"EMPOWERING AND HEALTH-ENHANCING INFORMATION"
—Christiane Northrup, M.D., Author of *The Wisdom of Menopause*

WHAT YOUR DOCTOR DOESN'T KNOW ABOUT Nutritional Medicine MAY BE KILLING YOU

Turbo-charge your body's natural healing power

Why your cholesterol level is NOT the key to protecting you from heart disease

What medical evidence *really* indicates about the root cause of cancer, diabetes, arthritis, Alzheimer's, fibromyalgia, and many other diseases

Start your anti-aging strategy now and protect yourself against the *dark side of oxygen*

RAY D. STRAND, M.D.

A PDF COMPANION TO THE AUDIOBOOK

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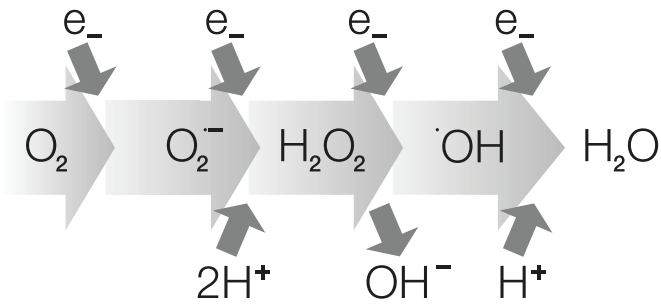
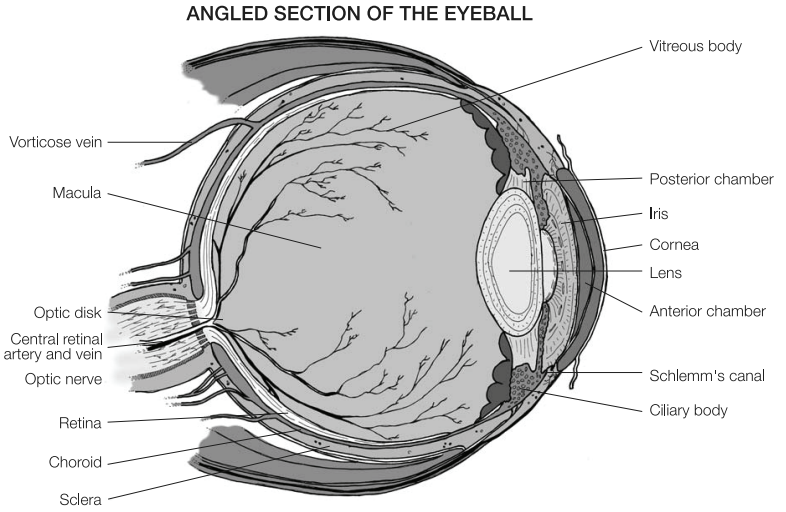
THREE | The War Within

Chemical Pathway for Oxygen Reduction to Water

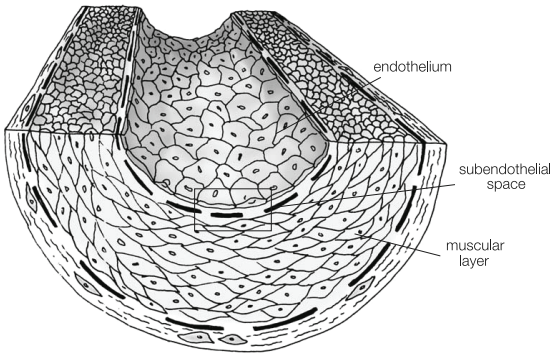


FOUR | Our Repair System: The MASH Unit



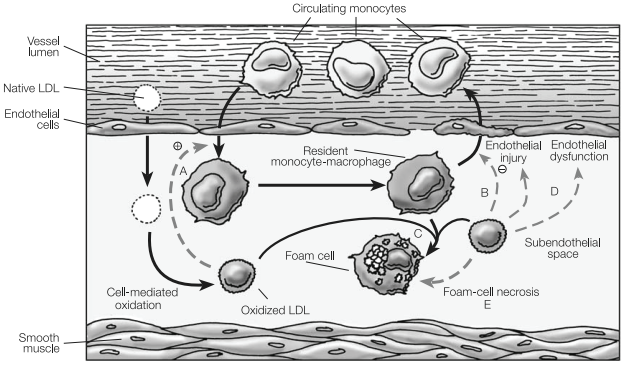
FIVE | Heart Disease: An Inflammatory Disease

Figure 1 — Normal Artery



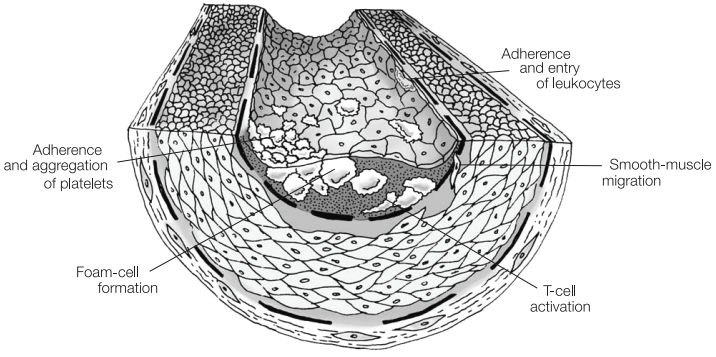
The inner surface of the artery is made up of a sensitive, single layer of cells called the endothelium and underneath is the muscular layer. Between the endothelium and the muscular layer is the subendothelial space. This is where all the damage begins to take place.

Figure 2 — Oxidation of LDL Cholesterol



The native LDL cholesterol actually becomes trapped in the subendothelial space where it can be easily oxidized if there are not adequate antioxidants available. This oxidized LDL cholesterol is then easily "gobbled up" by the monocyte white cells until it is literally "stuffed" with fat. Remember, this does not happen if the LDL cholesterol is not oxidized. When this monocyte becomes stuffed with the oxidized LDL cholesterol, it becomes a "Foam-cell." The Foam-cell then causes damage to the sensitive lining of the artery by creating oxidative stress in this area. This leads to injury and dysfunction of the endothelium, and the process of hardening of the arteries is off and running.

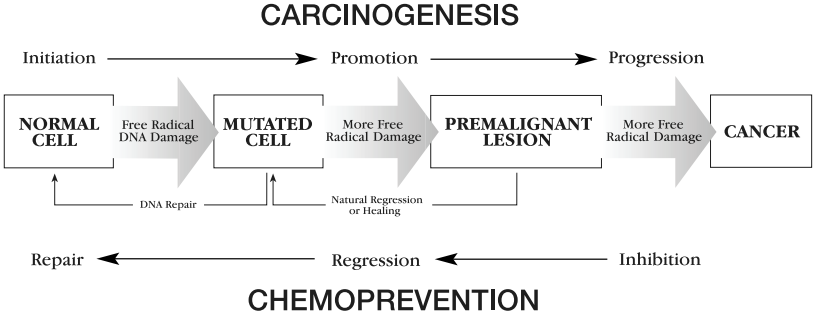
Figure 3 — Clogged Artery



The foam-cells begin to accumulate, attracting in more monocytes, which eventually become foam-cells themselves. Smooth muscle begins to proliferate and also begins to migrate into this area and the lumen of the artery begins to narrow. The lining of the artery becomes more dysfunctional, which promotes further narrowing because of spasm of the artery and adherence of platelets.

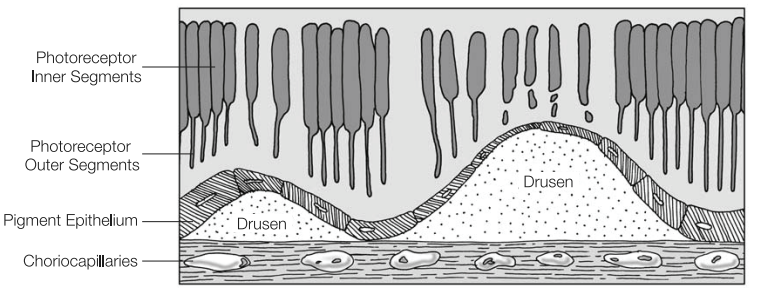
EIGHT | Chemoprevention and Cancer

Figure 1



NINE | Oxidative Stress and Your Eyes

Damage to the Photoreceptors



The development of drusens separates the photoreceptors of the eye from its blood supply and causes an area of blindness.

SIXTEEN | Physicians' Bias Against Nutritional Supplements

Table 1 — Amount of Food Needed to Achieve these Optimal Levels of Nutrients

Vitamin E (450 IU)
- 33 heads of spinach
- 27 pounds of butter
- 80 medium avocados
- 80 mangos
- 2 lbs. of sunflower seeds
- 23 cups of wheat germ
- 1.5 quarts of corn oil

Vitamin D (600 IU)
- 22 large egg yolks
- 6 cups of fortified milk
- 30 tablespoons of margarine
- 15 ounces of shrimp

Vitamin C (1300 mg)
- 17 medium kiwifruit
- 16 medium oranges
- 160 medium apples (including the skin)
- 10.5 cups of fresh orange juice
- 16 cups of raw chopped broccoli

Folate (1 mg)
- 3.8 cups of cooked asparagus
- 4 cups of black beans
- 20 medium oranges
- 10 cups of brussel sprouts
- 3.8 cups of cooked spinach

Vitamin B6 (27 mg)
- 41 medium bananas
- 38 medium baked potatoes with skin
- 77 cups of lentils
- 15 lbs. of chicken breast
- 18 cups of wheat germ

Riboflavin (27 mg)
- 22 ounces of beef liver
- 16 cups of lowfat yogurt
- 9 dozen eggs
- 3.25 gallons of lowfat milk
- 64 cups of cooked spinach

Thiamin (27 mg)
- 135 cups of brown rice
- 2 lbs. of ham
- 3 lbs. of sunflower seeds
- 64 cups of green peas
- 12 cups of wheat germ

SEVENTEEN | Cellular Nutrition: Putting It All Together

Basic Nutritional Supplement Recommendations

ANTIOXIDANTS	The more and varied your antioxidants, the better.
VITAMIN A	I do not recommend the use of straight vitamin A because of its potential toxicity. Instead supplement with a mixture of mixed carotenoids. Carotenoids become vitamin A in the body as the body has need and they have no toxicity problems.
CAROTENOIDS	It is important to have a mixture of carotenoids rather than taking only beta-carotene. • Beta-carotene 10,000 to 15,000 IU • Lycopene 1 to 3 mg • Lutein/Zeaxanthin 1 to 6 mg • Alpha carotene 500 to 800 mcg
VITAMIN C	A mixture of vitamin C is important, especially calcium, potassium, zinc, and magnesium ascorbates, which are much more potent in handling oxidative stress. • 1000 to 2000 mg
VITAMIN E	It is important to be getting a mixture of natural vitamin Es: d-alpha tocopherol, d-gamma tocopherol, and mixed tocotrienol. • 400 to 800 IU
BIOFLAVANOID COMPLEX OF ANTIOXIDANTS	Bioflavanoids offer a necessary variety of potent antioxidants and are a great asset to your supplements. The amounts may vary but should include the majority of the following: • Rutin • Quercetin • Broccoli • Green Tea • Cruciferous • Bilberry • Grape-Seed Extract • Bromelain
ALPHA-LIPOIC ACID	• 15 to 30 mg
CoQ10	• 20 to 30 mg
GLUTATHIONE	• 10 to 20 mg • Precursor: N-acetyl-L-cysteine 50 to 75 mg
B VITAMINS (COFACTORS)	• Folic Acid 800 to 1000 mcg • Vitamin B1 (Thiamin) 20 to 30 mg • Vitamin B2 (Riboflavin) 25 to 50 mg • Vitamin B3 (Niacin) 30 to 75 mg • Vitamin B5 (Pantothenic Acid) 80 to 200 mg • Vitamin B6 (Pyridoxine) 25 to 50 mg • Vitamin B12 (Cobalamin) 100 to 250 mcg • Biotin 300 to 1,000 mcg

Basic Nutritional Supplement Recommendations (cont.)

OTHER IMPORTANT VITAMINS	• Vitamin D3 (Cholecalciferol)----450 IU to 800 IU • Vitamin K 50 to 100 mcg
MINERAL COMPLEX	• Calcium 800 to 1,500 mg depending on your dietary intake of calcium • Magnesium----500 to 800 mg • Zinc----20 to 30 mg • Selenium----200 mcg is ideal • Chromium----200 to 300 mcg • Copper----1 to 3 mg • Manganese----3 to 6 mg • Vanadium----30 to 100 mcg • Iodine----100 to 200 mcg • Molybdenum----50 to 100 mcg • Mixture of Trace Minerals
ADDITIONAL NUTRIENTS FOR BONE HEALTH	• Silicon----3 mg • Boron----2 to 3 mg
OTHER IMPORTANT AND ESSENTIAL NUTRIENTS Improved Homocysteine levels and improved brain function	• Choline----100 to 200 mg • Trimethylglycine----200 to 500 mg • Inositol----150mg to 250 mg

Supplementing Your Diet

ESSENTIAL FATS:	• Cold-Pressed Flaxseed oil • Fish Oil Capsules
FIBER SUPPLEMENT	• Blend of soluble and insoluble fiber----10 to 30 mg depending on your dietary consumption of fiber (ideal is 35 to 50 grams of total fiber daily)

***** Several nutritional companies are putting together these essential nutrients into one or two different tablets, which need to be taken 2 to 3 times daily in order to achieve this level of supplementation. Look for a high-quality product that comes as close as possible to these recommendations. If the manufacturer follows pharmaceutical GMP and USP guidelines, you will be giving yourself the absolute best protection against oxidative stress.***

The essential fats and fiber provide added nutrients that are usually missing in the Western diet.

Specific Optimizers I Recommend Be Added to the Nutrients in Table 1 for Each of These Particular Diseases

Heart Disease

I add approximately 100 mg each of grape-seed extract and CoQ10 along with some additional magnesium, about 200 to 300 mg per day. I feel it is critical for these patients to be taking a basic product that contains a mixture of vitamin Es as mentioned in Table 1.

If one's homocysteine level does not drop below 7 with just the B vitamins listed in Table 1, I will add 1–5 g of TMG (trimethylglycine) to the patient's regimen.

Cardiomyopathy

I add 300–600 mg of CoQ10 to a patient's regimen along with some additional magnesium and 100 mg grape-seed extract. Patients will usually see a response within 4 months. CoQ10 is very safe and the top researchers in the country feel comfortable pushing to 600 mg daily if the patient is not responding to the lower doses. However, some cardiologists like to perform blood level testing on the amount of CoQ10 in your blood before they begin to push to these higher levels.

Cancer Patients

It is hard to give a simple formula for all the various cancers. But if there is no evidence of the cancer spreading (or the surgeon believes he totally removed it), I will add 200 mg each of grape-seed extract and CoQ10. If the patient has metastatic cancer (cancer that's spread), I will recommend 300 mg of grape-seed extract along with 500–600 mg of CoQ10. Children

ages 8 to 15 should take only half of the recommended levels on Table 1 and half of the grape-seed extract and CoQ10 recommended here.

Macular Degeneration

For patients with this condition, I primarily add 300 mg of grape-seed extract to the nutrients found in Table 1. I also add approximately 6–12 mg of additional lutein to the regime. I have found that if these patients are going to improve, it will occur within the first 4 months.

Multiple Sclerosis

My patients with MS have shown that at least 400 mg of grape-seed extract, 200–300 mg of CoQ10, and even some additional 500 to 1000 mg of vitamin C can be helpful in this disease. I warn my MS patients that it may be more than 6 months before they see any improvement.

Lupus and Crohn's Disease

These patients need about 300 mg of grape-seed extract and 200 mg of CoQ10 added to the basic supplements. Again, if these patients improve, it's usually after about 6 months.

Osteoarthritis

I add 1,500–2,000 mg of glucosamine sulfate and about 100–200 mg of grape-seed extract. I have no problem if they also add 400 to 600 mg chondroitin sulfate or even 100 mg of MSM if the patients feel these help. I do not feel the medical evidence is strong enough at this time to absolutely recommend them as optimizers.

Rheumatoid Arthritis

Again I add 1,500–2000 mg of glucosamine sulfate, 300 mg of CoQ10, 400 mg of grape-seed extract, and 200 mg of additional magnesium and calcium. And I increase the omega-3 fatty acids by adding 3 to 4 fish oil capsule or two teaspoons of cold-pressed flax seed daily.

Osteoporosis

For these patients I do not recommend adding optimizers to my recommendations on Table 1; however, I strongly encourage them to be getting the

right levels of vitamin D, calcium, and magnesium and to be sure they are taking these with food. They also need to get involved in an aggressive weight-bearing exercise program for the upper body.

Asthma

I add 200–300 mg of grape-seed extract (children should take about 2 mg per pound per day) along with additional 1,000 mg vitamin C (children: 200–500 milligrams), and 200 mg magnesium (children could add an additional 100 mg).

Emphysema

The basic nutrients in Table 1 are usually sufficient. I also may add 200 mg of grape-seed extract along with additional vitamin C and magnesium as indicated above under asthma.

Alzheimer's Dementia and Parkinson's Disease

As I mentioned earlier, these patients have already lost a significant number of brain cells before the diagnosis is even made. I have seen some significant improvement with Parkinson's disease, though, if the patient starts an aggressive nutritional program early in his disease. I recommend adding 400 mg of grape-seed extract to the regimen on Table 1. There is good medical evidence that the progression of the Alzheimer's disease and Parkinson's disease may be slowed with this regimen.

Diabetes Mellitus

I add approximately 100–200 mg of additional grape-seed extract to this regime. The cellular nutrition listed on Table 1 definitely provides everything else the body needs.

Chronic Fatigue/ Fibromyalgia

I add 200–300 mg of grape-seed extract along with 100–200 mg of CoQ10 to the basic supplement program. Sometimes I need to increase the grape-seed extract to 400 or even 500 mg daily in order to capture this disease. Once patients are responding favorably, the amount can be decreased to a lower maintenance level.