury and other toxic heavy metals. Developed by a father agonizing over the sudden and unexplainable loss of the son in whom he saw so much potential. ***A life saved***. Does it matter? Would it matter to the hundreds of thousands of American children whose brain development has been arrested and then diminished by toxic heavy metals? As FOX NEWS Channel says: "We report. You decide."

The Risks and Limited Results of Heart Surgery … *Are Killing Us!*

Since about a *million* Americans are "being exposed" to the side-effects and risk of death from balloon angioplasty procedures every single year and about a *half-million* undergo heart artery bypass operations, why hasn't the Public Health Service (PHS) issued any reports from its Office of Health Technology Assessment, "based on a search of the medical literature with assistance from the Food and Drug Administration and the National Institutes of Health"? As the PHS concluded when reviewing chelation (noted above), "Its safety is questioned and its clinical effectiveness has never been established by well designed, controlled clinical trials." So … what about their position statement on the scientifically *documented* serious ***risks*** and limited ***results*** from bypass? Or balloon

[255] Buttar RA, "Autism Spectrum Disorders: An Update of Federal Government Initiatives and Revolutionary New Treatments of Neurodevelopmental Diseases: Autism, The Misdiagnosis of Our Future Generations," written testimony submitted to the U. S. Congressional Sub-Committee Hearing (Government Reform & Oversight Hearing, Subcommittee on Wellness & Human Rights), May 6, 2004, pp. 1. Available at < http://www.drbuttar.com/media/CongressionalHearing.pdf >, accessed July 10, 2009.

angioplasty? Sorry, can't find any.

The United States Centers for Disease Control and Prevention (CDC) certainly recognize the societal dimensions of heart and blood vessel diseases:

> "The burden of heart disease and stroke cannot be measured by death statistics alone. The cost of heart disease and stroke in the United States, including health care expenditures and lost productivity from deaths and disability, is projected to be more than $475 billion in 2009. As the U.S. population ages, the economic impact of cardiovascular diseases on our nation's health care system will become even greater. …..
>
> "The Cost of Heart Disease and Stroke:
>
> - More than 1 in 3 (80 million) U.S. adults currently live with one or more types of cardiovascular disease.
> - An estimated 935,000 heart attacks and 795,000 strokes occur each year.
> - Americans make more than 72 million doctor visits every year for treatment and management of cardiovascular diseases.
> - More than 7 million hospitalizations occur each year because of cardiovascular diseases."[256]

Another perspective on the very real personal horror of cardiovascular disease (and the urgency to review and approve chelation therapy) comes from chelation expert L. Terry Chappell in his 1999 testimony before a hearing of the House Committee on Government Reform.[257] Regarding two data reviews he had recently concluded, he noted:

> "The first was looking at the 10 leading causes of death and how alternative medicine might improve those causes of death.
>
> "When I looked at those carefully, I found that the fourth leading cause of death, which is often not listed, is prescription medications, medications prescribed by physicians. And even more shocking to me, when we added up the statistics, we found that the ninth leading cause of death is cardiac surgery.
>
> "So *2 out of the top 10* leading causes of death are actually *caused by* the well-meaning *efforts by physicians to treat their*

[256] "Heart Disease and Stroke Prevention: Addressing the Nation's Leading Killers." Centers for Disease Control and Prevention. Available at < http://www.cdc.gov/nccdphp/publications/AAG/dhdsp.htm >, accessed June 5, 2009.
[257] "Cardiovascular Disease: Is the Government doing more Harm than Good?" EDTA Chelation Therapy. Hearing before the House Committee on Government Reform. March 10, 1999. Available at < http://commdocs.house.gov/committees/gro/hgo59973.000/hgo59973_0.htm >, accessed June 5, 2009. Emphasis added.

patients. There is a significant risk in the medicine that we do practice today.

"Very interestingly too, *5 out of the top 10 leading causes of death are related to vascular disease*, and that is obviously the biggest challenge we face."

So … given the worrisome statistics from the large university studies of bypass and angioplasty, as recounted by Dr. Whitaker in his book, where are the CDC position statements warning the public that heart bypass surgery or angioplasty can be dangerous (even deadly) and that repeated procedures are sometimes necessary? Sorry, can't find one.

The United States Food and Drug Administration (FDA) has ***not*** issued any warnings about the risks (and death rates) associated with bypass and balloon angioplasty for one simple reason: the FDA is not authorized by Congress to "approve" or even review surgical procedures. Why, then, does the FDA feel free to comment on the procedure called "chelation therapy," noting that it is "not approved" for heart and blood vessel diseases? Because chelation involves the *use of a drug* – EDTA or others – that *is* subject to review and "approval" by the FDA. Recall that FDA "approval" means listing on the label for the drug that the FDA finds it to be "appropriate" (meaning "safe" and "effective") for the treatment of certain conditions – and that "listing" is a precondition to gaining insurance coverage.

Recall also that a *drug that has already been approved* by the FDA for any ***one*** condition may *legally* be used by any physician for the treatment of any ***other*** conditions where, in his or her professional opinion, the patient will benefit from its use. Such use depends solely on the physician's *observations* regarding the patient's response to treatment – a research "study" is ***not*** required! Makes you wonder … what are the "*observations*" that surgeons and cardiologists have made regarding patient responses (survival, side-effects) to their bypass or angioplasty, since the studies overwhelmingly demonstrate ***no*** benefit over what is already available from medications for *most* patients. And those studies did *not* include chelation therapy as an option for any of these "medication" patients, which chelation specialists insist could dramatically improve the basic health and condition of their heart and blood vessels.

All of these are *great questions* … so, what do you suppose could be the reasons why they *aren't* being asked on a daily basis regarding the risks and results of bypass and balloon angioplasty? Perhaps Mark Twain offered a most valuable perspective:

> "The scientist … will spend thirty years in building up a mountain range of facts with the intent to prove a certain theory; then he is so happy in his achievement that as a rule he overlooks the main chief fact of all – that his accumulation proves an entirely different thing."[258]

As one of America's most famous humorists, his comments *would* be "humorous" if they didn't ring so true when applied to conventional physicians and surgeons who enthusiastically endorse bypass and angioplasty while warning people to avoid "the dangers" of chelation therapy: "The fact is the human race is not only slow about borrowing valuable ideas – it sometimes persists in not borrowing them at all."[259]

PART SEVEN:
THE HISTORY THAT *REALLY* MATTERS

History often seems to be a dull subject, conjuring up images of thick dusty books stuffed into wall-to-wall shelves of dimly lit libraries, where boring people study long hours and rarely talk, and then only in hushed whispers. The history that matters *most*, however, is *your own*. What happens to ***you*** truly does matter … to you, to your family, to your friends.

The history of chelation therapy should matter to you in a very *personal* sense, because this "advanced medicine of the future" *will* finally be adopted, at some distant time in coming decades, as "***the*** standard of care" for the treatment of diseases created or worsened by environmental pollution/poisoning. Since the planet is becoming ever *more* poisoned – and at an accelerating rate, as a growing number of countries strive to be like American and European societies – you *will* become sicker as you get exposed to the exploding number of toxic metals and chemicals. Will you settle for usual drugs and surgery, despite the fact that they *cannot* reduce toxic metals and, therefore, *cannot* reverse or control the relentless worsening of diseases due to (or magnified by) such poisons?

The historical *studies* are clear: chelation therapy reduces toxic heavy metals. The historical *observations* are clear: chelation therapy also improves

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[258] Mark Twain: "The Bee" (essay). Available at < http://www.twainquotes.com/Scientists.html >, accessed June 4, 2009.

[259] Mark Twain: "Some National Stupidities." Available at < http://www.twainquotes.com/Ideas.html >, accessed June 4, 2009.

overall health and relieves *many* distressing symptoms in the *vast* majority of patients who choose this miraculous form of healing.

The *real* question to ask yourself about "history," then, is whether *you* will survive long enough and still feel well enough to delay seeking treatments until that distant time when doctors (and insurance companies) of the future finally embrace the incredible power of chelation to restore health and relieve suffering ….. or whether your family and friends will be thrilled – right *now* – that you have chosen to create a refreshing and joyful personal history by giving yourself the chance to feel dramatically better with chelation therapy.

Wishing you *LIFE LONG HEALTH!*

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