

MEDICAL GENOCIDE

PART FIVE

Coronary-bypass surgery is one of modern medicine's most highly praised and expensive procedures. Why is it, then, that it doesn't help the vast majority of those who undergo it?

THE PROFITS AND POLITICS OF HEART DISEASE

BY GARY NULL

The McDonagh Medical Center in Gladstone, Missouri, draws patients from all over the country. Advertisements for the clinic claim that a therapy called "chelation" (key-LAY-shun) will remedy a variety of ailments, including heart disease. So far, over 250,000 people have undergone chelation therapy in the United States.

Chelation is a series of infusions of EDTA (ethylenediaminetetraacetic acid) into the bloodstream, and physicians claim it brings marked improvement. Chelation therapy costs about \$3,000. It is painless and can be done in a doctor's office. Heart patients view chelation as an alternative to open-heart surgery, specifically the coronary-bypass procedure which, de-



spite its popularity in the medical community, has not yet been shown to play any significant role in reversing heart disease. There is also considerable debate about chelation. The highly respected *Science News* recently dismissed chelation therapy, describing it as "a modern version of patent medicines of old . . . [which] appeals to those looking for a quick and easy fix to medical problems."

The American Medical Association claims chelation is unproven and dangerous. Insurance companies won't pay for it. Much of the media calls it quackery. The Food and Drug Administration (FDA) investigates doctors who practice chelation and supports malpractice suits against them. The government won't fund studies of its efficacy, and several state boards of medical ex-

aminers have pressured physicians into eliminating chelation therapy from their practice.

Are these authorities protecting the public from medical quackery, or are they deliberately trying to prevent Americans from obtaining a highly effective, inexpensive, and almost risk-free alternative to coronary-bypass surgery?

We will explore these questions in this two-part investigation into the profits and politics of heart disease in America.

BYPASSING THE PROBLEM

Heart disease is the nation's No. 1 killer. Despite coronary-bypass surgery, heart transplants, artificial hearts, and powerful drugs that can regulate heart ar-

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rhythmia or even stop a heart attack after it has begun, heart disease is still responsible for 40–51 percent of all deaths that occur in the United States each year. It took 750,000 lives last year alone.

Only the growing popularity of healthy lifestyles—high-fiber diets, aerobic exercise, better forms of relaxation, and stress management—has slightly lowered the death rate from heart disease. These lifestyle changes were originally popularized in the sixties, and are now finally finding acceptance in the medical community. Nevertheless, medicine's main response to heart disease is still last-minute-rescue treatment, utilizing and depending upon the latest medical technology.

Each year, Americans spend one out of every ten dollars on health care, and treatment of heart disease represents a large chunk of the money involved. Last year we spent \$2–\$3 billion on over 200,000 coronary-bypass operations alone, at an average cost of \$12,000–\$25,000 each.

What do we get for all those dollars spent? While one biochemist interviewed by *Science News* believes that chelation can prevent patients from seeking out conventional treatments that might do them some good, one must remember that there exists little evidence that the conventional treatment for atherosclerosis, the coronary-bypass operation, really does do any good. Cardiologist Thomas A. Preston, professor of medicine at the University of Washington in Seattle, charged in a 1984 issue of *The Atlantic Monthly* that the bypass's net effect on the nation's health "is probably negative. The operation does not cure patients, it is scandalously overused, and its high cost drains resources from other areas of need." Dr. Preston's evidence: a series of controlled studies, beginning with one by the Veterans Administration in 1977 and culminating with National Institutes of Health data published in 1983, which showed that bypass surgery was no better at prolonging life than treatment with the prevailing drugs. Two exceptions were patients who suffer from obstruction of the left main coronary artery or who have high-grade obstruction of all three major arteries.

None of the existing controlled studies have measured bypass against therapy using the latest and most effective of the accepted drugs, the calcium blockers; nor have bypass results ever been compared with chelation results. It is doubtful that the advantage of bypass surgery over drug treatment for even the minority of patients with special problems will persist when such comparisons are made. And, anyway, it has been conclusively demonstrated that bypass surgery fails to reduce mortality rates for 75 percent of those heart patients who undergo the procedure.

How is it that one of medicine's most widely touted procedures doesn't help the

majority of those who undergo it?

Introduced in 1967, coronary-bypass operations were being widely prescribed by 1969. By 1975, 60,000 a year were being performed on patients with angina and other symptoms of coronary-artery disease. But coronary-bypass surgery was introduced without benefit of any valid, reliable controlled studies of its efficacy or safety. As the U.S. Office of Technology Assessment has noted: "Coronary bypass surgery [has] been diffused rapidly before careful evaluation."

It seemed evident to surgeons that bypassing clogged sections of coronary arteries with sections of vein transplanted from the patient's leg would improve blood flow to the heart and relieve chronic chest pain (angina). Many patients reported relief from pain after a bypass operation, and cardiologists used this anecdotal evidence to justify use of the coronary-bypass procedure.

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Coronary-bypass surgery—one of medicine's most expensive and widely touted procedures—doesn't help the vast majority of those who undergo it.

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There are two problems with this approach. First, the veins of the leg were not designed to carry blood through the heart, and therefore can't possibly do the job as efficiently as a healthy coronary artery. Second, because the conditions that caused the artery to degenerate are not altered by the bypass, the "patchwork" vein is subject to the same process of degeneration.

Thus, even the pain relief following coronary bypass is often only temporary. In 50 percent of patients, angina returns within five years of surgery. In the first year alone, 10–20 percent suffer blockage in the replacement vessel. Within two years after the operation, 30 percent of the patients are diagnosed to have progressive coronary disease. According to a recent study by researchers at the University of Southern California, in many cases the operation actually encourages faster blocking of the arteries than if they had been left alone.

Yet even after the release of controlled scientific studies—published in respected "establishment" journals—showing that bypass is of little or no value for most angina and heart attack pa-

tients, the number of bypass operations performed continues to grow.

Dr. Preston believes the reason for this is economic. He points out that "the cardiologist [by doing the associated diagnostic work], and the cardiac surgeon . . . both have strong financial incentives to promote bypass surgery." Hospitals, too, stand to gain: Their charges, he notes, can raise the total cost for one operation to more than \$100,000.

Meanwhile cardiologists, the AMA, the insurance companies it influences, and Medicare (also influenced by the AMA) all denounce chelation as an unproven treatment because it has not been tested in double-blind trials. (EDTA, invented in 1937, is in the public domain now. Spending the \$1 million, which is what a double-blind study would cost, would not profit any manufacturer, so no such study has been completed in the United States. However, double-blind studies are under way in other countries.) At best, the AMA's accusation is a case of the pot calling the kettle black; and if chelation is as effective as proponents claim, it amounts to a cynical exclusion from the marketplace of a competing treatment.

BYPASSING SAFETY

Coronary bypass is far more dangerous than chelation. A total of two or three deaths have been attributed to chelation therapy. They occurred nearly 30 years ago, long before current safety precautions were established.

Meanwhile, between .3 and 6.6 percent of coronary-bypass patients die after surgery, depending on the age and sex of the patient. (For patients over 70, the mortality rate is 15 percent for women and seven percent for men.) Five to ten percent of bypass patients suffer a heart attack immediately following surgery, according to the New York Heart Association; two percent suffer a stroke; and two percent hemorrhage.

At best, coronary-bypass surgery treats the symptoms rather than the cause of coronary-artery degeneration; it temporarily relieves pain and, for some 20 percent or so of patients, may extend life longer than the heart drugs in use a few years ago. At worst, it may exacerbate the disease or even kill the patient. It is a treatment representative of a medical establishment that in general believes there is no cure for atherosclerosis. It is also an enormous source of income for thoracic surgeons and the large teams and medical centers that surround them, as the continuing epidemic of coronary-artery disease guarantees a steady stream of bypass candidates.

The continued growth and widespread acceptance of coronary-bypass surgery—even after it has been shown ineffective for three-quarters of the patients subjected to it, and even though it has never been tested against nonsurgical therapies—is a classic example of the politics of a medical system organized

for profit. Its high-tech fix for coronary-artery disease doesn't work. In addition, millions of dollars are being poured into work on the artificial heart, which is plagued by even more complications than the bypass procedure.

As Dr. Preston concluded in his widely discussed *Atlantic* article, "We now spend more on the coronary bypass operation than we do on medical research and prevention of heart disease combined. If we could divert half of what we spend on this one treatment into programs to help people . . . lower cholesterol in their diets, reduce hypertension, and exercise more, the benefit would be greater than if we doubled our spending on treatment after the disease strikes."

ALTERNATIVE TREATMENTS

Although coronary-bypass surgery is widespread, other modes of treatment for coronary-artery disease are also being employed by orthodox medicine. But these other modes, too, employ invasive techniques that attempt to eliminate the symptoms of the disease rather than its cause. All of the techniques endorsed by orthodox medicine are the products of an intensely competitive, profit-motivated medical system.

Balloon angioplasty: This is a procedure that entails threading a balloon-tipped catheter through the blood vessel until the coronary-artery blockage is reached. At the point of blockage, the balloon is inflated, dilating the coronary artery. Balloon angioplasty has been used in this country since 1978. It is only appropriate when the blockage is fairly close to a main artery. Among those treated, 85 percent have responded positively. However, some patients require another treatment within three years after the first. Balloon angioplasty can also be performed on patients with blockages in more than one vessel. Among such a group, in one study, 90 percent responded positively, while the other ten percent eventually underwent bypass surgery.

Balloon angioplasty is not as radical as bypass surgery. It costs far less (\$1,000–\$4,000) and requires only a short hospital stay. It is also less dangerous: Only about half of one percent of patients die during the procedure, while 2.2 percent suffer heart attacks and 4.3 percent require emergency surgery. To date, there have been no studies that compare the effectiveness of balloon angioplasty to drug therapy, nor is its long-term effectiveness clear at this point. Because it is considered experimental, Medicare stopped paying for balloon angioplasty in 1982. Similarly, private insurance companies will not provide full coverage for this procedure.

Drugs: Intensive drug therapy is a common alternative to coronary-bypass surgery. All of the drugs currently in common use—nitroglycerine, beta-adrener-

gic blocking drugs (beta blockers), long-acting nitrates, anti-arrhythmic agents, digitalis, and calcium blockers—are aimed at eliminating the localized *symptoms*, not the underlying *causes*, of heart disease. We will confine our discussion of drugs to one very old treatment and two relatively new ones: digitalis, beta blockers, and calcium blockers.

Digitalis: An extract of the foxglove plant, now produced synthetically, digitalis has been used to treat cardiac disorders since the late eighteenth century. It is commonly used to treat abnormal heart rhythm. This condition results from inefficient pumping action of the heart's chambers, which causes backup of fluid in the heart and lungs. Digitalis strengthens the pumping action of the heart; in 1980, 23 million prescriptions for it were written in the United States alone. A study by Massachusetts General Hospital cardiology researchers found that "there are patients who are helped by digitalis and there are also those who are not. This latter group is much more common than most physicians would have predicted."

Like most drugs, digitalis carries with it the potential of unwanted side effects. These include fatal changes in heart rhythm, gastrointestinal upset, and neurological symptoms, including headache and changes in vision and personality.

Beta blockers: In use since 1965, beta blockers have been hailed as "one of the major therapeutic advances of this century" by Dr. William H. Frishman, author of a textbook about them. Beta blockers diminish the stimulatory effect of adrenaline on the heart, much to the advantage of patients with angina or heart-rhythm abnormalities. Among patients who have already suffered a heart attack, beta blockers can help prevent another. Almost 4,000 such patients recently participated in a government study on the beta-blocking drug propranolol. The study found that propranolol decreased their death rate by 26 percent. Propranolol is now the second-best-selling prescription drug on the market, accounting for \$171 million out of the \$240 million in annual sales of beta blockers. Thirty-four million prescriptions for beta blockers are written annually.

Dr. Jay N. Cohn, head of the cardiovascular division at the University of Minnesota Hospital, sums up the role of the beta blockers as far as the pharmaceutical companies are concerned: "It's hot. These companies are all getting into the heart field. This is where the action is in the drug business."

Because beta blockers are so new, little is known about their long-term effectiveness. Known side effects include allergic reactions, congestive heart failure, and abnormally slow heart rhythms. Also, a combination of beta blockers and calcium blockers has proven fatal for some angina patients.

While this treatment has undeniably

worked to the advantage of millions of heart-disease patients, it fails to address the causes and prevention of heart disease. It is another ingenious technological measure aimed at keeping the symptoms and complications of the disease in a holding pattern, with the hope of thereby prolonging life.

Calcium blockers: Calcium blockers represent an exciting breakthrough in the treatment of heart disease, both for doctors and researchers concerned about causes of atherosclerosis, and for drug companies who see in them more enormous profits from the huge market for heart medicines (about \$2 billion annually). Used in Europe for the past ten years, calcium blockers act to impede the absorption of calcium and other minerals into the heart muscle and muscular walls of coronary arteries, relieving patients of spasms, irregular heartbeats, and angina. The advent of this drug heralds the American medical establishment's belated recognition of the role that mineral metabolism plays in heart disease, and in that way somewhat narrows the gap between the conventional and holistic outlooks on heart disease.

So far, three calcium blockers have been approved by the FDA. Each of the major U.S. pharmaceutical houses is spending millions of dollars to get its own brand-name calcium blocker approved before the relatively old patents on the drug expire. At the same time, they are racing to acquaint doctors with their particular calcium blocker.

Calcium blockers could effectively treat up to three-quarters of those patients now undergoing coronary-bypass surgery to reduce angina and prevent heart attacks. But more importantly, while many doctors have assumed that angina and heart attacks are caused solely by narrowed arteries, the role of arterial spasm, related to calcium metabolism, is now being recognized. These spasms can occur in muscle cells surrounding healthy coronary arteries or in sclerotic vessels. The calcium blockers produce only mild side effects, such as headaches and constipation.

While the medical community is still treating the *symptoms* rather than the *causes* with calcium blockers, the drugs do represent an important step toward the recognition that excess calcium within cells contributes to heart disease. Yet the treatment does not go far enough. It merely *blocks* spasm-causing calcium without getting to the root of the matter and helping the heart patient restore normal calcium levels within the body.

THE CASE AGAINST CHELATION

The gist of critics' complaints against chelation therapy is that it doesn't work, that it may prevent patients from seeking traditional treatment, and that it is not only expensive but dangerous. But several studies have been published recently that document both the efficacy of chelation

and the mechanisms by which it works. These studies confirm increased blood flow to the brain and legs following chelation therapy. There are reports of laboratory tests showing improved rather than endangered kidney function, as was previously believed, following chelation. And a controlled epidemiological study seems to show chelation is capable of preventing cancer in those exposed to lead toxicity.

WHAT IS CHELATION?

Chelation therapy is an inexpensive, non-invasive technique now being used in the United States by about 1,000 physicians and in other countries. Treatment consists of slowly infusing into the patient's bloodstream—usually in the doctor's office—a solution containing disodium EDTA, a chelating agent. This infusion is performed in accordance with strict guidelines established to insure safety—especially to the kidneys, which must process the EDTA for excretion. Patients may sit, recline, read, talk, doze—even walk about—during chelation treatments. Each treatment takes several hours, and is repeated at least 20 and sometimes as many as 100 times, depending on the patient's condition. These treatments are administered from one to three times weekly. The cost of each treatment ranges from \$40 to \$90.

The word *chelate* comes from the Greek word *chele*, which means "claw." A chelating agent is one that "claws" a metallic substance from the arterial wall by bonding with it. Current opinion is that EDTA removes excess deposits of iron, copper, and other heavy metals from the body. This is consistent with EDTA's long-recognized medical application for removing lead and other toxic metals from the body and for removing calcium in cases of hypercalcemia (excess calcium in the blood).

Metals such as copper and iron are thought to serve as catalysts in the formation of free radicals—abnormal, free-floating molecules of waste—which are implicated in the formation of plaque on artery walls. By eliminating and preventing the formation of free radicals, chelation supposedly facilitates the natural replenishment and oxygenation of cells forming the arterial walls, and ultimately permits an increased volume of blood flow to all organs, tissues, and cells.

Once the EDTA solution has entered the vein, it is circulated throughout the body by the bloodstream, bonding metals to itself and carrying them out of the body. Most of the EDTA solution, carrying along chelated waste particles consisting of free-radical molecules and toxic heavy metals, is eliminated in about four hours. In 24 hours, more than 90 percent of the EDTA solution is eliminated. Since small quantities of trace minerals and some vitamins are also removed, the physician prescribes the appropriate nutritional supplements.

The concept of chelation is not unique; it already exists in nature. Through chelation, plants are able to take inorganic elements and change them into part of their structure. Through chelation, detergents, cleaners, and soaps float dirt out of laundry and rings out of bathtubs. It also exists in our own bodies. Through the chelation of iron, our blood's hemoglobin can transport oxygen.

But any suggestion that chelation therapy may work in cases of atherosclerosis is dismissed. *Science News* quoted William Jarvis, president of the National Council Against Health Fraud, as saying chelationists talk about how the therapy works in order to make themselves sound scientific: "Once they start talking mechanisms and avoiding the question of safety and effectiveness, that's a tip-off that it's quackery."

THE TRUTH ABOUT CHELATION

Because proponents of chelation therapy claim it is effective for many conditions, chelation's critics irrationally contend that this is but another sign that chelation therapy is a fraud!

Chelationists claim that the therapy is an effective treatment for atherosclerosis, the accompanying chest pains, senility, complications of diabetes, arthritis, and some cases of high blood pressure. It is said also to alleviate the symptoms of stroke and peripheral vascular disease, with virtually no risk of death or serious side effects. In addition, chelation practitioner James Julian, M.D., in his book *Chelation Extends Life*, claims that chelation therapy "reduces abnormal and toxic metal deposits, abnormal calcium deposits, blood cholesterol, blood pressure, leg cramps, pigmentation, varicosities, and size of kidney stones. It improves circulation, skin texture and tone, vision, hearing, and liver function; and relieves to various degrees digitalis toxicity, lead toxicity, symptoms of senility, pain, symptoms of irregular rhythm, phlebitis, scleroderma, skin ulcers, and Wilson's disease."

Garry F. Gordon, M.D., adviser to the board of the American Academy of Medical Preventives and one of the nation's leading authorities on chelation therapy, asserts: "It stops the angina on at least eight out of ten patients." Bruce W. Halstead, M.D., author of *The Scientific Basis of EDTA Chelation Therapy*, states that the clinical evidence of improvement is in the range of 90 percent. In other words, 90 percent of his patients feel a definite improvement in their health after chelation therapy. Many of these patients are in their seventies, or even older.

Dr. Halstead sums up his experience with chelation therapy as follows: "We have now done so many treatments with so many hundreds of patients that I haven't got the slightest question [of its beneficial effects] in my mind."

Here is a typical case history from *Chelation Can Cure*, a book written by

osteopath Edward McDonagh, who founded the chelation clinic in Gladstone, Missouri, that bears his name: "The patient was under fifty and two years earlier had had an aortic graft put into her abdomen because the circulation was blocked to her leg. She had gangrene in her right foot and was in constant pain. She couldn't sleep and amputation of her foot was the only alternative that conventional medicine could offer. Yet the patient refused further surgery because the first had not worked and there was no guarantee that another operation would do the trick. In fact, since her surgery, things had only gotten worse. She couldn't walk more than a few feet without stopping. There was no pulse in her foot. She sought treatment from Dr. Elmer M. Cranton, a Harvard Medical graduate in Trout Dale, Virginia, because he offered chelation therapy. After thirty treatments her foot was healed, and now she can walk a mile without any pain. She remains well four years later."

Many similar stories are contained in Dr. Cranton's book *Bypassing Bypass* (Stein and Day, 1984): "At age 72, the patient (a physician himself) decided against the triple coronary bypass operation his doctor recommended and, on the basis of his own research, undertook chelation therapy instead. Two years later, he is, in his own words, 'pain-free, practicing medicine, riding my Honda motorcycle, and not worrying anymore.' . . . A doctor's wife who was suffering from chronic and severe angina pectoris struck out on her own (against her husband's wishes) and underwent chelation therapy. After about twenty treatments, she is once more walking, driving a car, cooking, and taking trips. Everyone—even her once disbelieving husband—tells her how well she now looks. . . . Another patient had had a coronary bypass but it had not worked; in fact, after the operation she felt worse than before. She was a complete invalid at fifty. Yet forty treatments with chelation therapy restored her to health and a normal, active life."

These stories certainly sound too good to be true. Dr. Jean Eckerly is currently, as a result of political pressures applied by her state licensing board, the only remaining physician openly using chelation in Minnesota. Dr. Eckerly says that after three years she is still continually surprised at the results she gets with chelation, because "all my training says it shouldn't work."

Dr. Eckerly believes prevention is the best approach to heart disease. But, she says, "Chelation is crucial in already symptomatic patients. They show marked changes in symptoms and ability to function." She mentions crippling angina and claudication as two conditions that she finds chelation sometimes helps dramatically. She estimates her success rate with the therapy at about 80 percent.

New to chelation therapy, Dr. Eckerly is echoing the amazement expressed by

many of the doctors who have worked with it. Dr. Logan Robertson of North Carolina, when asked for the strongest evidence he's seen for chelation therapy's efficacy, points to himself. He had retired from a career in occupational medicine when he had a heart attack. He was totally disabled by the attack, and was told by his doctors he couldn't leave the hospital without coronary-bypass surgery. Instead, Dr. Robertson opted for non-surgical treatment. He was given Inderal, a beta blocker, which caused depression. (He says heart patients have nicknamed the drug "end-it-all.") He tried nitroglycerine patches. He was given calcium blockers. None of them helped. He had severe angina, was unable to walk across the room, and was awakened at night with pain. Finally, he went to Dr. Elmer Cranton for chelation treatments. Today he takes long walks and has no trouble climbing hills.

To critics' comments that the most valuable aspect of chelation therapy is diet and exercise counseling, Dr. Robertson responds that chelation is, indeed, only part of the process.

Dr. Edward McDonagh is more adamant in his defense of chelation per se. "Chelation therapists aren't the only ones offering stress management and diet counseling. All modalities are important. But," he challenges critics, "if they can reverse atherosclerosis, stroke paralysis, and diabetic gangrene with stress management—let's see them do it!"

The AMA and FDA say chelation's efficacy remains unproven because double-blind studies have not been performed. But recently published studies furnish evidence that chelation may in fact stand on firm scientific ground, double-blind or no. These studies seem to confirm that chelation therapy does indeed, by whatever means, enable arteries to carry more blood to vital organs.

PROVING CHELATION'S EFFICACY

Three separate studies, using two different measurement techniques, have documented highly significant degrees of improved cerebral blood flow following intravenous EDTA treatment.

The first was made public by Dr. Lloyd A. Grumbles at a symposium in Chicago in 1979. Dr. Grumbles was one of the first physicians to use radioisotope blood-flow studies to measure objective changes in chelation patients. His studies showed sharply increased blood flow to the brain following the treatments. Dr. Grumbles' results in this area were confirmed in a paper published by H. Richard Casdorff, M.D., Ph.D.

Cardiologist Casdorff practices traditional medicine, but also uses chelation therapy. Trained at the Mayo Clinic and the University of Minnesota, he was recently chief of medicine at Long Beach Community Hospital in California, and is a former assistant clinical professor of medicine at the University of California

Medical School at Irvine. Dr. Casdorff studied chelation therapy and followed the controversy surrounding it for four years before he finally administered it.

Radioisotopic blood-flow testing offered Dr. Casdorff a way to objectively measure the improvements his patients were reporting. He conducted a comprehensive test involving two groups of patients. One group had documented impairment of cerebral blood flow resulting in some sort of brain disorder, and the second group suffered from coronary-artery disease.

Among the patients who had cerebral blood-flow impairments, Dr. Casdorff did a brain-flow study before and after chelation. Confirming Dr. Grumbles's findings, he reported, "All 15 patients improved clinically, including those with little or no improvement in cerebral blood flow. Only one patient showed no change in blood flow but did ... improve clinically. Her transient ischemic [heart] attacks that were occurring prior to therapy disappeared entirely during and after treatment."

Out of 18 patients in the second group, all of whom were suffering from atherosclerotic heart disease, Dr. Casdorff observed a statistically significant improvement in left ventricular function. All patients improved clinically, and in all but two there was a complete subsidence of chest pains. One patient who did not have complete relief of chest pains had twice previously undergone open-heart surgery. Even so, during the course of chelation therapy, her cardiac symptoms were markedly ameliorated.

Dr. Casdorff attempted to get his research paper on chelation published in *The New England Journal of Medicine* and *Annals of Internal Medicine*, both of which had published his letters and articles in the past. Both journals refused his article. He also offered to present his paper to the American College of Chest Physicians, but was informed that they had no space for it in their program. The paper finally appeared in *The Journal of Holistic Medicine*.

It is interesting to note that despite the thoroughness of Dr. Casdorff's research and the encouraging nature of the results, the Long Beach Community Hospital requested that he stop using chelation therapy. Dr. Casdorff refused, as he believes that chelation is one of the most beneficial treatments available for patients with vascular problems, and continues to practice chelation therapy. He is one of the lucky survivors of the war against chelation therapy.

The fact that EDTA infusion increases cerebrovascular blood flow was confirmed by using a method of measurement invented at Johns Hopkins University. This method determines arterial insufficiency by measuring the firmness of a person's eyeball. Among the authors of this study were Dr. Emmanuel Chersaskin, professor emeritus and former

chairman of the department of oral medicine at the University of Alabama in Birmingham. Fifty-seven patients were evaluated objectively for cerebrovascular arterial blockage before and after infusions of EDTA. Blockage diminished in patients by an average of 18 percent following therapy, with 88 percent showing objective improvement in cerebrovascular blood flow.

CHELATION AND CANCER

A pair of Swiss scientists from the Institute for Radiation Therapy and Nuclear Medicine at the University of Zurich found that cancer mortality among 231 adults living adjacent to a heavily traveled highway was much higher than among persons living in a traffic-free section of the same country town. These scientists, Drs. W. Blumer and T. Reich, reasoned that this higher cancer mortality rate was due to automotive emissions, as well as to high levels of lead and cadmium found in the dust of "automobile roads." This was consistent with statistical evidence that showed a higher incidence of cancer in cities than in the country.

Blumer and Reich are the only researchers to have compared death rates from cancer in a matched population of chelated and nonchelated persons. In the residential area they studied, 59 of the adults living adjacent to the highway received chelation therapy; 172 matched control subjects did not.

In the study period of 18 years, only one of the 59 chelated patients died of cancer. Thirty of the 172 persons not treated with EDTA died of cancer. Deaths from cardiovascular disease were also significantly lower in the chelated group. A skeptical University of Zurich epidemiologist who examined the data confirmed the Blumer-Reich data. Blumer and Reich also refer to a 1961 study which indicated that intravenous injections of calcium EDTA could impede the growth of experimental carcinoma.

CHELATION AND THE ESTABLISHMENT

Mainstream researchers are beginning to recognize the value of chelation therapy in treating heart disease. A group of Michigan State University researchers artificially induced heart attacks in dogs, and only those animals treated with an iron chelator named desferrioxamine, plus a calcium blocker, appeared to recover complete neurological function. Accordingly, the M.S.U. researchers proposed that therapy administered after a heart attack should be based on the chelation of iron, and advocate treating heart attack victims immediately with this chelating agent to prevent neurological damage.

Lancet, the prestigious British medical journal, has also recently noted the role of free radicals in disease-related tissue damage. *Lancet* stated that such damage could be curtailed with the use of

chelating agents, and that limited doses of desferrioxamine may have beneficial effects on rheumatoid disease. "The need now," according to *Lancet*, "is for new iron chelating drugs that prevent radical reactions, can be administered orally, and are safer than desferrioxamine." (Desferrioxamine can cause cataracts and irreversible retinal damage.)

A growing body of scientific evidence indicates that chelation does inhibit free-radical activity. Since free radicals are implicated in so many degenerative illnesses, including cardiovascular disease, rheumatoid joint degeneration, and cancer, the many benefits claimed for chelation therapy in improving circulation, increasing enzyme efficiency, healing arthritis, and preventing cancer no longer appear to be farfetched.

THE CASE FOR EDTA'S SAFETY

That *Lancet* did not include EDTA in its discussion of chelation therapy is perhaps due to the often-repeated contention by medical authorities that chelation therapy is dangerous. Kidney damage is the danger most often cited by the AMA and FDA. They still distribute literature spotlighting two deaths that occurred due to kidney failure. What the AMA and FDA neglect to mention is that these unfortunate accidents happened before the safety procedures presently employed for administering EDTA were established. The procedures call for a very slow infusion of EDTA, at low concentrations, and with repeated laboratory evaluations of kidney function for patients at risk.

Dr. McDonagh, working with his associates C. J. Rudolph and Emmanuel Cheraskin, measured EDTA's effect on

kidney function in 383 subjects with a variety of chronic degenerative disorders. In addition to the EDTA infusions, patients were given multivitamin trace-mineral supplements. Measurement of the level of serum creatinine in the blood—considered to be the most sophisticated clinical test for kidney function—showed that not only was there no worsening of creatinine levels following chelation, but patients whose creatinine levels were above or below normal changed in the direction of the norm. The researchers concluded that chelation therapy might actually improve kidney function.

In a second study by this team, another measure of kidney function, blood urea nitrogen (BUN), was employed. There was no significant change in BUN after the initial ten infusions. However, after 20 and 30 infusions, those with the lowest initial BUN scores rose slightly while those with the highest values declined. The BUN test is regarded as a less sensitive measure of kidney function than serum creatinine, so it is interesting that even the cruder measure tended to confirm the results obtained by the more sensitive one in the earlier study, i.e., that chelation therapy, buffered by multivitamin trace-mineral supplements, tends to improve rather than endanger kidney function.

These studies are consistent with clinical observations of improved kidney function dating back to some of the first experiments with chelation as an alternative treatment for circulatory problems. Norman Clarke, M.D., was among the first to observe, in workers from a battery factory he was treating for lead poisoning, that improvement in cardiovascular con-

ditions was a beneficial side effect of EDTA chelation. Now in his eighties and retired, Dr. Clarke recounts his early experiences with chelation therapy: "In the beginning, I blew hot and cold on it many times, but when I saw that kidneys that were calcified and practically nonfunctioning could be restored to normal, I made up my mind."

COMPARATIVE STUDIES NEEDED

The critics of chelation therapy use baseless insinuations and out-of-date information. They emphasize the few deaths that occurred a quarter-century ago and ignore a safety record surpassing traditional medicine's high-tech and drug approaches. They insist controlled studies are needed to prove chelation's efficacy, a demand never made of high-risk coronary-bypass surgery, and they steadfastly refuse to acknowledge the impressive research data supporting chelation's efficacy, safety, and rationale.

Clearly, what is needed is nonpartisan research measuring chelation against the best of traditional medicine's approaches, in order to establish which therapies are most effective for which patients. What is not needed is the repetition of stale allegations disguised as up-to-date analysis, which continue to appear in much of the media.

Editor's note: Reprints of Gary Null's articles on America's health crisis are available to readers free of cost. Please send a stamped, self-addressed envelope to: Editorial Department, Penthouse Magazine, 1965 Broadway, New York, N.Y. 10023-5965. Expect up to two months for delivery. 