

EDTA chelation therapy is the safest and most effective way to cleanse our bodies of pervasive heavy metal toxins and remove age-accelerating calcium deposits from our cardiovascular systems. The accumulating scientific evidence suggests that this mighty amino acid offers a whole range of truly remarkable health benefits. It has been shown to help prevent arteriosclerosis and cancer, improve blood circulation, lower blood pressure, reduce harmful clotting mechanisms, and remove lead and other toxic heavy metals from the body. In a day and age where astonishing new advances in medicine are made almost daily, and our vision of the future of medicine borders on the miraculous, this overlooked, inexpensive, and often misunderstood form of therapy offers us the hope that we can all live longer, healthier, and happier lives right now.

"We are living in a toxic world, with serious effects on our health. This well-researched book offers a unique and valuable perspective on a promising treatment. Taking specific oral supplements can remove or "chelate" toxic metals, making an enormous contribution to medical care, health maintenance, and longevity."

—Hyla Cass, M.D.
Author of *8 Weeks to Vibrant Health*,
and *Supplement Your Prescription*
www.drccass.com

"Every person on our planet has significant levels of heavy metals and other toxins which can cause heart disease, cancer, and brain disorders. This book provides state-of-the-art information on safe methods to detoxify. Dr. Gordon is a brilliant and renowned pioneer in this field, who is still on the cutting edge, and David Jay Brown clearly explains and elucidates the concepts of Dr. Gordon and other leading experts. If every doctor read this book, health care might be totally transformed. Until that happens, as a medical doctor who specializes in detoxification, I highly recommend this book to everyone!"

—Randy S. Baker, M.D.
Founder and Director of The Pacific Center for Integral Health
www.drRANDY.org

Praise for David Jay Brown's previous book *Mavericks of Medicine: Exploring the Future of Medicine with Andrew Weil, Jack Kevorkian, Bernie Siegel, Ray Kurzweil, and Others*:

"If you are interested in living longer and improving your sexual performance, *Mavericks of Medicine* may be the book for you...this book offers a valuable look at alternative medicine and an opportunity to reflect on its enduring popularity."

—*Nature Medicine* (July, 2007)

"David Jay Brown is the most compelling interviewer on this planet."

—Clifford Pickover, Ph.D.
Author of *Sex, Drugs, Einstein, and Elves*

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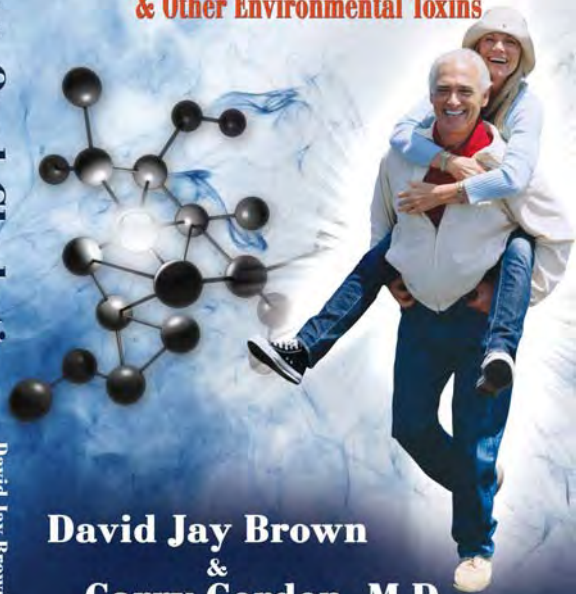
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Detox with Oral Chelation

David Jay Brown
& Garry Gordon, M.D.

Detox with Oral Chelation

Protecting Yourself from Lead, Mercury,
& Other Environmental Toxins



David Jay Brown
&
Garry Gordon, M.D.

“This book is a must for anyone who is breathing the air, eating the food, and drinking the water on this incredibly polluted planet. For those who are no longer able to breathe, eat and drink, this book is unfortunately too late. Although we can not seem to stop the merciless polluters, or activate the slow-to-respond governments at this point in time, this book offers a powerful way for us to protect ourselves from the all-encompassing pollution, that is poisoning our enzyme systems—so that we can not heal or repair, depleting brain function in everyone, contributing mightily to autism, depleting our ATP energy production systems, accelerating the aging process, and ultimately our physical, emotional, mental, and spiritual joy in life. Chelation is not only a reasonable self-defense or nice prevention idea; it is a must for the survival of our endangered human species.”

—Gabriel Cousens, M.D., M.D.(h), Diplomat in Ayurveda, American Board of Holistic Medicine and author of *There Is A Cure For Diabetes* and *Conscious Eating*

Dr. Garry Gordon, you have been a personal inspiration to many physicians and patients worldwide in the field of Integrative Medicine. I personally follow many of your teachings myself and am looking forward to a longer and healthier life directly because I take your advice and use your supplements on a daily basis. I’ve had the privilege of working with you on the AZ Homeopathic Board, and furthering the cause of our style of medicine up against some over-reaching odds—and we have succeeded. You are one of my personal Medical Heroes!

— Bruce H. Shelton M.D., M.D.(h) DiHom FBIH
Homeopathic Family Physician (www.drbruceshelton.com)

Are you concerned about the heavy metal toxicity that you are guaranteed to have simply by living on polluted planet Earth? Do you have any chronic degenerative illnesses? Have you been misled by your conventional doctor about chelation therapy? Has even your alternative doctor discouraged the use and effectiveness of oral chelation therapy? Are you ready for an easy to read and understand treatise on perhaps the simplest thing you can do to enhance your health and protect against degenerative disease (other than a pristine diet)? Are you interested in an inexpensive yet effective alternative to intravenous treatments for heavy metal toxicity? If you have answered yes to any of these questions, this book is indispensable. The authors dramatically and accurately (with references) educate you on a totally neglected (by conventional medicine) cause of disease affecting 100% of the earth’s inhabitants to one extent or another. Even better, they provide information on affordable remedies.

There are only three major causes of disease: malnutrition, stress and toxins. This book does a better job at addressing a most serious cause of universal toxicity than any publication in the field. This is a must read book for lay people and health professionals alike who have any interest in preventing disease and treating the cause, not the symptoms.

—Robert Jay Rowen, M.D., Editor in Chief, Second Opinion Newsletter and internationally known as the “Father of Medical Freedom”
(www.secondopinionnewsletter.com)



Detox with Oral Chelation:
Protecting Yourself from Lead, Mercury,
& Other Environmental Toxins

David Jay Brown & Garry Gordon, M.D.

Illustrations by Sara Huntley

DETOX WITH ORAL CHELATION

David Jay Brown & Garry Gordon, M.D.

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For

Steven Ray Brown, a.k.a. Sammie Rose

~David

For

Alexandra Van Cleve—Who has inspired me to devote my life to educating others about the dangers of pollution and the dramatically improved Health and Longevity Oral Chelation provides.

Today’s rapidly increasing levels of pollution has made continuous Oral Chelation-based Detox essential for anyone hoping to reach their maximum intended useful lifespan, while enjoying optimal health.

The clear evidence is in this book—we all need to “get the lead out” !

~Garry

ACKNOWLEDGMENTS

This book was largely the brainchild of Dr. Garry Gordon. I enthusiastically agreed to coauthoring this book with Dr. Gordon after interviewing him for my book *Mavericks of Medicine*, and then trying chelation therapy myself with spectacular results.

Dr. Gordon would like to thank Linus Pauling and Robert C. Atkins.

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I would also like to express my sincere gratitude to the people that I interviewed for their valuable time and generous help with this project.

INTRODUCTION

An abundance of compelling scientific evidence suggests that EDTA chelation therapy can dramatically enhance many people's health and performance. EDTA chelation therapy has been shown to help prevent arteriosclerosis¹ and cancer², improve blood circulation³, lower blood pressure⁴, reduce harmful clotting mechanisms⁵, and remove lead and other toxic heavy metals from the body.⁶

Some of the other reported benefits from EDTA chelation therapy include better skin texture and skin tone, improvements with arthritis, and better vision and hearing. It has also been shown to improve conditions with renal function and macular degeneration⁷, and to reduce blood pressure and cholesterol levels.⁸ Although EDTA chelation therapy has been shown to reduce calcium accumulation in the blood vessels, it is actually used as a treatment for osteoporosis because it has been shown to stimulate bone growth and to make bones stronger.⁹

EDTA chelation therapy has been reported to dramatically improve physical energy levels, which a number of researchers suspect is due to mitochondrial stimulation, as it is known that lead interferes with mitochondrial function¹⁰ and chelation therapy helps to remove lead from the body. EDTA chelation therapy is also known to have antiviral and antioxidant activity.¹¹ Perhaps most importantly, because it increases circulation to the brain, EDTA chelation therapy may also help to improve cognitive function and memory.¹² Others have reported that using EDTA can have an antidepressant effect. In other words, in addition to making us stronger and healthier, EDTA chelation therapy may actually help to make us smarter and happier.

What is EDTA Chelation Therapy?

Since 1956 over a million people have been treated with EDTA chelation therapy, yet most people don't even know that this unusually safe, relatively inexpensive, and remarkably effective therapy exists, and far too many doctors are unfamiliar with the scientific studies that demonstrate its myriad of benefits.

The word “chelation” comes from the Greek word, *chele*, meaning “claw” or the grabbing appendage of a crab or lobster. Chelation is a chemical process in which a metal or mineral—such as lead, mercury, or calcium—is bonded to another substance. This is a natural process that goes on continually in our bodies. For example, the transportation and migration of zinc and iron in and out of cells are achieved by a chelating process, and the iron in hemoglobin is a chelated metal.

A chelate is a chemical compound in which the central atom is attached to neighboring atoms by at least two bonds in such a way as to form a ring structure. This central atom is usually a metal ion, and during the process of chelation it reacts with other metals and minerals in the body and binds with them. Chelation therapy generally employs the weak acid EDTA, although we will be discussing some other important chelators in this book, such as garlic, vitamin C, and malic acid.

EDTA (ethylenediaminetetraacetic acid) is a synthetic amino acid, which is essentially composed of four molecules of vinegar, and is often used as a food preservative. It was first synthesized in Germany in 1935, and then patented in the U.S. in 1941. In chelation therapy EDTA is administered either orally or intravenously (I.V.) in a doctor’s office. The difference between these two methods of administration, and an assessment of their relative benefits, will be discussed later in the book.

Initially, EDTA chelation was used as a way for workers in early battery factories, or for those who painted ships with lead-based paints, to remove lead or other toxic heavy metals from their body after they had been exposed to high levels because of their jobs. To this day, this is the one area that conventional medicine accepts chelation as a form of treatment—heavy metal poisoning, especially lead poisoning. EDTA is incredibly effective at removing lead and other dangerous heavy metals from the body. However, not long after EDTA first came into use, it was soon reported that people who received chelation treatments for lead poisoning were also experiencing cardiovascular benefits—such as a reduction in symptoms of heart disease—and other health improvements.

Scientific Research on EDTA

The scientific evidence supporting the benefits of EDTA chelation therapy is quite substantial. Early research conducted at the Providence Hospital in Detroit, Michigan in 1955 found that EDTA dissolves “metastatic calcium”—i.e., unwanted calcium deposits.¹³ In the first systematic study of EDTA—which was published a year later—twenty patients with confirmed heart disease were given a series of thirty intravenous EDTA treatments. Nineteen of the patients experienced improvement, as measured by an increase in physical activity.¹⁴ Then, in 1960, another study found that three months of EDTA treatments caused a decrease in the severity and frequency of anginal episodes, increased work capacity, improved electrocardiogram (ECG) results, and significantly reduced the use of the anti-angina drug nitroglycerin.¹⁵

Since these early studies were done in the late ‘50s and early ‘60s there are now hundreds of published papers demonstrating the beneficial health effects of EDTA chelation therapy in treating a wide variety of chronic diseases. In 1993 and 1994 two large meta-analyses—where the results from many scientific studies are statistically analyzed together—evaluated the results of over 24,000 chelation treatments and eighty-eight percent of the patients demonstrated clinical improvement.^{16, 17}

Because of the dramatic cardiovascular benefits that EDTA has demonstrated, for many years people believed that EDTA worked by “clawing” away calcium deposits in one’s arteries and veins, or dissolving these calcified blockages like a biological version of Drano or Roto-Rooter. We now know that this assumption doesn’t hold up in scientific tests. Even though EDTA dissolves metastatic calcium and improves blood circulation, studies show that it appears to have little effect on cardiovascular blockages.¹⁸ Nonetheless, people who use EDTA continue to show improved circulation and other cardiovascular benefits. The mechanism by which these benefits occur is a bit of a mystery, although some compelling theories for the action have been proposed and will be discussed in this book.

EDTA Gets the Lead Out

My coauthor—who has been studying EDTA chelation therapy for the past twenty-five years and is considered one of the world’s foremost experts on the subject—is convinced that the primary mechanism in chelation therapy for all the different benefits involves EDTA’s ability to remove lead, mercury, cadmium, and other toxic heavy metals from the body. According to Dr. Gordon every person on this planet—to one degree or another—is suffering from heavy metal and pesticide poisoning. Every person alive today has around a thousand times more lead in their bones than anyone who lived prior to the Industrial Age.

Rising lead levels in the body have been linked to numerous diseases, such as the formation of cataracts in the eye¹⁹ and an increased risk of cardiovascular disease.²⁰ A disturbing study at the Tulane University School of Public Health demonstrated that the average blood level of lead found among Americans is high enough to increase the likelihood of heart attack and stroke.²¹ In other words, lead toxicity is ubiquitous and everyone’s health is compromised to some extent as a result.

“The Earth has become so totally polluted that everybody today is walking around with high-levels of styrene, PCBs, and dioxins. They’re in every human being we test today, as well as is lead, mercury, and cadmium. There is simply no escape from the particulate matter. We have poisoned our nest,” Dr. Gordon told me.

Because lead and zinc are so closely related to each other chemically, when we raise the levels of lead in our body we are actually plugging lead into key enzyme functions that normally zinc would have fulfilled. According to Dr. Gordon, this is severely compromising many biological functions, and by using EDTA chelation therapy we restore many of these vital functions to their original capacity.

For example, it is suspected that EDTA has a stimulating effect on the mitochondria in our cells, as it is known that lead interferes with mitochondrial activity.²² Mitochondria are structures within cells that produce energy—in the form of the molecule ATP (adenosine triphosphate)—by respiratory metabolism, and many researchers believe that the loss of mitochondrial function is one of the primary

causes of aging. Because zinc is so important for intracellular processes, removing the lead and replacing it with zinc may be one of the keys to slowing down the aging process.

EDTA has also been shown to optimize nitric oxide production.²³ Nitric oxide helps to protect the heart and dilate the arteries, among many other vital functions in the body. Dr. Gordon believes that having lead plugged into those key enzymes functions in our body that zinc normally would have fulfilled inhibits nitric oxide synthesis. This is because some of those enzymes are nitric oxide synthases, the key enzymes that are responsible for this job of making nitric oxide out of the arginine and related amino acids that we get in our diet.

Why Don't More Physicians Practice EDTA Chelation Therapy?

Although a review of the scientific literature supports the assertion that EDTA chelation therapy can have numerous beneficial effects, the official position from the American Heart Association (AHA) on chelation therapy is that “there is no scientific evidence that demonstrates any benefit from this form of therapy in the treatment of arteriosclerotic heart disease.”

Although the AHA recognizes chelation therapy as a treatment for heavy metal poisoning, and EDTA chelation therapy is the standard FDA treatment for heavy metal poisoning, neither the American Medical Association or the FDA acknowledge it as a treatment for heart disease or for many of its other demonstrated health benefits. Organizations like the American Heart Association and the American Medical Association, which say that EDTA chelation is ineffective for treating vascular disease usually quote several Danish and New Zealand studies to support their position.

However, what these titanic organizations fail to mention is that the Danish studies were actually criticized by the Danish Committee for Investigation into Scientific Dishonesty because of improper randomization and double-blinding, as well as premature breaking of the blinding code.²⁴ This amounted to a deliberate bias. When the results of the New Zealand study were examined by two independent statisticians, it was concluded that the trial actually supported the efficacy of EDTA.²⁵

However, as a result of these official denouncements of chelation therapy, many people simply dismiss it as though it were some kind of New Age quackery, and those who support chelation therapy tend to support the notion that this misinformation about chelation therapy was deliberately spread by these official organizations because the patent on EDTA ran out long ago and the pharmaceutical companies can no longer profit from it.

Cardiovascular surgery is an enormously profitable enterprise and the medical community would lose a substantial portion of its profits if an inexpensive and equally effective treatment were to be offered as an alternative. Coronary artery bypass surgery alone is an 18.4 billion dollar a year industry. Many people believe that this is the primary reason why—despite the scientific evidence supporting its many dramatic health benefits—EDTA chelation therapy is not more widely practiced.²⁶ Support for this point of view comes from a study where sixty-five patients on a waiting list for coronary artery bypass surgery were treated with EDTA chelation therapy and the symptoms in eighty-nine percent improved so much that they were able to cancel their surgery.²⁷ The numerous scientific studies that support the many benefits of EDTA chelation therapy will be discussed in this book.

Currently the National Institutes of Health (NIH) has a five year study underway, involving 2,372 participants. This is the first large scale study looking at whether EDTA chelation therapy is “safe and effective for people with coronary heart disease,” and although twenty-nine million dollars is being spent on the study some chelation-practicing physicians have strong criticisms of this work, which will also be discussed in this book.

When I asked Dr. Gordon why he thought oral EDTA chelation therapy isn't recommended by more physicians he said, “I think this is because the standard policy of doctors is to be down on what they're not up on...the scientific literature in this country is entirely controlled. The net result is that if you have a real breakthrough, something that's really going to cure cancer or heart disease, it's not going to be in the *New England Journal of Medicine* or *The Lancet* because of the game that is played in this world. We've known from the beginning that this was too big a revolution. If every doctor did what I'm promoting there would be

no huge hospitals.”

Why Do So Many People Believe in EDTA Chelation Therapy?

Many people hear about EDTA chelation by word of mouth from people who experienced benefits from it themselves. In writing this book, I conducted a series of interviews with Dr. Gordon and a number of other chelation specialists, as well as some of the patients who have experienced dramatic improvements with chelation therapy. Excerpts from these interviews will be included throughout the book in order to give a sense of how chelation therapy can really affect people’s lives.

The late Linus Pauling—the only person ever to have received two full, unshared Nobel Prizes—strongly supported chelation therapy while he was alive. In fact, Dr. Pauling wrote the forward to *A Textbook on EDTA Chelation Therapy* by Elmer Cranton, M.D. In his forward Dr. Pauling 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...The scientific evidence indicates that a course of EDTA chelation therapy might eliminate the need for bypass surgery. Chelation has an equally valid rationale for use as a preventive treatment. Past harassment of chelating physicians by government agencies and conservative medical societies seems to stem largely from ignorance of the scientific literature and from professional bias.”

I enthusiastically agreed to writing this book with Dr. Gordon after interviewing him for my book *Mavericks of Medicine* and then trying EDTA chelation therapy myself. The very first day I tried oral EDTA I was astonished by the effects and I’ve been using it regularly ever since. Several hours after taking EDTA orally for the first time I experienced significantly more energy and was able to think more clearly. Most impressively, it completely lifted me out of a mild depression that I had been experiencing. I’ve spoken with many other people who have experienced similar effects.

How Safe is EDTA Chelation Therapy?

EDTA has an unparalleled history of over forty years of safe use. It has been shown to be hundreds of times safer than aspirin. The most important thing to know about EDTA safety is that you need to take a good quality multi-mineral supplement when you are on chelation therapy because it could potentially remove essential minerals. EDTA binds to the metals and minerals in your bloodstream so it's important to replace these essential nutrients when you're on a chelation therapy program.

However, it's important to note that in some instances EDTA actually enhances the uptake of various trace minerals. In fact, the World Health Organization and advisors to the National Academy of Science recommend that EDTA be added to the diet of children in poor countries to enhance mineral absorption, particularly of iron and zinc.

Many years ago there were some reports of renal (kidney) damage and other adverse effects which resulted from excessive doses of EDTA, infused too rapidly (more than 50 mg/Kg/day or infused more rapidly than 16.6 mg/min), especially in the presence of a preexisting kidney disease. However, when administered with the new protocol no serious side effects have been reported, yet some people still erroneously believe that EDTA can cause kidney damage. Ironically, studies done in 2003 and 2007 by Ja-Liang Lin and colleagues provides evidence that EDTA chelation therapy may actually improve renal function in people with renal disease whose kidneys have been exposed to environmental lead.^{28, 29}

According to Dr. Gordon, EDTA chelation therapy has an extremely low risk of side-effects—less than one in ten thousand people. “EDTA is never broken down in the body. It goes in and comes out as EDTA, so it's hard for it to do a lot of mischief,” Dr. Gordon said. When administered by a proper physician, and carried out according to accepted protocols, mortality rates for EDTA chelation therapy approach zero percent.

Following the guidelines of the American College of Advancement in Medicine (ACAM), more than a million patients have received over twenty million treatments without a single fatality attributed to EDTA.

This claim can not even be made for aspirin, let alone any surgical procedure.

EDTA Provides Extreme Detoxification

Until we develop the nanotechnological expertise to detoxify our bodies with sub cellular robots and molecular-sized cleaning vessels, EDTA chelation therapy appears to be the safest and most effective way to cleanse our bodies of pervasive heavy metal toxins and remove age-accelerating calcium deposits from our cardiovascular systems. It also appears to be the safest and most effective way to help thin our blood and prevent the formation of blood clots, lower blood pressure and cholesterol levels, and neutralize dangerous free radicals.

The accumulating scientific evidence suggests that this mighty amino acid offers a whole range of truly remarkable health benefits, and it seems prudent to suggest that everyone on this planet should consider taking EDTA. According to Dr. Gordon, “Every human being today would live longer, be more intelligent, have a higher level of health, and respond better to any medicine, drug, or surgery, if they chose to follow an EDTA chelation therapy program.”

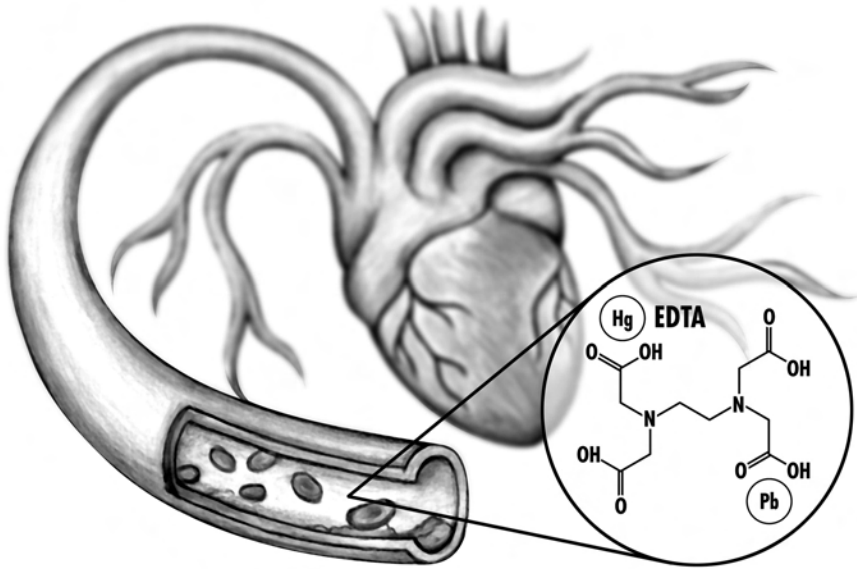
In a day and age where astonishing new advances in medicine are made almost daily, and our vision of the future of medicine borders on the miraculous, this overlooked, inexpensive, and often misunderstood form of therapy offers us the hope that we can all live longer, healthier, and happier lives right now. In the pages that follow we will explore these many benefits of EDTA chelation therapy and provide you with enough knowledge to start your own program today.





Chapter 1

A BRIEF HISTORY OF EDTA CHELATION THERAPY



At the time of this writing, typing the word “chelation” into Amazon.com’s search engine brings up eighty-nine book titles, with publication dates ranging from 1960 to the present. With so much already written about chelation therapy, why write yet another book? There are several important reasons.

First of all, the fact that there has been considerable and consistent interest in chelation therapy over the years—despite the lack of endorsement from conventional medical authorities—reflects that something important is going on. A compelling argument can be made for the notion that no medical treatment is really practiced for very long, and doesn’t gain wide acceptance, if there isn’t at least some truth behind its claims. For example, Western medicine’s initial rejection of acupuncture and Chinese medicine—which had been practiced in the East with great success for hundreds of years—changed to reluctant acceptance once scientific studies began validating its effectiveness and mechanisms of action were discovered.

Over a thousand physicians are currently using EDTA chelation therapy in their practice in the United States and hundreds of thousands of patients have been treated with chelation therapy over the years. Despite persecution, ridicule, and even the risk of losing one's medical license, these courageous physicians have demonstrated the remarkable safety and efficiency of EDTA chelation therapy.

Although hundreds of scientific studies have demonstrated that a wide range of health benefits can be brought about through chelation therapy, and hundreds of thousands of people have experienced these benefits, most physicians remain completely unaware of this. Even worse, because the medical establishment refuses to acknowledge the benefits of chelation therapy, many doctors and much of the public have come to think that it is largely a sham or possibly dangerous.

However, demonstrating that chelation therapy is safe and efficient is only part of what this book is about. The benefits of chelation therapy have already been amply demonstrated in hundreds of scientific studies, and in dozens of books, however the mechanism by which EDTA chelation therapy achieves these benefits has never been adequately understood—and this may be part of the reason why the conventional medical community refuses to accept chelation therapy as an effective treatment for cardiovascular disease and other ailments that it has shown efficacy in treating.

Because of the dramatic cardiovascular benefits that EDTA has demonstrated, for many years people believed that EDTA improved cardiovascular performance by dissolving away calcium blockages in one's arteries and veins, like a biological version of Liquid-Plumr®. In fact, my coauthor, Dr. Garry Gordon, was partially responsible for propagating this mistaken belief years ago because it made so much sense at the time and the evidence appeared to support it.

We now know that this assumption doesn't hold up in scientific tests. Even though studies have shown that EDTA dissolves metastatic calcium,¹ and improves blood circulation,² more recent research reveals that it actually has little effect on cardiovascular blockages.³ Nonetheless, people who use EDTA continue to show significantly improved circulation, lowered blood pressure, and other cardiovascular benefits.⁴ So if it's not helping

to clear out the cardiovascular system of unwanted calcified junk and other obstructing mineral deposits then how is it improving circulation and cardiovascular health? A number of different theories will be explored in the chapters that follow.

It appears that the answer to this question may have been staring us in the face all along but we have simply been too blind to see it. It was known from the beginning that EDTA removes lead and other toxic heavy metals from our bodies. However, for years, no one realized that every human being on this planet is suffering from some degree of heavy metal poisoning. It now appears that, because we all live in such a densely polluted world, it is primarily through the mechanism of heavy metal removal that EDTA improves our health in so many ways.

The burning of coal and petroleum, the use of powerful pesticides in our agriculture, and other toxic chemical by-products of human civilization have dramatically changed the environment that we live in over the past century. The entire biosphere on the planet has been dramatically altered as a result of our reckless behavior. In my previous book, *Conversations on the Edge of the Apocalypse*, I tried to point out that our lack of environmental awareness and misguided actions are having environmental consequences (polluted air and water, pesticides in our food, global warming, etc.) that are threatening the very survival of our species.

In this book the central message is that we've polluted our biosphere so thoroughly that our bodies are now polluted as well, and everyone's personal health is suffering as a result. So anyone who is seriously interested in improving their health should first and foremost take action to detoxify his or her body. EDTA chelation therapy appears to be the most powerful tool that we currently have for doing this. Let's take a look at the history of EDTA.

The Origins of EDTA Chelation Therapy

The non-naturally occurring amino acid EDTA (ethylenediaminetetraacetic acid) was first synthesized in Germany in 1935 and it was patented in the U.S. in 1941. It was initially used in the 1940's as a treatment for heavy metal poisoning, and it was approved for this use

in the United States by the FDA in July of 1953. EDTA was primarily used as a way for workers in early battery factories, or for those who painted ships with lead-based paints, to remove lead or other toxic heavy metals from their body after they had been exposed to high levels because of their jobs. In conventional medical practice EDTA is still widely recognized as an effective treatment for heavy metal poisoning, as well as for the emergency treatment of hypercalcemia and the control of ventricular arrhythmias associated with digitalis toxicity.

However, by the mid-50's people who received chelation treatments for lead poisoning, and their physicians, were beginning to realize that something else was going on besides a simple removal of the lead. Many of these people began experiencing dramatic cardiovascular benefits—such as a reduction in symptoms of heart disease—and other significant health improvements.

In 1956, in the *American Journal of Medical Science*, Dr. Norman Clarke—a prominent cardiologist and Chief of Research at the Providence Hospital in Detroit—reported on the improvements that he observed in twenty patients with documented angina pectoris after being treated with EDTA.⁵ He reported that nineteen of the twenty patients who received EDTA had a “remarkable improvement” in symptoms. In 1960 Dr. Clarke also wrote an editorial about the benefits of chelation therapy in the *American Journal of Cardiology*,⁶ and he published a paper on the treatment of occlusive vascular disease with EDTA.⁷ That same year Dr. Ray Evers reported on the benefits that he observed from chelation therapy in over three thousand patients.⁸ Many elated physicians now believed that they had found a miracle treatment.

Then in 1963 Drs. J.R. Kitchell and L.E. Meltzer coauthored an article reassessing their support for EDTA chelation,⁹ and this article sparked the beginning of the controversy over the therapy that persists to this day. Kitchell and Meltzer, who were at Presbyterian Hospital in Philadelphia, conducted chelation research from 1959 to 1963, and initially they reported good results treating cardiovascular diseases with EDTA. Then in April of 1963, shortly after their last favorable report, Kitchell and Meltzer published a “reappraisal” article in the *American Journal of Cardiology* that questioned chelation's value.

Although Kitchell and Meltzer's results were actually quite favorable their interpretation of these results were mysteriously negative. Seventy-one percent of the patients treated experienced a subjective improvement with their symptoms, sixty-four percent had a measurable improvement with regard to exercise tolerance three months after receiving twenty chelation treatments, and forty-six percent showed improved electrocardiographic patterns. Kitchell and Meltzer concluded that chelation was not effective because some patients eventually regressed long after treatment. However, all of the patients in their study were extremely ill, and considering the poor health of the patients, some eventual worsening would be expected with any treatment—yet eighteen months following therapy, forty-six percent of the patients remained significantly improved.

Whatever motivated Kitchell and Meltzer to interpret their data so negatively, and change their position so abruptly, will remain mysterious, but some physicians, such as Drs. Elmer Cranton and James Frackelton, have speculated that the motivation behind this “reappraisal” article was the “unrealistic expectation that the emergence of bypass surgery would be a final solution.”¹⁰ Nonetheless, Kitchell and Meltzer's “reappraisal” article was largely responsible for the termination of hospital-based, academic research into chelation as a treatment for cardiovascular disease.

There were studies conducted in the late 1960's by the National Academy of Sciences/National Research Council which indicated that EDTA was considered possibly effective in the treatment of occlusive vascular disorders caused by arteriosclerosis. However, by this point, clinical experience with EDTA chelation therapy had already convinced a substantial number of physicians that it was a safe and effective treatment for atherosclerotic vascular disease, as it has been shown to consistently improve blood flow and relieve symptoms associated with the disease in greater than eighty percent of the patients treated.¹¹ So many physicians continued treating their patients with EDTA chelation therapy and some pushed forward with their own research.

The Legal Battles Over EDTA

In my previous book, *Mavericks of Medicine*, I pointed how courageous medical researchers who question the prevailing authority are responsible for some of medicine's greatest advances. For example, in 1847, when the Hungarian physician Ignaz Semmelweis started making the claim that puerperal fever was contagious, and that poor sanitation was responsible for spreading the illness from one new mother to another, his fellow physicians thought that he was crazy. "Wash your hands!" he shouted in the hospital maternity wards of Vienna, while the other doctors laughed.

Medical science has since vindicated Semmelweis' assertions regarding the importance of hygiene in preventing the spread of disease, however this example serves to remind us that often times the conservative and skeptical nature of medicine blinds physicians from seeing obvious and simple solutions to serious problems. This is largely due to the prevailing paradigm or belief system of a particular historical period, which determines how we interpret the results of our scientific studies. As Thomas Kuhn points out in his classic work *The Structure of Scientific Revolutions*, it often takes a full generation for a new paradigm to be fully accepted into the mainstream and many researchers take their erroneous belief systems with them to the grave. The history of EDTA chelation therapy certainly illustrates this point and it involves a landmark court decision that changed how medicine is practiced.

It is unfortunate that just as evidence was being compiled for EDTA's possible treatment of cardiovascular disease, in 1969 the patent for EDTA expired, which resulted in a loss of interest by the major pharmaceutical companies. The Kitchell and Meltzer's "reappraisal" article served to dissuade physicians from practicing chelation therapy, and it helped to prevent large institutions from conducting research with it, but the patent expiring on EDTA marked the beginning of a witch hunt on physicians who practiced EDTA chelation therapy. Nonetheless, a substantial number of physicians continued to practice chelation therapy and many patients continued to experience dramatic benefits. During the 1970's, the U.S. Government began persecuting physicians who practiced chelation therapy and threatened to take away the license from anyone

who used EDTA for any other use purpose than to treat heavy metal toxicity.

This changed in 1978 when Dr. Ray Evers won an important court battle over the right to use EDTA for chelation therapy, which had far-reaching consequences into other areas of medicine. Many doctors had been persecuted by the U.S. Government for using EDTA for reasons other than those that it had been approved for, and many lost their license to practice medicine during this time. The reason for this, many people suspect, is due to the fact that EDTA chelation therapy cuts into pharmaceutical company profits. Nonetheless, many courageous physicians practiced chelation therapy anyway, in ways that were considered deviant by the FDA.

When Dr. Evers was brought to court by the U.S. Government in 1978, he challenged their allegation that he was misusing his medical expertise and he won. Dr. Evers won on the grounds that physicians are allowed to use any approved substance in any way in which they believed, due to their training, was appropriate. In other words, since EDTA was approved for lead poisoning by the FDA, the government would not be allowed to second-guess a physician's diagnosis and the doctor could use it without having to defend why he or she was using it. This legal decision had dramatic consequences on how medicine is practiced in the United States. Thanks to Dr. Evers, now any physician can prescribe any approved medication for whatever ailment he or she believes will be helped by it, without fear of losing his or her license.

Although most insurance companies usually refuse to pay for EDTA chelation therapy unless there is a diagnosis of heavy metal toxicity, this historical legal decision opened the doors to greater possibility. It allowed physicians who practice chelation therapy to continue practicing without fear of losing their licenses, and it allowed further research to be done on chelation therapy. As chelation therapy has evolved over the years a new and far more convenient form of EDTA chelation therapy became available, making it possible for anyone to practice chelation therapy at home without having to visit a doctor's office.

I.V. Chelation Versus Oral Chelation

There are two basic forms of EDTA chelation therapy, oral and intravenous (I.V.), and there are two primary forms of EDTA in use, sodium EDTA and calcium EDTA. Not surprisingly, there is a divergence of opinion about the relative virtues of these different forms of chelation therapy. Most of the clinical studies that have been done involve the intravenous use of sodium EDTA, although this practice is falling out of favor due to the extensive time commitment that it requires.

An I.V. chelation session using the sodium form of EDTA generally takes around three or four hours, during which time 1500 mg to 3000 mg of EDTA (plus vitamin C and other nutrients) is administered while the patient relaxes, socializes, or reads. The I.V. sessions that use the calcium form of EDTA are much quicker than those using the sodium form of EDTA, and can be done in just a few minutes. This is because the calcium form of EDTA stings less when it is administered and can be injected into the circulatory system much more rapidly.

Traditionally, chelation therapy sessions have been done using the much slower sodium EDTA method. This was because it was initially thought that patients should avoid the calcium form of EDTA due to the possibility of increasing calcium buildup in the circulatory system. However, although the calcium form of EDTA does add to the bloodstream's supply of freely-circulating calcium, it appears that this doesn't significantly increase calcium buildup in the body and calcium EDTA seems to work as effectively as sodium EDTA. So EDTA chelation therapy sessions can now be done much more conveniently—in just a few minutes.

The number of I.V. chelation treatments that patients generally require to treat a particular condition is around twenty to fifty sessions, although the number of treatments is dependent on the individual's condition. The best candidates for I.V. chelation are usually people that have been diagnosed with cardiovascular disease or who are suffering from heavy metal poisoning, however anyone who wishes to improve their health stands to benefit from using I.V. chelation therapy because, to some degree, everyone on this planet is suffering from heavy metal poisoning.

Many physicians who practice chelation therapy report that oral chelation has some of the benefits of I.V. chelation, although it is not as powerful or as quickly acting. I.V. therapy is much more direct and more powerful because a hundred percent of the EDTA is absorbed into the bloodstream, whereas with oral chelation only around five or ten percent of the dose is absorbed. Because only a small percentage of an oral dose is absorbed into the bloodstream the timing and dosage requirements of the therapy are different. The average dose for oral EDTA is between a thousand and two thousand milligrams, taken twice a day. Oral chelation therapy should be done between meals on an empty stomach, followed by a good multimineral supplement around two hours later. Oral EDTA chelation therapy can be done every day. The most common report that I encounter from healthy people who start oral EDTA chelation therapy is that they now have substantially more energy.

Oral EDTA chelation therapy may actually be the method of choice for people who are simply looking to improve their performance, prevent age-related degenerative diseases, or whose condition does not demand rapid action. Many physicians report that what can be achieved in only a few hours with I.V. chelation may take several weeks or months with oral EDTA chelation. However, the primary benefit of oral chelation is convenience. As long as one follows the proper protocol, and takes a good multimineral supplement several hours after chelating, one can safely chelate at home, without the cost or hassle of a doctor's visit. Oral chelation is very inexpensive. EDTA is about the price of vitamin C, so there really is no reason why everyone shouldn't consider taking it.

Dr. Gordon offers the following metaphor to help distinguish between the relative virtues of different forms of chelation therapy. "To keep it really simple the difference between I.V. and oral chelation is that oral chelation is a little bit like washing your car. It's a good idea and it looks pretty good. I.V. is a little bit like doing a Simoniz®. It does a deeper cleansing, but not everybody can afford to Simoniz® their car," he said.

Although I.V. chelation is more powerful and quickly acting than oral chelation, there may be another benefit to using the oral EDTA chelation besides its convenience—it may help to prevent colon cancer. This often unacknowledged benefit of using EDTA orally is due to an effect within the digestive system known as enterohepatic reuptake, which causes

the intestines to reabsorb intestinal bile released by the liver during the digestive process. EDTA prevents the reuptake of this intestinal bile by binding to the heavy metals in it before it can be reabsorbed. This way the bile can be excreted as waste from the body before it forms into the toxic by-products that can lead to colon cancer. By having EDTA present in the digestive system we may be able to help prevent colon cancer.

According to Dr. Gordon, “Everyone would be well-advised to take the oral form of EDTA every day because of the epidemic of colon cancer today. This is due to the interaction between various molecules in the intestinal tract that wind up becoming what we call oxidized bile salts, which can lead to the formation of very toxic substances. These very toxic substances wind up inside ninety-nine percent of all people in America today. When we test people’s bowel movements we find carcinogens and mutagens in their feces. People are bathing their poor colons in substances that are so toxic that it’s wonder that everybody doesn’t get colon cancer. By merely adding EDTA you prevent all of those lipid peroxides and other reactions from going on because you are eliminating the metals that catalyze those bad reactions.”

Some supplement companies have recently been marketing EDTA rectal suppositories, claiming that the EDTA in them is a hundred percent absorbed, eliminating the need for I.V. chelation. According to Dr. Gordon, this can't be true because rectal and intestinal absorption are similar, and neither comes close to the hundred percent absorption obtainable through the I.V. route. Advertising EDTA rectal suppositories in this manner is a disservice to people, Dr. Gordon says, because it fools them into thinking that they’re getting the benefits of an I.V. chelation when they’re not. Also, EDTA rectal suppositories don’t prevent blood clots and colon cancer like the oral form does, Dr. Gordon says, because they aren't continuously bathing the intestinal tract with EDTA.

If the EDTA isn’t present in the gut then it can’t help to prevent the free radical stress on colon cells. In addition, Dr. Gordon points out that if people are interested in lowering the risk of heart attacks, they should take EDTA in conjunction with mucopolysaccharides, like carrageenan, (which is found in red algae, and will be discussed in chapter 3) because taking the two together can help to prevent blood clots in a manner that

is greater than the sum total of each on their own. According to my coauthor, the heparin-like effect produced by the combination of EDTA and mucopolysaccharides “makes using aspirin and coumadin for their blood thinning abilities look dangerous and ineffective.”

Only the oral form of EDTA can help to tie up the heavy metals that we consume in our food and water, thus helping to prevent them from being absorbed into the body. This is why Dr. Gordon says “the entire concept of rectal EDTA is like putting the cart in front of the horse.” According to my coauthor, rectal and oral absorption for most substances are identical. The reason for the rectal administration of some medications is to delay the metabolism of certain substances by the liver, so for some drugs it makes sense to administer it rectally. However, according to Dr. Gordon, “EDTA is not metabolized in the body so there is no logical reason to spend extra money to get EDTA in a rectal preparation. Also, since the main advantage of EDTA administration seems to be in lowering the levels of toxic metals like lead in the body, this means that a long-term treatment of ten to fifteen years is required, and that is a long time to use rectal suppositories.”

Another less known form of chelation therapy involves simply soaking one’s body in EDTA by adding it to one’s bath water. According to studies done by Andrew Sincock, microscopic aquatic animals called rotifers raised in an environment with EDTA lived approximately fifty percent longer than a control group.¹² The EDTA extended both the lifespan and the reproductive period of the rotifers. This research has inspired my coauthor to begin developing EDTA bath therapy formulas, and has been using EDTA in this manner himself with good results, such as improved skin tone.

Is EDTA Chelation Therapy Being Deliberately Suppressed?

Despite the fact that a review of the scientific literature supports the assertion that EDTA chelation therapy can have numerous beneficial effects on people’s health, the official position from the American Heart Association (AHA) on chelation—according to their Web site—is that “there is no scientific evidence that demonstrates any benefit from this form of therapy in the treatment of arteriosclerotic heart disease.”

Neither the American Medical Association (AMA) or the FDA acknowledge EDTA chelation therapy as a treatment for heart disease or for many of its other demonstrated health benefits. Organizations like the AHA and the AMA, which say that EDTA chelation therapy is ineffective for treating cardiovascular disease, ignore the mountains of evidence that would lead one to believe otherwise, and they generally quote two studies to support their position—a Danish study done in 1991 and 1992, and a New Zealand study done in 1994.

In 1992 researchers in Denmark published results from a clinical trial of a hundred and fifty-three patients with intermittent claudication,¹³ an atherosclerosis-related condition characterized by pain and weakness in the legs that is exacerbated by walking. The researchers were a group of cardiovascular surgeons who openly admitted their opposition to chelation therapy. According to a statement by Dr. Claude Lenfant on the U.S. Department of Health and Human Services Web site, “the scientists noted that the results reflect “the well-known phenomenon of spontaneous improvement,”—commonly known as the “placebo effect”—in which patients feel or function better for no reason other than that they are being treated or observed. They concluded that EDTA chelation therapy had no beneficial effect among the patients in the trial.”

Then, two years later, in 1994, a group of researchers—also cardiovascular surgeons—at Otago Medical School in New Zealand published results from a similar clinical study of thirty-two patients also with intermittent claudication.¹⁴ Fifteen of the patients underwent EDTA chelation therapy, and seventeen patients were given a placebo of saline solution. Walking distance was used as the major measure of improvement. At the end of the treatment period, sixty percent of the chelation group showed an increase in walking distance. However, fifty-nine percent of the saline or placebo group also demonstrated an improvement. According to the U.S. Department of Health and Human Services Web site, “As with the Danish study, these results again provide a classic illustration of the placebo effect—that is, improvement that springs from the mere fact of being treated, rather than from the results of the specific treatment itself. The New Zealand scientists therefore concluded, like the Danish researchers, that EDTA chelation therapy has

no significant beneficial effects.”

Statements from these highly influential organizations, which claim that the benefits that people experience with EDTA chelation therapy are simply due to the power of the placebo effect (i.e., the power of one’s mind to measurably improve health, which many conventional medical authorities also tend to devalue) fail to mention that the Danish studies were actually criticized by the Danish Committee for Investigation into Scientific Dishonesty.¹⁵ They were criticized because of a lack of improper randomization and double-blinding, as well as for a premature breaking of the blinding code, which, basically, amounted to a deliberate bias.

Although the study was alleged to have been conducted in a double-blind manner (meaning that neither the patients or the researchers were supposed to know who received EDTA and who received a placebo), the researchers later revealed that they broke the code before the post-treatment final evaluation. Not only did the researchers themselves know before the end of the study who was receiving EDTA and who was receiving a placebo, they had also revealed this information to many of the test subjects. Before the study was over more than sixty-four percent of the subjects were aware of which treatment they had received. From an ethical and scientific standpoint this is a highly questionable procedure, precisely because of the very effect that the researchers claimed to be measuring—the placebo effect, which changes the results in a measurable way.

If these research methods weren’t unscientific and unethical enough, according to Drs. Elmer Cranton and James Frackelton in *A Textbook on EDTA Chelation Therapy*, “one important aspect of the Danish study is the startling fact that the patients who were given EDTA were much sicker than the patients treated with a placebo. Therefore, the improvements the EDTA group made were harder earned and more significant.”¹⁶

The statistics used in this study have also been called into question. According to Cranton and Frackelton, the plus or minus thirty-eight meters standard deviations for EDTA patients versus the plus or minus two hundred sixty-six meters standard deviations for the placebo group represents an enormous variation in walking capacity that is heavily biased in favor of the placebo group. These standard deviations imply

that some placebo patients must have walked half a mile before stopping. This means that the placebo group's claudication was markedly less severe, and the EDTA group was much more severely diseased—so the design of the study was obviously biased against EDTA chelation from the outset.

However, when the six-month study was completed the mean maximal walking distance in the EDTA group increased by 51.3 percent, from 119 to 180 meters, while the mean maximal walking distance in the placebo group increased only 23.6 percent, from 157 to 194 meters. The chelation group's improvement was therefore more than twice as great as the placebo group's, even though the chelation group was significantly sicker at the outset. According to Cranton and Frackelton, "This is a positive study, supporting the usefulness of EDTA chelation. The authors' published negative conclusions are not supported by the data."

The results from the New Zealand research were examined by two independent statisticians, and it was concluded that this study also actually supported the efficacy of EDTA. According to Cranton and Frackelton "Absolute walking distance in the EDTA group increased by 25.9 percent; while in the placebo group, it increased by 14.8 percent. The difference was not considered statistically significant. The study, however had only 17 subjects in the placebo group. One of the placebo patients was what the statisticians call an "outlier," whose results differ strikingly from everyone else in the group. This patient's walking distance increased by almost 500 meters. All of the statistical gain in the placebo group was due to this one individual's progress. Without him, the placebo group's distance actually decreased. This illustrates the perils of a small study. The 25 percent gain in the EDTA group compared to no gain in the placebo group would have been very significant statistically."

However, as a result of these undeserved official denouncements of chelation therapy, many people have come to dismiss it as if it were some kind of New Age snake oil. Not surprisingly, those who believe in the efficacy of EDTA chelation therapy tend to support the notion that this misinformation about the therapy was deliberately spread by these official organizations because the patent on EDTA ran out and the

pharmaceutical companies can no longer profit from its sale.

Could this be true? Cardiovascular surgery is an enormously profitable enterprise and the medical community would lose a substantial portion of its profits if an inexpensive and equally effective treatment were to be offered as an alternative. Coronary artery bypass surgery alone is an 18.4 billion dollar a year industry. Many people believe that this is the primary reason why EDTA chelation therapy is not more widely practiced.

Support for this point of view comes from a study where sixty-five patients on a waiting list for coronary artery bypass surgery were treated with EDTA chelation therapy and the symptoms in eighty-nine percent improved so much that they were able to cancel their surgery.¹⁷ While I don't wish to second-guess the motives of titanic medical organizations like the AMA and the FDA, I do want to point out that the consequences of suppressing this effective and inexpensive treatment could be costing us countless lives.

There may be other reasons why EDTA chelation therapy isn't more widely practiced. In addition to these misleading denouncements by official medical organizations, the mechanism of action isn't well understood. Since chelation therapy isn't dissolving away cardiovascular blockages as was originally thought, it remains a bit of a mystery why it lowers blood pressure, improves circulation, and generally improves cardiovascular health.

Understanding the mechanism of EDTA's action may mean accepting the revelation that everyone is suffering from some degree of lead toxicity. This is something that many people may not want to admit—certainly not the health insurance companies or the petroleum industry. In the next chapter we'll look more closely at heavy metal toxicity and how EDTA chelation therapy can be an essential tool in detoxifying our bodies from this overly polluted world that we have created.

