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Introduction

Cardiovascular Disease and Natural Healing

Cardiovascular disease (CVD) accounts for more than 40 percent of deaths in the United States, and affects untold millions of people worldwide, condemning them to a short life characterized by debilitation, pain, and misery. Mainstream medical science and billions of dollars of research have not produced cures for heart disease, Type II diabetes, high blood pressure, or many other afflictions caused by atherosclerosis – arteries clogged with sticky plaques. What medical research has produced are drug treatments with troublesome side effects and painful, invasive surgical procedures. The medical establishment has refused to consider natural remedies. Nevertheless, such a remedy has been developed and clinically proven, as will be explained below.

The human body has an amazing capacity to heal itself. The cells and their supporting structures – including collagen, connective tissue, and cartilage – are all in a continual state of flux: growth, destruction, replication, and renewal. This self-healing is at the basis of what are called natural remedies or natural therapies. These remedies, which are based on nutrients and extracts derived from food sources or common medicinal plants, correct the nutritional deficiencies that are at the basis of many chronic illnesses.

Such illness begins as a chemical or biological toxic assault or nutrient deficiency at the cellular level. We experience chronic illness – organ failure or immune system collapse — when millions of cells are affected and do not function properly. For example, in heart disease the heart muscle does not receive adequate nutrition because the coronary artery has become clogged. In order to restore health, natural remedies restore proper cellular function, or help the body isolate and replace cells that have gone awry, by supplying very large quantities of the nutrients that the cells need. Natural remedies concentrate vitamins, minerals, herbs, and other healing substances in the form of extracts, tablets, or capsules. Thus they flood the cells with nutrients that we normally receive from our food in much smaller quantities. These concentrated nutrients then provide the proper environment for healing to take place.

In the late 1980s a young German physician and medical researcher named Matthias Rath, discovered the root cause of cardiovascular disease: deficiency of a simple nutrient, ascorbate (vitamin C). He formed a collaboration with Linus Pauling, the famous biochemist and founder of modern chemistry, and together they gathered evidence demonstrating that this nutrient deficiency causes a chain of events that leads to cardiovascular disease.

Armed with this knowledge and an analysis of how the plaques that cause cardiovascular disease are formed, Rath and Pauling proposed a simple therapy to bind and remove the plaques while healing the artery wall. In short, they had developed a cure and preventive for CVD. However, government agencies, the medical establishment, and the major media were not interested. The National Institutes of Health (NIH) refused to test the therapy. Hundreds of billions of dollars of investment and future revenue for drug companies, medical equipment companies, for-profit hospitals, ambulance companies, and heart surgeons and specialists would be threatened by an inexpensive, simple, and safe cure and preventive for cardiovascular disease.

The therapy described in this booklet provides a natural, nutrient-based regimen for unclogging arteries, including those that supply nutrients and oxygen to the heart and the brain, thus helping to prevent heart disease and strokes and speeding the healing of the body if these have already occurred.

Chapter 1 _____

The Cause of Cardiovascular Disease

The conventional wisdom with regard to cardiovascular disease (CVD), which is caused by the clogging of arteries, is that injuries, or lesions, develop on the artery walls, and that LDL cholesterol collects there and forms a sticky mass, called a "plaque," that eventually stops blood flow and may cause the artery to burst. Almost no one in the medical system asks the following basic questions about this degenerative process:

1. Why do the lesions form in the first place?
2. What attracts these plaques to the site of the lesion?
3. What are the plaques really made of and why do they stick to the arterial walls?
4. Why don't most animals get heart disease?

These questions were an early concern of Matthias Rath, a young research physician in Hamburg, Germany. Through his studies Dr. Rath discovered that arterial plaques were ***not*** made of ordinary LDL cholesterol, but rather of lipoprotein(a), a sticky protein derived from cholesterol.[1] Rath decided to confer about this important finding with Linus Pauling, an American Nobel Prize-winning scientist and the founder of modern chemistry. Pauling, who was then in his eighties, had been doing research for many years regarding human health and vitamin C deficiency. Rath convinced Pauling to collaborate with him in applying this research to the cause of heart disease.

Rath and Pauling realized that one of the effects of the level of vitamin C deficiency widespread in the human population is the breakdown of the wall of the artery, the "lesion" that leads to CVD. This made perfect sense, because our arteries—like all other parts of our bodies—need continual repair. The repair material, called collagen, needs vitamin C in order to be created.

With insufficient vitamin C, the human body simply cannot repair itself. Most animals produce huge amounts of vitamin C on their own. Only humans, other primates, guinea pigs and a few other animals cannot do so, and must consume vitamin C in order to survive.[2] If we took in no vitamin C at all, we would get scurvy — that is the total breakdown of muscle tissue and arteries that leads to internal hemorrhaging. We would literally bleed to death.

It became clear to Rath and Pauling why most animals do not get CVD: They produce sufficient ascorbate to continually repair and renew their artery walls. They also found that most

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[1] Niendorf, A, M. Rath, K. Wolf, S. Peters, H. Arps, U. Beisiegel, and M. Dietel. Morphological detection and quantification of lipoprotein(a) deposition in atheromatous lesions of human aorta and coronary arteries. *Virchow's Archiv A (Pathological Anatomy)* 417 (1990):105-111.

[2] Pauling, L. *Vitamin C and the Common Cold.* New York: Bantam Books, 1970.

animals had extremely low or undetectable amounts of lipoprotein(a) in their blood: either they were not capable of producing much of it or their levels of ascorbate prevented it from forming.

In the course of their collaboration, Rath and Pauling proved their hypothesis that the root cause of heart disease — the arterial lesions — resulted from insufficient vitamin C intake. Their next task would be to understand the complete mechanism of CVD — specifically, why the lipoprotein(a) was attracted to the disintegrating artery wall.

Again they found the cause to be Vitamin C insufficiency. The material that the body uses to repair itself is collagen. It does this by combining ascorbate (Vitamin C) with two amino acids, lysine and proline. Without sufficient ascorbate in the bloodstream, the body uses lipoprotein(a) as a substitute, binding it to fragments of lysine and proline.

Thus if there is not enough vitamin C to manufacture collagen, a sticky coating of lipoprotein(a) gets deposited along the many miles of arteries in our bodies where lysine and proline should have been converted to collagen. Eventually, depending on the concentration of lipoprotein(a) in the blood, it builds into plaques, clogging or restricting the arteries, and causing angina, heart attacks, congestive heart failure, high blood pressure, and other cardiovascular diseases.

Finally, Rath and Pauling found that if the body has sufficient ascorbate, it produces little, if any, lipoprotein(a) in the bloodstream.[3] Thus the very protein that creates plaques when there isn't enough ascorbate is also itself created only under these specific conditions. Rath and Pauling hypothesized that this reaction, along with the creation of lipoprotein(a) in the first place, is a "compensating reaction" to ascorbate deficiency.[4]

Rath and Pauling concluded that blood concentration of lipoprotein(a), not elevated LDL cholesterol, appeared to be the main risk factor for developing cardiovascular disease.[5] Hence their work shows that the typical "cholesterol screening" done on millions of people each year is practically useless because it does not measure lipoprotein(a) levels.

So what *is* the relevance of cholesterol blood levels? Cholesterol is a basic building block and a carrier of nutrients in the bloodstream. Balanced cholesterol is necessary for good health. It is supposed to be regulated by being metabolized, that is, converted to bile and excreted through the intestines. Large quantities of ascorbate (vitamin C) are needed for this conversion to take place.[6]

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[3] Rath, M. and L. Pauling. Solution to the Puzzle of Human Cardiovascular Disease: Its Primary Cause is Ascorbate Deficiency Leading to the Deposition of Lipoprotein(a) and Fibrinogen/Fibrin in the Vascular Wall. *Journal of Orthomolecular Medicine* 6 (1991): 125-134.

[4] Pauling, L. and M. Rath. Hypothesis: "Lipoprotein(a) is a surrogate for ascorbate." *Proceedings of the National Academy of Sciences USA* 87 (1990): 6204-6207.

[5] Pauling and Rath, Hypothesis, p. 6205.

[6] Ginter, E. Ascorbic acid in cholesterol and bile metabolism. *Annals of the New York Academy of Science* 258 (1975): 410-421

High cholesterol counts are caused by vitamin C deficiency. If you do not have enough vitamin C, excess cholesterol and lipoprotein(a) will build up in your bloodstream. So vitamin C is needed to reduce the level of lipoprotein(a) and to keep cholesterol in proper balance.

In summary, Pauling and Rath had solved the puzzle of cardiovascular disease:

1. ***Most humans are seriously deficient in vitamin C (compared with other animals, which do not develop cardiovascular disease).***

2. ***A chain reaction caused by vitamin C deficiency leads to the production and depositing of lipoprotein(a) on the artery wall, the formation of plaques, and cardiovascular disease.***

3. ***In the absence of sufficient vitamin C, the risk of cardiovascular disease is determined by the concentration of lipoprotein(a) in the bloodstream, which is closely related to the known risk factors for heart disease.***

They published these findings in 1991 in their groundbreaking paper, "Solution to the Puzzle of Human Cardiovascular Disease," in the *Journal of Orthomolecular Medicine*.

A Note About Type II Diabetes: it is a side effect of cardiovascular disease

In recent years Dr. Rath did some research on the links between CVD and Type II (age-onset) diabetes. Many diabetics have CVD and vice versa. The same therapy used for CVD reduces the severity of diabetes and enables diabetic patients to restore and maintain the health of their cardiovascular system.

There are many theories about the root cause of diabetes. What is known is that there is a direct connection between cardiovascular disease and diabetes: that all people who have diabetes also have cardiovascular disease, and that many people who have cardiovascular disease are diabetic or become diabetic.

What is the connection? What is known is that Type II diabetes is caused by insulin insensitivity. Recent research suggests that this insulin insensitivity is caused by the blocking of insulin receptors by lipoprotein(a), the same sticky protein that is the direct cause of cardiovascular disease. This receptor blockage leads to a deadly cycle of insulin overproduction, periodic hypoglycemia (deficiency of blood sugar) and hyperglycemia (too much blood sugar), competition between excess blood sugar and vitamin C, and reduced metabolism of fats, vitamins, minerals, and other nutrients. Diabetes then accelerates CVD progression by aggravating Vitamin C deficiency at the cellular level.

Large doses of vitamin C increase insulin sensitivity, decreasing the need for the supplemental insulin that is considered to be a direct measure of the severity of diabetes.[7] Also,

[7] Rath, M. *The Heart*. Cellular Health Series. Santa Clara, CA: MR Publishing, 2001, p. 104.

historically, the resolution of cardiovascular disease by diet and exercise regimens has also resolved diabetes.[8] At this time there is no adequate explanation for this correlation. It is likely that when the layers of lipoprotein(a) are removed from the entire vascular system and proper circulation and cellular nutrition are restored, the insulin receptors become viable again.

[8] Pritikin, N. *Live Longer Now: The First One Hundred Years of Your Life*. Berkeley Publishing Group, 1986.

Chapter 2 _____

Finding A Cure

Armed with the complete knowledge of the root cause of CVD and its progression, Rath and Pauling could authoritatively state that ascorbate supplements would prevent cardiovascular disease. They could also now proceed to hypothesize a remedy: a regimen to reverse CVD and restore the vascular wall to a healthy state.

In their 1991 paper, cited in the previous chapter, Pauling and Rath proposed the administration of therapeutic amounts of vitamin C and lysine, the vitamin C to allow the artery lesions to form collagen and heal properly, and the lysine to bind to the lipoprotein(a), removing it from the artery lesions.

One of Pauling's colleagues had been trying to use large doses of vitamin C alone to address his heart problems, but with little success. Pauling suggested adding large doses of lysine, and it apparently worked. His friend reported that he was able to return to a normal, active, healthy life.[9] Other friends, colleagues, and acquaintances had similar experiences. The therapy literally reversed their heart disease symptoms. Through various journals and other contacts, Rath and Pauling encouraged people to try the regimen and report the results. There were similar astounding results: the complete reversal of cardiovascular disease.

Pauling and Rath had thus developed a simple, inexpensive dietary therapy for CVD using over-the-counter supplements available in any health food or vitamin store: vitamin C and lysine. We will see later how the medical system ignored and marginalized this great discovery.

After Pauling died in 1994, Rath continued the work that they had begun together. By means of more research and clinical trials he proved that the therapy was effective in reversing heart disease. He also improved the effectiveness of the regimen by adding other nutrients, notably proline and coenzyme-Q10.

Chelation Therapy Rediscovered

It is probable that Pauling and Rath had inadvertently also discovered why chelation therapy, which has been used for more than forty years by some doctors in the United States and almost universally in Canada, successfully removes plaques from the arteries and thus temporarily reverses the symptoms of CVD.

Chelation therapy involves the intravenous infusion of an amino-acid-like substance called EDTA into the bloodstream. Used primarily to detoxify people from metal poisoning, chelation was found to be effective for CVD. The therapy is very successful and fairly inexpensive: $2,500 in contrast to the $40,000 to $100,000 usually spent for angioplasty or coronary bypass surgery.

[9] Pauling, L. Case report: Lysine/Ascorbate-Related Amelioration of Angina Pectoris. *Journal of Orthomolecular Medicine* 6 (1991): 144-146.

According to Michael Murray in the *Encyclopedia of Natural Medicine*, it has been used with more than 500,000 patients without any deaths or significant side effects.[10]

The mechanism by which EDTA chelation therapy binds to arterial plaques has never been fully understood. Given what Pauling and Rath discovered about the nature of arterial plaques, it is likely that EDTA binds with the lipoprotein(a) that has been bound to the lysine and proline at the sites of the lesions, thus removing the plaques.

However, EDTA chelation therapy is not a complete therapy because it does not address the underlying cause of plaque formation — the deterioration of artery walls and the formation of lesions resulting from ascorbate deficiency. Without sufficient vitamin C supplementation, the lesions cannot heal properly and cardiovascular disease returns.

This therapy must be administered by a physician or a nurse in an extended visit to a medical office. EDTA is a synthetic chemical that can have toxic side effects on the kidneys if not administered carefully. In contrast, the CVD reversal remedy developed by Rath and Pauling is even more effective, safer, less intrusive, and less expensive than chelation therapy. The Pauling–Rath therapy may be self-administered using easily available nutritional supplements without any changes in routine. The chelating agents in this therapy, lysine and proline, are completely safe and have no toxic effects. These amino acids are a natural part of the food that we eat. The combination of lysine, proline, and vitamin C prevents the recurrence of CVD because it addresses its root cause: ascorbate deficiency.

The Early CVD Pioneers and the Diet and Exercise Regimens

More than twenty five years ago, a man named Nathan Pritikin resolved his own heart insufficiency by designing a regimen of exercise and a low-fat, nearly vegetarian diet. After helping others to use the same regimen to overcome their cardiovascular ailments, Pritikin published a pioneering book, *Live Longer Now*, which spelled out his regimen and provided case studies.

Around the same time, Dr. Julian Whitaker, who had worked with Pritikin, began successfully treating patients with a similar regimen that included fairly large doses of vitamin C – 3,000 to 6,000 mg. per day. Dr. Whitaker still uses this same regimen for his patients today, with the addition of large doses of other dietary supplements.

In the 1980s, Dr. Dean Ornish began using a regimen of low-fat diet, exercise, and yoga (stretching, relaxation, and meditation). He proved to the American Medical Association that it worked, and published a book, *Dr. Dean Ornish's Program for Reversing Heart Disease*.

From what we know now about CVD, we must ask: Why are these regimens working? The success of Whitaker's regimen is obvious. He was prescribing vitamin C based on Linus

[10] Murray, M, and J. Pizzorno. *Encyclopedia of Natural Medicine,* Revised 2nd. Edition. Rocklin, CA: Prima Publishing, 1998, pp. 240-241.

Pauling's early research. He was, and still is, providing people with as much vitamin C as they would have produced if they could make their own, according to an article that he wrote for *Prevention* magazine.[11]

Dr. Whitaker's diet is loaded with green vegetables and other sources of lysine, as well as fresh fruit, a source of bioflavonoids, substances that enhance the action of vitamin C. The exercise he prescribes increases the flow of vitamin C and lysine to the diseased arteries, slowly healing them and allowing the plaques to disintegrate.

Similarly, in Ornish's and Pritikin's regimens, moderate to heavy exercise, lysine from fresh vegetables, along with vitamin C and bioflavonoids from fresh fruit, allow the body to gradually dissolve the plaques and heal the walls of the arteries.

It is interesting to note that these early regimens, especially Whitaker's, came very close to addressing the root cause of CVD, without an apparent awareness of what was really going on. Combined with higher doses of vitamin C for collagen replacement and healing of the artery walls, and lysine and proline for efficient removal of the plaques, these diet and exercise regimens are a good basis for long-term health. Dr. Dean Ornish's above-mentioned book is an excellent "life change manual" that combines diet, exercise, and stress management.

A Remedy from History: Bioflavonoids

When the French explorer Jacques Cartier led an expedition into Canada in the sixteenth century, many of his men developed scurvy for lack of vitamin C. He was told by local natives that a tea made from the bark of the local pine tree could be used as a remedy.[12]

Researchers have identified this extract and several other bioflavonoids — natural compounds that help the body to make collagen, and thus to repair blood vessels properly. They are natural chemicals found in grape skins, grape seeds, blueberries and other dark-colored berries, and Atlantic pine bark extract (Pycnogenol). They are called bioflavonoids, or, more scientifically, oligomeric proanthocyanidins (OPCs). They are very powerful anti-oxidants that also enhance the effects and bioavailability of vitamin C.

[11] Whitaker, J. Three Steps to a Naturally Healthier Heart. *Prevention*, March 1980: 122-130.

[12] French Maritime Pine Bark Extract. http://www.naturalfacts.com.au/french.html.

Chapter 3 _____

The Therapy: A Cure and Preventive for Cardiovascular Disease

Before describing the Pauling-Rath therapy for cardiovascular disease, let us summarize the information from the previous two chapters:

1. The root cause of heart disease (angina, heart attack, cardiac arrhythmia, congestive heart failure) and the other CVD-related illnesses (stroke, peripheral vascular disease, Type II diabetes, high blood pressure) are the results of a chain of events caused by vitamin C deficiency. Most people are deficient in Vitamin C.

2. The lack of sufficient vitamin C makes it impossible for the body to produce collagen for the continual repair of the artery walls.

3. Disrepair of the artery walls exposes lesions in which the amino acids lysine and proline – precursors of collagen – are present. If sufficient vitamin C were present, these amino acids would be converted to collagen.

4. A sticky protein called lipoprotein(a) is attracted to the lysine and proline at the lesions. Plaques of lipoprotein(a) are formed in arteries all over the body. The speed of plaque formation is regulated by the amount of lipoprotein(a) in the bloodstream. This varies among individuals, may be genetic, and is regulated by vitamin C concentration.

5. These plaques block the coronary arteries. The muscle cells of the heart become starved of nutrients, resulting in angina, cardiac arrhythmia, congestive heart failure, and myocardial infarction (heart attack). They block or burst the carotid arteries or other arteries to or inside the brain, causing cerebral vascular disease (stroke). They cause high blood pressure by reducing blood flow throughout the body, forcing the heart to compensate and pump harder.

6. Type II diabetes and CVD are closely linked. Type II diabetes, which is caused by insulin insensitivity, accelerates CVD progression because high blood sugar levels interfere with vitamin C metabolism.

7. To reverse cardiovascular disease, the body needs:
    - Vitamin C to repair the arterial lesions with collagen.
    - Lysine and proline to bind to the lipoprotein(a) plaque material and remove it from the lesions.
    - Sufficient circulation to get these nutrients to the sites of the lesions and plaques.
    - Additional vitamins, minerals, and other nutrients to restore cellular nutrition and heart muscle health.

- For people with Type II diabetes or weight problems, chromium to rebalance insulin metabolism. This is frequently included in a good high potency multi-vitamin.

What I present below is the therapy suggested by Pauling and Rath, and later enhanced and verified by Rath, with some additions for basic nutritional support based on articles in the *Encyclopedia of Natural Medicine* by Dr. Michael Murray and Dr. Joseph Pizzorno, and articles by Dr. Julian Whitaker, one of the early CVD pioneers and publisher of the *Health and Healing* newsletter. For step-by-step instructions on how to get started on this regimen, see Appendix B.

I. Basic Recommendations for Recovery from Cardiovascular Disease

The nutritional supplements listed below are available at health food stores and vitamin outlets, such as www.iherb.com and Vitamin Shoppe* (a company with a nationwide chain of stores and a website, www.vitaminshoppe.com).

If you do not wish to swallow so many pills, you may also purchase the vitamin C, lysine, and proline in powdered form (available from www.iherb.com) and dissolve them in a flavored soy protein drink. It is essential to use a non-GMO (not genetically modified) or organic product such as Spirutein non-GMO or Naturade Organic. Some of these products are flavored – and quite good tasting – and hide the taste of the supplements. For sweetener, use Stevia, a natural non-glycemic sweetener.

The amounts needed should be modified by body weight, using 160 lbs body weight as the basis. (Thus if you weigh 200 lbs, increase the doses by 1/4; if you weigh 240 lbs, increase by 1/2, etc.)

Note on pharmaceutical drugs prescribed for cardiovascular disease: After you have taken the regimen below for several months and you see and feel improvements, you may consider tapering off some the medications you have been prescribed. See the note on "What to discuss with your doctor" at the end of this chapter

The following is a brief summary of the regimen, followed by explanations for each component.

These 11 items constitute the primary regimen for cardiovascular disease reversal. I recommend that you start with these. Vitamin C, Lysine, and Proline can be obtained in powder form for mixing into juice for convenience. Sweeten with Stevia or Truvia.

1. Vitamin C: 2,000 mg. at each meal, three times a day
2. Lysine and Proline: 2,000 mg. of each at each meal, 3 times a day
3. Calcium (500-750 mg) and magnesium (500-750 mg) twice a day with food
4. Zinc (30 mg) and copper (2 mg) daily with food

* Companies and brand names mentioned in this booklet do not represent paid endorsements. They are simply recommendations to help readers find reasonably priced products quickly and easily.

5. High-potency multi-vitamin and mineral supplementation. Be sure that it provides about 400 IU of vitamin E per day
6. Vitamin D3: 4000 IU per day
7. Organic flaxseed oil: two tablespoons (30 ml) per day
8. Potassium citrate: 500 mg twice per day, or four times per day if you are not eating and drinking foods rich in potassium (organic orange or tomato juice, bananas, whole grains).
9. Water: at least two quarts (64 fluid ounces, eight full cups, two liters) per day
10. Mild exercise, such as walking or gentle yoga stretches
11. Close monitoring by a physician who is open to natural healing

The following supplements can be added. They are important for lowering blood pressure

12. Pharmaceutical-grade fish oil - 2000 mg EPA/1000 mg DHA per day (Natural Factors, Carlson, or Spectrum), important for cellular repair and lowering blood pressure
13. Arginine - 6000 mg per day, take 2000 mg three times per day. Can be increased to 12,000 mg per day
14. Hawthorne extract - 600 mg per day. Take 200 mg three times per day
15. Garlic 1500 mg per day (3 500 mg capsules delivering 5000 micrograms allicin each)
16. Quercetin - 2400 mg per day, take 800 mg three times per day

The following may be taken to help clear blood clots from a **non-leaking** stroke:

17. Turmeric Extract – 4000 mg per day, 4 divided doses, must be taken with food

The following are also recommended, especially if you have angina, high blood pressure (hypertension) or if you have already had a heart attack, cardiomyopathy, congestive heart failure, valve problems, stroke, or cardiac arrythmia:

18. Soy protein drink (if not already being taken): ¼ cup mixed with a cup of organic soy milk, twice per day, or ½ cup in a fruit smoothie once a day for breakfast.
19. Vitamin E – start at the amount in the multivitamin (400 IU), then increase by 200 IU every two weeks to 1600 IU. If blood pressure rises at any time, reduce to previous dosage and wait until blood pressure reduces before proceeding to increase vitamin E dosage again. Important Note: **Vitamin E is a natural blood thinner. If you are taking a blood thinner (anti-coagulant) such as Coumadin (Warfarin), do not take Vitamin E until you have stopped taking Coumadin.**
20. Serrapeptase (enteric coated): 80,000 IU, three times a day well before meals. (Do not take this if you have a leaking stroke).
21. Nattokinase – 200 mg per day, take 100 mg twice per day. (Do not take this if you have a leaking stroke).
22. N-Acetyl-Cysteine: 600 mg. twice a day with meals

23. Acetyl-L-Carnitine: 500 mg. three times a day (or 750 mg. twice a day) with meals
24. Coenzyme-Q10 (Co-Q10): 50-100 mg. three times a day with meals
25. Grapeseed Extract: 100 mg. three time a day with meals
26. Glucosamine (usually comes with Chondroitin): 1,000 mg. twice a day with meals
27. MSM: 8000 mg per day. Take 4,000 mg. (1 teaspoon powder in juice) twice a day with meals
28. Chlorella: 4500-9000 mg per day. Take 1500 mg initially (and work up to 3000 mg), in tablet or powder form, three times a day with meals, a few minutes before each meal.
29. Lecithin granules: two tablespoons (30 ml.) per day

The following are explanations for the above recommendations:

1. **Vitamin C: 2,000 mg. at each meal, three times a day**
   It is preferable to take 2,000 mg. with each meal, since this will lead to a faster recovery. However, some people like to start with 1,000 mg. at each meal and work up to the full dose of 2000 mg at each meal.

   The human body needs large amounts of Vitamin C in the bloodstream at all times, to create collagen for cellular repair, to metabolize and recycle cholesterol, to bolster the immune system, and for many other essential functions. As I mentioned before, most animals produce about 30-300 times as much as you would get if you took the RDA of 60 mg. per day.

   The best and most digestible form of vitamin C is pure calcium ascorbate powder, which may be mixed with orange juice or other juice drinks. However, vitamin C may also be taken in the form of tablets or capsules. People who experience gastric upset from large doses of vitamin C may wish to try buffered C or ester C. You may discover your optimum dosage of vitamin C safely and easily: You will develop mild diarrhea if you take too much at once or too much over a period of several hours. (The diarrhea reaction is harmless; just lower the dosage until you no longer have it.) Start with 1,000 mg. at each meal for a few days, increase to 2,000 mg. per meal for a few more days, then add some in between meals with a light but healthy snack. You will probably find that your bowel tolerance dose will be very high if you are fighting other illnesses. In his later years, Linus Pauling was consuming up to 18,000 mg. of vitamin C per day with no adverse symptoms.

   Once you have recovered from cardiovascular disease, it would be advisable to continue taking 6,000 mg. of vitamin C throughout your life, in order to prevent a recurrence of symptoms. You may increase it during times of illness and decrease it if diarrhea occurs (which indicates that your body no longer needs such a high dose).

2. **Lysine and Proline: 2,000 mg. of each at each meal, three times a day**
   These may be taken as powders or tablets. A lysine-proline combination tablet is made by Solgar and distributed by www.vitaminshoppe.com. Each tablet contains 500 mg. of each ingredient. So it is necessary to take four tablets with each meal. As mentioned on page 11,

you may purchase lysine and proline in powdered form from iherb.com and add them to a beverage. (Dosage can be increased to 12,000 mg of each per day if symptoms are acute or persist for more than 6 months, increasing water intake to 3-4 quarts per day.)

Lysine is one of the eight essential amino acids. It occurs naturally in most foods containing protein, and we would die if we did not get enough of it. For humans the typical intake of lysine naturally occurring in food is about 1,000 mg. per day. Pauling and his associates found that increasing the dose to 6,000 mg. per day was safe and effective for chelating (binding) the lipoprotein(a) plaques, removing them from the artery walls and allowing the collagen to properly heal the arterial lesions. For people who do not presently have cardiovascular disease, 3,000 mg. per day is adequate for prevention. For those who already have cardiovascular disease, a dose of 6,000 mg. should be taken for several months, until all cardiovascular symptoms are resolved, as verified by an electrocardiogram (EKG) and arterial blood flow measurements. Then it may be tapered off to 3,000 mg. per day for the long-term elimination of plaques that have been forming for many years throughout the vascular system.

Rath and Pauling had discovered that the plaques in the arteries were attracted to both lysine and proline. Since proline is normally produced by your body, they originally believed that it was unnecessary to take supplemental proline. Rath later found that the body cannot produce enough proline to have the desired therapeutic effect of removing plaques. The dose of 6,000 mg. per day should be continued for several months until all cardiovascular symptoms are resolved, tapering off to 3,000 mg. per day for the long term elimination of plaques.

3. **Calcium (500 mg) and magnesium (500 mg.) twice a day with food**
   These minerals are needed for heart and muscle function. Most people don't get enough of these essential minerals. If you encounter muscle cramps day or night, you can increase to higher dosages, up to 750 mg calcium/750 mg magnesium twice per day. When you have blood work done by your doctor, make sure he or she checks the levels of these minerals, and increase accordingly if deficient.

4. **Zinc (30 mg.) and copper (2 mg.) daily with food**
   Zinc lowers the risk of cardiovascular disease. The copper is needed because large doses of zinc deplete the body of copper. These minerals may be purchased separately or together.

5. **High-potency multi-vitamin and mineral supplementation**
   In addition to the nutrients listed above it is essential to take a multi-vitamin that contains the following (among other nutrients):

   a. at least 20,000 IUs of Vitamin A, with all or most of it in the form of beta carotene
   b. 400 IUs of Vitamin E
   c. 200 micrograms of selenium
   d. 200 micrograms of chromium

   One product that contains all of these is Nature's Way Daily Two Multi, which is available at Vitamin Shoppe, in stores and on line, and from www.iherb.com.

The food we eat typically does not provide sufficient nutrients for proper cellular nutrition – that is, feeding all the cells of the body. This is especially true if you are over fifty, when absorption and utilization of nutrients begins to decline, and if you are overcoming cardiovascular disease, since blood flow to the heart has been constricted. Very few people in the United States and other industrial societies take in enough usable vitamins and minerals. The essential nutrients to accompany the Pauling Rath therapy (derived from the *Encyclopedia of Natural Medicine* and the work of Dr. Julian Whitaker) are Vitamin D3, Vitamin E, the B-complex, beta-carotene, calcium, and magnesium. Some of these nutrients may be found in a single high-potency multivitamin and mineral tablet or capsule that may be purchased at a health food or vitamin store.

6. **Vitamin D3: 4000 IU per day, in 2 doses**

   Recently published research indicates that a minimum of 4000-5000 IU vitamin D3 should be consumed daily (unless you are light-skinned and get daily full-body sun exposure with no sunscreen). Many foods are supplemented with D3, so I have recommended this extra daily supplementation at the 4000 IU level.

7. **Organic flaxseed oil: two tablespoons (30 ml) per day**
   Flaxseed oil contains Essential Fatty Acids necessary for cellular repair and maintenance in the heart and other organs.

8. **Potassium citrate: 500 mg twice per day, or four times per day if not eating and drinking foods rich in potassium (organic orange or tomato juice, bananas, whole grains, etc.)**
   Potassium is essential for proper heart muscle control, and potassium deficiency is a cause of arrhythmia. The recommended amount of potassium in the diet is 3500 mg for adults.

9. **Chlorella: 4500-9000 mg per day. Take 1500-3000 mg., in tablet or powder form, three times a day with meals, a few minutes before each meal.**
   Mercury is a common pollutant in fish, and is released into your body from amalgam ("silver") fillings in your teeth. Chlorella binds with any mercury or other heavy metals that you might have accumulated in your body. (Note: Powdered chlorella is much less expensive than tablets.) Start with ½ teaspoon or 1500 mg before each meal, and increase to 1 teaspoon or 3000 mg per meal over several days. **Note: some people are sensitive to chlorella. If it causes you stomach or intestinal upset, try using another "green food" such as Natural Factors Enriching Greens or Garden of Life Perfect Food.**

10. **Water: at least two quarts (eight full cups or two liters) per day**
    This is essential to maintaining the health of the kidneys for the following reasons: (1) Because vitamin C is a natural diuretic, restoring fluids daily is necessary to prevent dehydration and electrolyte imbalance; (2) Lysine and proline are amino acids (protein components), and high protein ingestion may overload the kidneys, possibly causing serious damage to these organs, unless accompanied by adequate fluid intake.

11. Exercise

It is advisable to do some mild exercise, such as walking, as much as is safe for your physical condition, to get the nutrients circulating throughout your system.

12. Close monitoring by a physician who is open to natural healing

The supervision of a physician is essential if you are currently taking blood pressure medications, or insulin for diabetes, as your need for these medications will likely decrease as a result of this regimen.

13. Pharmaceutical grade fish oil 2000 mg EPA/1000 mg DHA per day

These Essential Fatty Acids (EFAs) help restore cell membranes throughout the body, and reduce high blood pressure (hypertension).

14. Arginine – 6000 mg. per day. Take 2000 mg three times per day.

Important for lowering blood pressure. Dosage can be increased to 12,000 mg per day if symptoms are acute or persist for more than 6 months, increasing water intake to 3-4 quarts per day.

15. Hawthorne extract - 600 mg per day. Take 200 mg three times per day.

Important for lowering blood pressure.

16. Garlic capsules 1500 mg per day (take 500 mg capsules delivering 5000 micrograms allicin each, three times per day)

Important for lowering blood pressure

17. **Quercetin - 2400 mg per day. Take 800 mg three times per day.** Important for lowering blood pressure

18. Vitamin E – start at the amount in the multivitamin (400 IU), increase by 200 IU every two weeks to 1600 IU. If blood pressure rises, reduce to previous dosage and wait until blood pressure reduces before proceeding to increase vitamin E dosage again. Vitamin E has been found to lower blood pressure if the dosage is increased gradually, and to improve heart health. There have been some reports of temporarily increased blood pressure caused by increased health of the heart muscles.

19. Turmeric Extract – 3000-4000 mg per day, take four 1000 mg doses with food

Turmeric Extract (also called Curcumin) has been found to dissolve blood clots. Do not take if you have a "leaking" or "bleeding" stroke.

20. Soy protein drink (if not already being taken): ½ scoop mixed with a cup of organic soy milk, three times per day, or one full scoop in a fruit smoothie once a day

Soy protein provides the essential amino acids for cellular repair and maintenance. It is essential to use a non-GMO (not genetically modified) or organic product such as Spirutein non-GMO or Naturade Organic. These products are flavored – and quite good tasting – and hide the taste of the supplements. A less expensive, unflavored powder that you may flavor yourself is NOW Soy Protein Isolate, available from www.iherb.com. It makes a great smoothie when combined with 1 cup of fresh or frozen fruit, 10 ounces of soy milk, a third of

a dropper of vanilla extract, and 4 drops of liquid stevia. (Stevia is an all-natural, non-caloric sweetener that may be purchased at natural food stores and vitamin companies.)

21. Serrapeptase (enteric coated): 80,000 IU three times per day, well before meals
Serrapeptase enzyme has been shown to speed removal of cardiovascular plaques.

22. Nattokinase - 200 mg per day, take 100 mg twice per day
Nattokinase has been found to increase the body's ability to dissolve blood clots and cardiovascular plaques. Do not take if you have a "leaking" or "bleeding" stroke.

23. N-Acetyl-Cysteine: 500 mg. twice per day with meals
N-Acetyl-Cysteine has been shown to help in normalizing blood pressure, and it increases the production of glutathione, an internal detoxifying antioxidant.

24. Acetyl-L-Carnitine: 500 mg. three times per day with meals
Carnitine is a vitamin-like substance that stimulates energy production in cells. Heart patients have been shown to have a deficiency of carnitine in their heart muscle cells. Supplementation overcomes this deficiency until blood flow to the heart muscle is restored. The dose of 1,500 mg. per day should be continued until all cardiovascular problems are resolved.

25. Coenzyme-Q10 (Co-Q10): 50-100 mg. three times per day with meals
Co-Q10 is normally produced by the body, but the amount decreases with age and heart patients consistently have a deficiency. It has been shown to protect the heart when it does not have sufficient nutrition because of constriction of the coronary artery. Begin with 300 mg. per day, tapering down to 150 mg. after all cardiovascular symptoms are resolved.

26. Grapeseed Extract: 150 mg. per day (all at once or divided into 2 or 3 doses)
This bioflavonoid enhances the effectiveness of vitamin C by increasing the amount of it available to cells. It is also a powerful free radical scavenger and inhibits the destruction of collagen. The *Encyclopedia of Natural Medicine* recommends 150 to 300 mg. of grapeseed extract for various cardiovascular ailments. I suggest 300 mg. per day, tapering down to 150 mg. per day after all cardiovascular symptoms are resolved.

27. Glucosamine: 2000 mg per day. Take 1,000 mg. twice a day with food
Glucosamine helps protect and repair cartilage, including heart valves.

28. MSM: 8000 mg per day. Take 4,000 mg. twice a day with food
MSM helps protect and repair connective tissue. If you get a powdered product, make sure it is marked Opti-MSM, which is palatable. Some MSM powders apparently taste vile.

29. Lecithin granules: two tablespoons (30 ml.) per day
Lecithin contains the raw materials for repair and maintenance of the cell membranes – the permeable walls between all of our cells. Lecithin is available inexpensively from iherb.com or Vitamin Shoppe.

While taking these supplements, it is important to eat a healthy diet, with large amounts of vegetables, beans, and whole grains, fresh fruit, and reduced amounts of red meat, dairy products, refined sugar, and white starches. Change your diet gradually. It is not necessary give up all the foods that you love. You will find that, if you introduce new foods one at a time, while eliminating unhealthy foods, you will gradually develop a taste for foods that are good for your body. For many reasons in addition to coronary health, a diet that is low on the food chain, that is, one composed primarily of grains, beans, vegetables, and fruit, is preferable.

What to discuss with your doctor

I always recommend that people work with their physicians in healing their bodies. The role of the physician is to be the mentor, guide, and monitor of your health. But more often than not, doctors, especially heart specialists, are totally aligned with the recommendations of the pharmaceutical industry, along with conventional cut and splice methods, such as angioplasty and bypass surgery.

Even those physicians who recognize that diet-and-exercise heart regimens do work are skeptical that "their" patients will do anything to heal themselves. If you present them with the Pauling regimen, they will look at you incredulously (or, if they think you are really serious about trying it, with an expression of horror) and warn you of dire consequences. Very few doctors, even heart specialists, are closely familiar with Pauling and Rath's research.

If you cannot find a holistically oriented physician, it is probably best to tell your present doctor that you are going to start following a program similar to one of the proven diet-and-exercise heart regimens such as Ornish's or Whitaker's, and that you would like him or her to closely monitor your progress with EKGs, echocardiograms, cholesterol count, etc.

Blood thinners such as coumadin (warfarin) should be stopped once you are taking this regimen, since it naturally thins blood and prevents clotting.

Cholesterol-reducing (statin) medications such as Lipitor and Zocor are dangerous to your health and should be stopped once you are taking the natural regimen, which, over time, will naturally balance cholesterol. In any case, cholesterol is a needed blood component for cellular repair; it is not the cause of cardiovascular disease.

If you are taking other heart or blood-pressure remedies (e.g., beta blocker, calcium channel blocker), ask your doctor to carefully monitor the symptoms that these drugs are supposed to address, and taper off the dosage as your cardiovascular system becomes healthy again on its own. If you have diabetes, it is imperative that you monitor blood sugar closely and frequently, as your need for insulin will likely decrease. This is especially true in the case of Type II (age-onset) diabetes.

What about the vitamin C scares?

There have been no documented cases of anyone who has ever had adverse side effects from taking very large doses of vitamin C, other than the diarrhea mentioned above, which is simply the indicator that you have exceeded the dose that your body is using. But for many years, the

pharmaceutical industry has gone to great lengths to scare people away from vitamin C. These companies have huge investments in expensive prescription drugs that attempt to treat the symptoms of diseases that would be addressed, cured, or prevented easily and cheaply with the same dosage of vitamin C as is found in the blood of most animals.

The scares have accelerated since 1999. One researcher noted finding vitamin C in a cancer tumor, and then reported that vitamin C might induce cancer or interfere with anti-cancer agents.[13] If he had understood the action of vitamin C against cancer, he would have realized that the vitamin C that he found was contained in leukocytes — our body's natural immune defense mechanism against cancer — that had collected in the tumor to attempt to destroy it!

A few months later, two researchers reported "thickening of the artery wall" from vitamin C, assuming that the arteries were being blocked.[14] In fact, they did not test for blood flow, and if they, too, had understood the action of vitamin C, they would have realized that the thickening was in fact related not to the blocking of the arteries, but rather to the strengthening of the arteries that was due to proper collagen formation.

Finally, in June of 2001 a researcher at a university that receives large amounts of funding from drug companies reported, with great media attention, a test-tube experiment in which he analyzed the action of vitamin C on "peroxidized lipids" (blood fats that had been made toxic by extreme free radical damage) and reported that the resultant compounds might be carcinogenic.[15] This researcher failed to mention that this test tube reaction has been known for several years and that no such reaction has ever been found in animals or humans. He also failed to mention that peroxidized lipids do not form in the first place in a person who takes adequate vitamin C. Finally, he failed to mention that peroxidized lipids are extremely toxic to the body anyway, so that claiming that they turned into something toxic when exposed to vitamin C is misleading at best. This might be equivalent to saying, "When I applied vitamin C to cyanide I got something poisonous."

[13] Golde, D. Cancer Tumor Shown to Consume Large Amounts of Vitamin C. Press Release of the Memorial Sloan-Kettering Cancer Center, September 15, 1999.

[14] Dwyer, J. Presentation at the Fortieth Annual Conference of the American Heart Association, San Diego, March 2, 2000.

[15] Dunham, W. Vitamin C Found to Promote Cancer-Causing Agents. Reuters News Report, Thursday, June 14, 2001, 3:11 P.M.

Chapter 4 _____

The Role of the Medical System

> My Dear Kepler, what do you say of the leading philosophers here to whom I have offered a thousand times of my own accord to show my studies, but who, with the lazy obstinacy of a serpent who has eaten his fill, have never consented to look at the planets, or moon, or telescope? Verily, just as serpents close their ears, so do men close their eyes to the light of truth. (Galileo Galilei in a letter to Johannes Kepler, c. 630)

The above quote was part of the preamble to Pauling and Rath's groundbreaking paper on the root cause of cardiovascular disease. Pauling originally submitted this paper (without the quote) for publication in the Proceedings of the National Academy of Sciences, one of the most prestigious and influential scientific journals in the United States The paper was approved for publication in June, 1991, and then without explanation or justification its publication was canceled. It eventually appeared in the *Journal of Orthomolecular Medicine*, a journal read only by alternative medicine practitioners.[16]

Pauling submitted his therapy for official testing to the National Institutes of Health, and it was rejected for no apparent scientific reason. Years later, after Pauling's death, it was submitted again by several of his disciples, and again it was rejected with no adequate explanation.

Linus Pauling was a dedicated scientist and humanitarian and the only person so far to have been the single recipient of two Nobel prizes, one for chemistry and the other for peace. The first was for his discovery of the physical nature of chemical bonds, which became the foundation of modern chemistry. The second was for his role in stopping airborne nuclear tests because of the health hazards associated with nuclear fallout.

Pauling's research on Vitamin C convinced him that this nutrient was critical for human health. In continuing the work that he and Pauling had begun, Matthias Rath further proved and enhanced the therapy for cardiovascular disease and went on to develop natural therapies for cancer and AIDS. But the medical system has fought bitterly and continually against large-dose vitamin C supplementation, despite massive and obvious evidence that it improves general health, lowers heart disease and cancer incidence, and improves immunity.

In this light it may be appropriate to rename the medical system the "Illness Industry." Hundreds of billions of dollars are spent each year to "treat" — that is, to maintain and manage but not cure — chronic illnesses. Much of this money is spent on "treating" cardiovascular disease. More than 50 million people in this country have some kind of heart ailment. Millions more are diabetic. 40 percent of all deaths are due to cardiovascular diseases, and this is without even counting those deaths that are related to their secondary effects (such as people dying in a car accident caused by their own or someone else's heart attack). Approximately one million

[16] Rath and Pauling, Solution to the Puzzle, p. 125.

people per year elect to have angioplasties or coronary bypass operations, at a cost of $50,000 to $100,000 each.[17]

A medical system whose income is driven by the traditional treatment of illness has a vested interest in maintaining the status quo. Such a system will find new and more expensive "remedies," such as drugs and complex, invasive procedures, to "treat" illnesses, and will foster skepticism of, or will actively oppose, regimens that may prevent or eradicate those illnesses that support a giant money machine.

Pauling and Rath's discovery, which was further confirmed by clinical studies by Rath, could literally eradicate cardiovascular disease. That would put many heart specialists and surgeons in the United States out of business, empty the intensive care units of most hospitals, greatly reduce the number of ambulance trips, cut the revenues of hospital equipment manufacturers and service companies, and render obsolete hundreds of pharmaceutical drugs currently used to "control" heart disease, stroke, high blood pressure, and diabetes.

Pauling and Rath's 1991 paper, as well as Rath's ongoing research, have been marginalized by the medical system. Although anyone may look up and read the paper or find out about Rath's work at his research website (http://www.dr-rath-research.org), most doctors and lay people will never see it. Those who do find it will be likely to discount it because it is not widely used and accepted. Young doctors are trained to view alternative natural remedies as quackery. Thus the marginalization of this therapy, once accomplished by the medical system, becomes self-perpetuating. It is the intention of this author to override this system of marginalization by getting this information to millions of people, who will begin to eradicate cardiovascular disease as a human ailment.

The story of the opposition does not stop here, however. The pharmaceutical industry considers nutritional therapy to be a major threat to its business. Through their influence in a United Nations commission called Codex Alimentarius, the drug companies are moving toward imposing a ban on the availability of large-dose nutritional supplementation and even preventing information about supplements from being published. Dr. Rath has been at the forefront of the struggle to stop the implementation of these new Codex regulations. You may read more about Codex at his website: http://www.dr-rath-foundation.org.

[17] Goldberg, B. *Alternative Medicine Guide to Heart Disease, Stroke and High Blood Pressure*. Tiburon, CA: Future Medicine Publishing, 1998.

Chapter 5 _____

The Eradication of Heart Disease

In our society, we always hope that truth, justice, and democracy will prevail. But often this does not come to pass unless some very dedicated people make it happen. Large corporations and their public relations firms take measures to create formidable obstacles to information that challenges their "bottom line."

The drug companies, the medical equipment industry, and heart surgeons have a vested interest in keeping the discoveries of Rath and Pauling from the public. Overcoming the wall of silence requires reaching people with the message of this booklet: that heart disease and other cardiovascular diseases can be easily prevented and cured without invasive surgical procedures or expensive, dangerous pharmaceutical drugs. Given what we know now, these diseases have no place in human society. They can and should be eradicated throughout the world.

When enough people learn about, and use, the Pauling-Rath regimen and reverse their cardiovascular diseases, then there will be pressure to convince physicians of its safety and efficacy. Only then will physicians make it the standard regimen for every person suffering from these diseases, and make large-dose vitamin C intake standard from birth, so as to stop the early beginnings of CVD.

The author of this booklet has established a website devoted to environment and health, which includes a summary of Pauling and Rath's discovery: http://www.healthy-again.net/cvd.htm. Readers may help to spread the word by calling the attention of other people to the website and by telling them about this booklet, which may be obtained online at the website.

If you need further assistance

Jonathan Campbell, the author of this booklet, is available as a consultant — to help you understand the regimen, to find a physician, to talk to your physician, and to find reputable sources for the nutrients. You may reach him at the following address:

Jonathan Campbell
124 Metropolitan Ave
Roslindale, MA 02131

Appendix A

Lifestyle Recommendations to Accompany the Natural Therapy for Cardiovascular Disease

The Natural Therapy for Cardiovascular Disease provides the proper nutrients for your heart and arteries to repair themselves. This section provides some general recommendations to follow while you are following the regimen.

1. Your body will take time to heal your heart and arteries. During this rebuilding period, you need to also reduce the stresses on your heart. Please attempt to eat as low as possible on the food chain; try to avoid junk food and red meat. I suggest a vegan vegetarian diet (no meat, no dairy), but this is not absolutely essential. Keep up your protein and other nutrient intake with healthful food. Eat lots of soy (organic or non-GMO, if possible) and whole grain products. Soy drinks such as Spirutein and vegetarian burgers are ideal for boosting protein intake; choose the non GMO or organic varieties in order to reduce exposure to pesticides. Eat lots of fresh vegetables and fruit. As with soy, buy organic food (if it is within your budget) to reduce pesticide exposure.

2. As much as possible, avoid ingestion of toxic and carcinogenic chemicals, such as over-the-counter pharmaceutical medications (Tylenol, allergy medications, sulfa drugs, etc.), and diet drinks containing Aspartame (NutraSweet) or Saccharin. There are natural remedies that substitute for virtually any pharmaceutical medication. Stop taking all cholesterol-reducing drugs such as Lipitor, Zocor, Crestor, etc., as the Natural Therapy will balance cholesterol counts without drugs.

3. Reduce ingestion of recreational or addictive drugs. All psychoactive drugs disrupt cell metabolism, and many of them are harmful to the cardiovascular system. (This is especially true of intravenous drugs.)

4. Reduce smoking and alcohol consumption. Cigarette "tar" (benzopyrene) is a powerful carcinogen and both it and nicotine are cytotoxic. Both smoking and drinking harm the cardiovascular system.

5. Obtain and read other information about health restoration, such as found in Andrew Weil's “Spontaneous Healing” and “8 Weeks to Optimum Health”, and the Encyclopedia of Natural Medicine by Michael Murray and Joseph Pizzorno. The human body can heal itself, given proper nutrition and environment.

Appendix B
Step by Step Introduction to the Natural Cardiovascular Therapy

In order to allow your body to heal itself and overcome cardiovascular disease, the Natural Cardiovascular Therapy floods your body with specific nutrients to properly heal your arteries, strengthen your heart, and remove the plaques specifically from your coronary artery and more generally from the rest of the miles of arteries all over your body.

When you first look at the array of nutritional supplements that you need to take, it may seem overwhelming. Let's approach this step by step.

Buying Nutritional Supplements

Most of the supplements in the Natural Cardiovascular Therapy (see the list on pages 11-12) are available at most vitamin and health food stores. The ones that are not – specifically the amino acid proline – may be purchased or ordered at a few select health food stores or ordered online using the Internet, such as at VitaminShoppe.com. For each supplement in the therapy, there is a total daily intake. Buy a month's supply of each, so that you don't suddenly run out. It is very, very important to take the regimen consistently. (But if you miss a dose or a day, just continue on; do ***not*** take a double dose.) You may find it easier to take your supplements if you purchase a large, sectioned vitamin box. This will give you have a handy way of getting each supplement without having a large collection of bottles on the table.

Start slowly, build up

It is important to get to your target dose as quickly as possible, but you don't need to start all at once unless you have very advanced cardiovascular disease – that is, if you have been diagnosed with congestive heart failure or have already suffered a heart attack or stroke. (If this is the case you should advance to the highest dosages of every component as rapidly as possible).

You should periodically measure the health of your cardiovascular system, using the methods described in the Safe Testing Protocols for Cardiovascular Disease.

In week 1, you may start by taking 1,000-2,000 mg. of vitamin C, 1,000-2,000 mg. of lysine, and 1,000-2000 mg. of proline at each meal. Take your multivitamin/multimineral supplement daily, and the calcium/magnesium supplement in two doses, morning and evening.

In week 2, you may increase the amount of vitamin C, lysine, and proline at each meal to 2,000 mg, if you are not taking that already, and add the rest of the supplements.

In week 3, you may attempt to increase your vitamin C dosage by taking some in between meals, at bedtime, etc.

Be sure to drink at least 2 quarts of spring water per day.

Take aloe juice (a few ounces after each meal) if you have indigestion, as it is an excellent healing agent. This is optional.

You should stay on the regimen until all signs that your cardiovascular diseased has been completely resolved. For maintenance (that is, for the rest of your life) you should stay on a moderated version of this regimen, described in Maintenance Regimen for the Natural Cardiovascular Therapy. This should keep your heart and the rest of your cardiovascular system healthy and prevent formation of plaque.

Note Regarding Liver Disease

If you have liver disease (hepatitis or cirrhosis) you should add the following to the cardiovascular regimen:

Milk Thistle Extract (80% Silymarin) – 1200 mg. per day.
Selenium – increase to 400 ug (micrograms) per day
Replace the multivitamin with one that does not contain iron (Nature's Way Daily Two Multi is a good choice).
Be sure to be taking Alpha Lipoic Acid (ALA) and Chlorella. (Note: Do not take ALA if you still have "silver" (mercury amalgam) fillings in your teeth.

These nutrients stop hepatitis and rebuild healthy liver tissue.

Appendix C
Maintenance Regimen for the Natural Cardiovascular Therapy

If you have cardiovascular disease, it is extremely important that you stay at the maximum dosage of the cardiovascular regimen until all symptoms have subsided and testing is done to verify that your heart and arteries have completely healed. (See the section on Safe Cardiovascular Testing Protocol).

Once your cardiovascular health is restored, you will need to keep up a strong maintenance regimen to prevent re-occurrence of cardiovascular disease and keep your immune system in shape. The following nutrients will help you to do this.

a. Beta Carotene – at least 25,000 IU per day, in 1-2 doses. This is the safest way to obtain vitamin A, since Beta carotene is very safe in extraordinarily large doses, whereas vitamin A oil is toxic in large doses.

b. Vitamin C – 6000 mg. preferably in the form of pure calcium ascorbate crystals or capsules, which are almost neutral in acidity and will not unduly upset the stomach. Take crystals with orange juice; follow all doses with food or something that will coat your stomach, such as soy drink.

c. Lysine – 6000 mg. per day. Combined with vitamin C, this will keep plaques from forming, continue to remove any remaining plaques, and help the healing process.

d. Proline – 6000 mg. per day. Combined with vitamin C, this will keep plaques from forming, continue to remove any remaining plaques, and help the healing process.

e. Vitamin E – 400 IU per day.

f. Vitamin D3 – 4000 IU per day.

g. Calcium/magnesium – 1000-1500 mg. calcium, 1000-1500 mg. magnesium, per day.

h. MSM - 8000 mg per day. Take 4,000 mg. (1 teaspoon powder) twice a day in water or juice with meals.

i. High-dosage multivitamin/multimineral complex per day.

j. Zinc – 30 mg. If tablets irritate your stomach, there are zinc lozenges available at health food stores. (Check the zinc content of the multimineral supplement. Take enough to reach 40-50 mg. total.)

k. Copper – 2 mg.

l. Organic Flaxseed Oil - 2 tablespoons per day.

m. Keep fluid levels high by drinking at least two quarts of water per day. This is essential both for the high vitamin intake and also to flush toxins out of the body.

Appendix D
Acute Illness Regimen

No regimen, no matter how perfect, can prevent you from coming in contact with the millions of viruses and bacteria that are everywhere, both in the human population but sometimes also, unfortunately, in our food.

By using a Natural Health Regimen, you are preparing your body to defend itself against these disease carriers, by building up the immune system. There are steps you can take if you do get ill to help your immune system respond very quickly and help you become well again in very little time.

1. Vitamin C - When you are ill – infected with a virus or bacteria – your immune system is using vitamin C much faster than normal, so you may increase your dosage dramatically. I have personal experience in my bowel tolerance being above 30,000 mg. per day when I had a serious case of the flu; I was able to take 3,000 mg. ***every hour*** while I was ill, and the illness lasted less than a day.

2. If it is a stomach or intestine related virus or bacteria, oregano oil and olive leaf extract are effective antibiotics, at 1,000-2,000 mg. per day (I usually don't recommend brands, but in this case I recommend GAIA Herbs). I used these to stop the Norwalk flu from having any of its horrible symptoms (nausea, vomiting, diarrhea).

3. Ginger capsules, or even better, ginger oil capsules such as New Chapter Ginger Force. These are useful when the virus or bacteria causes nausea or diarrhea, since ginger is an anti-inflammatory and relaxant. (Ginger is as effective as pharmaceutical drugs for motion sickness.)

4. If the virus or bacteria seems to be getting the better of your immune system and you get pneumonia or for some other reason you don't think your body is responding adequately, you should consider getting one or more vitamin C intravenous infusions of 35-50 grams. Clinics that offer chelation – removal of heavy metals or as a cardiovascular remedy – often also offer intravenous vitamin C infusions. (In the US: in New England, this is offered by the Marino Center in Cambridge, Mass; in California, in the Midwest, Dr. Hugh Riordan offers these treatments at http://www.brightspot.org.)

5. Overcoming an acute illness takes a tremendous amount of energy. Be sure to keep up your healthy food intake (use easily digested protein such as soy shakes) and get lots of rest. This may sound obvious, but there are many people today who attempt to work and go through their daily routine even when they are ill. This is not the way to heal quickly from illness.

Appendix E
Safe Testing Protocols for Cardiovascular Disease

There are many ways that doctors can check the health of your cardiovascular system. Some of these are relatively safe. Others can be quite harmful.

Cardiovascular Blood Tests

The usual blood tests done by doctors for cardiovascular disease screening – to measure cholesterol and triglyceride levels – are not actually very useful in tracking cardiovascular health. The only blood test that is at all valuable for cardiovascular disease is the measure of the level of lipoprotein(a), which is a test that is not normally done – you need to request it.

When you have used the Natural Cardiovascular Therapy consistently for several months and your cardiovascular symptoms have subsided, the amount of lipoprotein(a) in your bloodstream is a measure of how much plaque material is still being removed by the therapy. [You may recall that your body produced lipoprotein(a) and deposited plaques when you had insufficient vitamin C in your bloodstream. Since the Natural Cardiovascular Therapy supplies large amounts of vitamin C, your body no longer manufactures lipoprotein(a).]

Electrocardiogram (EKG)

Electrocardiograms are completely non-invasive tests of the electrical activity of your heart. A doctor or heart specialist can tell from an EKG whether your heart is currently pumping correctly, that is, whether there has been any very obvious physical damage to your heart. However, it is not a good measure of whether there are (still) plaques of lipoprotein(a) in the walls of your coronary artery or your aorta or on your heart valves, until there is so much plaque that its function is impaired. A slight improvement of an ordinary EKG is one taken before and during a treadmill stress test, which checks the functioning of your heart during heavy exercise.

Echocardiogram

This is a safe and accurate visual method for checking the overall health and functioning of your heart and its muscle tissue and valves. An ultrasound measuring device, similar to that used to check the health of a growing fetus in a pregnant woman, is placed on various parts of your chest, and fairly accurate images of your moving, beating heart are displayed for the cardiologist or technician to record. Muscle and beat irregularities are easily detected.

Magnetic Resonance Imaging (MRI)

One of the safest and most accurate methods used today to detect plaques in the coronary artery and other arteries is up-to-date MRI scanning. This technique completely avoids the radiation exposure associated with CT scanning. Older, static MRI technology could not analyze active parts of the body such as the heart, but the newer scanners (and associated software) can do this just as accurately as a CT scanner. You must ask whether the MRI hardware and software is capable of providing accurate images of active organs.

Harmful techniques and procedures:

Angiogram – During this extremely invasive procedure, a catheter (probe) is inserted into an artery

and guided directly into your coronary artery. Dyes are then pumped into the artery where the catheter is located and x-rays are taken. The trauma caused by this procedure can have deadly consequences.

Electrocardiology – this invasive procedure is used by heart specialists who believe that arrhythmia and tachycardia (out-of-control beating of the heart) should be solved by **cardiac ablation**. A catheter is inserted into a leg vein and guided into a chamber of the heart. The electrocardiologist then performs a "study" to determine the "cause" of the irregular heartbeat. A cardiac ablation unit then delivers a high-energy radio frequency burst to destroy a small piece of heart tissue to prevent it from causing a dual or duplicate electrical signal, or to destroy the entire "AV node" that signals the pumping action of your heart and replace it with a pacemaker. This procedure is dangerous and irreversible. In contrast, the Natural Cardiovascular Therapy provides the nutrients necessary for the damaged parts of your heart to heal themselves and restore proper electrical signaling.

PET – Positron Emission Tomography – in this procedure radioactive salts are literally injected into your bloodstream and then the radiation from your body is used to make images of your heart and other organs. Internal radiation is extremely hazardous – it is known to cause cancer: it damages a large amount of DNA because it is internal and the exposure is prolonged.

Technetium-99 Heart Scan – Similar to PET, this procedure involves injecting a radioactive substance called technetium-99 into your bloodstream, and then take moving "pictures" of your heart by detecting the radioactive emissions from it. As mentioned above, this is internal radiation, which is extremely hazardous to your health as it is a known cause of cancer.

As a health and environmental researcher, I am appalled that procedures that inject radioactive substances into the body – and therefore expose the entire body to prolonged radiation damage – have become widespread. Internal radiation injury from nuclear bomb fallout of the 1960's and radiation leaks from nuclear power plants are one of the larger sources of cancers in the US. I can say unequivocally that these last two techniques – PET and Technetium-99 scanning – should never have come into use.

Tracking your progress

If you have damage to your heart as a result of a heart attack or long-standing heart disease (congestive heart failure), it will take some time using Natural Cardiovascular Therapy for your heart to recover. However, your heart has an amazing capacity for healing and renewal, even when significant damage has been done.

The EKG and echocardiogram, described above, are the safest methods to keep track of the overall health of your heart muscle and valves. You may have your doctor check your blood lipoprotein(a) levels to find out if the plaques are still being removed from the artery walls. An MRI is the most accurate method for tracking whether coronary artery plaques have been completely resolved.

Appendix F
The Six Stages of Cardiovascular Disease

It has taken decades to find the train of events that cause the progression of cardiovascular disease. The most recent research was completed in 2010, but it has not been integrated into medical practice, literature, or any popular literature. Here is the chain of events, presented in a form that is understandable. Please note that not all of the stages appear in all cases; sometimes stages 3-5 are not prominent, though cardiovascular disease is quietly progressing. This process begins at birth. In extreme cases, such as profound ascorbate deficiency from birth, the resulting hemorrhage can result in high rates of infant mortality - Sudden Infant Death Syndrome.

Stage 1- Vitamin Deficiency. Ascorbate (vitamin C) deficiency (which is almost universal in humans) leads to inability of connective tissue cells (collagen) to self-repair from every day wear and tear and from microscopic holes created by white blood cells drilling their way through arteries to reach bacteria. If these sites are not healed or patched, we will hemorrhage – we'll bleed to death internally. The normal collagen repair process requires vitamin C and two amino acids – lysine and proline. (As a side note: excess glucose caused by eating dietary sugars competes with vitamin C, causing even more deficiency.)

Stage 2 - Inflammation. The sites of this disrepair signal the manufacture of an inflammatory chemical called IL-6 (Interleukene-6), which in turn signals the production of lipoprotein(a), a sticky compound otherwise known as cardiovascular plaque, which our bodies use as a temporary band-aid to prevent hemorrhage. Lipoprotein(a) is deposited throughout the arterial system and at hormone receptors.

Stage 3 - Insulin Resistance and Hypertension. The process inhibits insulin reactivity. That is, cells become less able to turn glucose into energy because their insulin receptor is inhibited by lipoprotein(a). This is called insulin resistance. Meanwhile, cells are still sending signals to the pancreas to produce more insulin to invoke their (inhibited) glucose-to-energy systems. This leads to hyperinsulinism – literally producing too much insulin. This in turn causes uncontrollable, rapid weight gain, as a result of excess insulin signaling fat cells to convert blood glucose into glycogen (and then into fat). At the same time, arterial deposits of lipoprotein narrow the arteries, causing hypertension (high blood pressure).

Stage 4 – Severe Hypoglycemia. Excess insulin periodically rapidly depletes blood glucose, causing periodic severe hypoglycemia – literally insulin shock. This can be life-threatening because many life-sustaining organs and cellular processes require blood glucose. Meanwhile, because insulin resistance becomes has become severe, cells needing glucose for energy production cannot get enough and are continually signaling for more insulin. The combination of excess insulin, periodic glucose depletion, lipoprotein(a) plaque accumulation and resultant reduced blood flow in small arteries results in further weight gain, increased blood pressure, cellular nutrient depletion, fatigue, depression, hair loss, collagen degradation, spontaneous skin lesions, very slow healing of wounds, decreased immunity, susceptibility to colds and flu, and generalized whole-body degeneration.

Stage 5 – Type II Diabetes. The symptoms of Stage 4 accelerate. If the process is not stopped blood sugar levels become very difficult to control. In some cases the pancreas becomes so overworked that some pancreatic cells become inoperative and blood sugar increases without control. This is advanced Type II diabetes. Blood sugar interferes with vitamin C metabolism, accelerating lipoprotein(a) (cardiovascular plaque) accumulation leading to complete blockage of capillaries and small arteries, causing diabetic neuropathy and retinopathy.

Stage 6. The build-up of lipoprotein(a) eventually clogs small and large arteries in the heart, brain, lungs, etc. – acute cardiovascular disease – leading to heart attack or stroke.

The Pauling/Rath cardiovascular regimen starting on page 10 in this guide stops and reverses this process, and it is the only known regimen that is proven to do so. However, the amounts specified should be modified by body weight, using 160 lbs body weight as the basis. (Thus if you weigh 200 lbs, increase the doses by 1/4; if you weigh 240 lbs, increase by 1/2, etc.)