

# OUR HEALTH IS UNDER ATTACK

## Dr Ray Strand

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He has been in private family practice for over 30 years and over the past 7 years has focused his practice on nutritional medicine. He is quickly becoming one of the leading authorities in nutritional medicine in the world. He has lectured on nutritional medicine across the United States, Canada, Australia, New Zealand, and England.

In the two articles that follow; Oxidative Stress & Cellular Nutrition he shares his findings and recommendations for optimal health and sound nutrition.

## Oxidative Stress

Even though the average life expectancy in the United States has increased dramatically during this past century, our quality of life due to chronic degenerative disease has taken a major hit. We are essentially "living too short and dying too long". Most of us can simply look forward to suffering and dying from heart disease, cancer, stroke, diabetes, Alzheimer's dementia, Parkinson's disease, arthritis, macular degeneration, and the list goes on and on, unless we literally attack the underlying cause of all of these diseases—oxidative stress.

How long do you expect to live? Now envision what your last twenty years will look like. I can assure you my patients today are not as concerned with the number of years in their lives as they are the quality of life in those years. Who wants to live to a ripe old age if he or she cannot even recognize close family members because of Alzheimer's dementia? Who looks forward to a decade or two of suffering severe joint or back pain due to degenerative arthritis?

One of my close friends told me recently that he simply wants to live until he dies. Is this your desire? It certainly is mine. That is why I recommend preventative rather than post-problem medicine--empowering people to avoid getting major diseases in the first place. Over the past seven years, I have changed my approach. I now strongly encourage and support my patients in taking a three-fold approach to health: eating well, practicing a consistent exercise program, and daily consuming high-quality nutritional supplements. I now use medication as a last resort—not as my first choice.

Do you fear growing old? Have you accepted chronic disease or pain as a given in your future? Are you willing to make necessary life changes to ensure your health? I believe a full and abundant physical life does not need to start slipping

away at age forty. Each year of your life can be your very best. But first you must understand the war that is waging within every one of our bodies.

Oxygen is essential for life itself. But did you know it is also inherently dangerous to our existence? I call this the "dark-side" of oxygen. And as a result, we are essentially rusting both inside and out. The same process that causes a cut apple to turn brown or iron to rust is the cause of all the chronic degenerative diseases we fear and even the aging process itself.

Consider the aging of our skin. Oxidative stress is the cause of wrinkles, sagging skin, and age spots. The next time you are with a large gathering of people of different ages, observe closely the change you see in people's skin. Aging is a process we all take for granted, but when you look more closely, and compare a baby's face, to that of a grandparent's, the effects of our largest organ being exposed to all the pollutants in the air, sunlight, and cigarette smoke is baffling. This aging of the skin is an outward manifestation of "oxidative stress," which is occurring within every cell in your body.

Over the past 7 years, I have reviewed well over 2,000 medical and scientific studies in regards to nutritional supplements and their affect on your health. These studies appearing in medical journals like the *New England Journal of Medicine*, *Journal of the American Medical Association*, *British Lancet*, and *Annals of Internal Medicine* report that beyond any doubt the "root" cause of well over 70 chronic degenerative diseases is "oxidative stress." These are the "who's who" of diseases we all fear and want to avoid; diseases like heart attacks, strokes, diabetes, cancer, arthritis, Alzheimer's dementia, macular degeneration, lupus, MS, fibromyalgia, and chronic fatigue. "So what," you may be wondering, "is 'oxidative stress'?"

Within every cell of the body is a furnace called the *mitochondria*. As oxygen is utilized within the furnace of the cell to create energy and life itself, occasionally a charged oxygen molecule is created, called a "free radical." This free radical has at least one unpaired electron in its outer orbit essentially giving it an electrical charge. If this free radical is not readily neutralized by an antioxidant it can go on to create more volatile free radicals, damage the cell wall, vessel wall, proteins, fats, and even the DNA nucleus of our cells. Chemically this reaction has been shown to be so volatile that it actually causes bursts of light within our bodies!

Imagine yourself in front of a crackling fireplace and I'll give you the best illustration I have to explain the process of oxidation. The fire burns safely and beautifully most of the time, but on occasion out pops a hot cinder that lands on your carpet and burns a little hole in it. One cinder by itself doesn't pose much of a threat; but if this sparking and popping continues month after month, year after year, you will have a pretty "ratty" carpet in front of your fireplace.

The fireplace represents the furnace of the cell (the mitochondria), the cinder is the charged "free radical," and the carpet is your body. Whichever part of your body receives the most free radical damage will be the first to wear out and potentially cause one of these degenerative diseases. If it's your arteries, you could develop a heart attack or stroke. If it is your brain, you could develop Alzheimer's dementia or Parkinson's disease. If it's your joints, you could develop arthritis.

Through biochemical research we're learning that we are not defenseless against this attack on our body by free radicals. Antioxidants are like the glass doors or fine-wire mesh we place in front of our fireplace. The sparks are still going to fly but our carpet will then be protected. As you begin to imagine the war that is taking place within every cell in your body, you can envision the two opposing forces: the enemy—free radicals; and your allies--antioxidants and their supporting nutrients.

Living a healthy life becomes a matter of balance. You must have enough antioxidants available to readily neutralize the number of free radicals your body produces. If you don't, "oxidative stress" will occur. When this oxidative stress is allowed to persist over a prolonged period of time, you will most likely develop a serious chronic degenerative disease.

Each of us must ask, "Am I getting enough antioxidants from my diet to protect myself from this onslaught of free radicals or do I need to be taking nutritional supplements?" This is the question that I've had to ask myself as I have spent countless hours researching medical literature. You see I was taught in medical school that you don't need supplements—that you can get everything you need from a good, healthy diet. And this is what I told my patients for years. I was wrong.

Since balance is the key, we need to look closely at the individual players that are at war within. The number of free radicals you produce each and every day is never the same. All the pollutants in our air, food, and water dramatically increase the number of free radicals we produce. Enormous stress, excessive exercise, cigarette smoke, sunlight, radiation, and every drug prescribed greatly increases the number of free radicals produced in the body. In fact, there has never been a generation on this planet subjected to more oxidative stress than this present one. We are literally under attack from our polluted environment, stressful lifestyles, and over-medicated society.

This ongoing attack is depriving us of our most precious gift—our health. But God did not leave us defenseless against this onslaught by free radicals. In fact, we actually have our own army of antioxidants, which are able to neutralize free radicals and render them harmless. In generations past, these defense systems were sufficient. Unfortunately this is no longer the case. Our bodies' defense systems need additional allies.

Most antioxidants come from vegetables and fruit. This creates a gap in our protection, because our foods have become significantly depleted in their content of antioxidants and supporting minerals as a result of mineral depletion in our soils, green harvesting, cold storage, foods that are highly processed, our poor food choices and food preparation.

At a time when we are under the heaviest attack from the environment around us, our natural defense systems are becoming overwhelmed and depleted. We must do all we can to rebuild our antioxidant systems with a healthy diet, but too you need to learn how complete and balanced nutritional supplementation with high quality supplements cellular nutrition is our best hope in winning this war within and protecting our health.

## **Cellular Nutrition**

We have no choice but to live in our present environment. Our bodies are affronted daily by excessive production of free radicals caused by our polluted environment, stressful lifestyles, and over-medicated society. Though we can certainly reduce the amount of free radicals our bodies produce by: not smoking, decreasing stress levels, and avoiding toxic chemicals, most of our bodies are still unable to fight the overwhelming daily attack on the natural defense system. Remember balance is the key--we need enough antioxidants available to neutralize the free radicals produced.

Over the past 50 years, nutritional medicine and supplementation has focused on replenishing a nutritional deficiency. Countless hours and dollars have been spent trying to determine exactly which nutrients our bodies are depleted of. Blood tests, urine tests, hair samples, muscle testing, and more have been conducted in an attempt to determine which nutrients we need to supplement. However, we have been aiming at the wrong target. The presenting problem is not a nutritional deficiency, but rather, underlying oxidative stress. Oxidative stress has now been shown beyond any shadow of doubt via medical research to be the root cause of over 70 chronic degenerative diseases. Diseases like heart disease, stroke, cancer, diabetes, arthritis, Alzheimer's dementia, macular degeneration, lupus, MS, and the list goes on and on.

Because oxidative stress is our concern rather than specific nutritional deficiencies, we must determine what is the best approach to preventing or controlling oxidative stress. This is accomplished by bolstering one's natural defenses through cellular nutrition.

Cellular nutrition is simply providing ALL nutrients to the cell at optimal levels. This allows the cell to determine what it actually does and does not need. I don't have to worry about determining which nutrients the cell is deficient in. I simply provide all of the important nutrients at optimal levels--those levels shown to provide a health benefit in the medical literature. Any nutritional deficiencies will

be automatically corrected over the next few months by this approach and all the other vital nutrients will be brought up to their optimal levels as well.

Cellular nutrition is providing the body with all the antioxidants along with the supporting B vitamins and antioxidant minerals at optimal levels. This is "preventive medicine" at its best because we can literally attack the disease process at its core by preventing oxidative stress from occurring.

You may be wondering if we can control oxidative stress by simply improving our diet and eating more fruits and vegetables. This is definitely a good start. By simply eating 7 to 9 servings of fruits and vegetables each day you can decrease the risk of heart attack, stroke, Alzheimer's dementia, and cancer, two to three fold. We certainly want to supplement a good diet—not a bad diet. However, even if you eat a great diet you can barely obtain the RDA level of all essential nutrients. Medical studies have shown that less than 1% of the American population accomplishes this on a consistent basis.

## **Recommended Daily Allowance (RDA)**

Research studies reveal standards of recommended daily allowance (RDA's) have absolutely nothing to do with chronic degenerative diseases. RDA's were developed to avoid what are known as acute deficiency diseases like scurvy (deficiency of vitamin C), rickets (deficiency of vitamin D), and pellagra (deficiency of niacin). In other words, if you consumed the RDAs for vitamin C, vitamin D, and niacin, you would not develop any of these illnesses.

Admittedly, the RDA's have done their job—how many people do you know suffer from these diseases? RDA's first developed in the 1920's and 1930's. The list of nutrients included in the RDAs grew over the next two decades and in the early 1950s, the definition of RDAs expanded to include the amounts of nutrients needed for normal growth. Despite the fact that RDAs have proved useful, most physicians and laypeople tend to assign more meaning to RDA standards than they should.

After researching medical literature on the topic of oxidative stress and the amount of nutrients needed to prevent it, I found the optimal levels of nutrients known to provide health benefits are significantly greater those suggested by RDA levels. For example, the optimal level of vitamin E is 400 IU. The RDA is only 10 to 30 IU. That being the case, you may consider eating 400 IU of vitamin E. You would only need to eat 33 heads of spinach, or 27 pounds of butter; 80 avocados will do, or an alternative 5 pounds of wheat germ each and every day to obtain that level of vitamin E.

Similarly, the optimal level of vitamin C is approximately 1200 to 2000 mg daily, while the RDA is only 60 mg. To eat the optimal levels of vitamin would need to consume 18 oranges, or 17 kiwifruit, or 160 apples. Put in this perspective, it becomes clear that the only way to obtain these levels of nutrients is to

supplement our diet. And this requires more than a generic multiple vitamin. One-a-day multiple vitamins are primarily based on RDA levels, thus providing no measurable health benefits. Significantly more potent supplements are needed each day to provide the optimal levels to provide cellular nutrition. I will discuss more specific details in How to Choose a Quality Supplement.

## **The "Magic Bullet" Approach**

Most scientific studies done on nutritional supplements are approached in the traditional way of testing drugs—hoping to discover a "magic bullet". A disease is isolated and targeted by one specific drug. The pharmaceutical results of that drug are then measured.

Research trials have been similarly conducted for nutritional supplements. For example, calcium and vitamin D have been tested for their effects on osteoporosis; vitamin E for heart disease, magnesium for irregular heartbeats or selenium to reduce the risk of cancer.

One problem remains, however: vitamins such as C, D and E are not drugs. They are natural nutrients that our bodies get from our foods. The various antioxidants and supporting nutrients work on different types of free radicals and in different parts of the body. Vitamin E is the best antioxidant within the cell membrane. Vitamin C is most effective within the plasma. Glutathione works most efficiently within the cell itself. Literally dozens of antioxidants are at work in various parts of the body and are effective against particular types of free radicals. They work together—synergistically-- to control oxidative stress. This means that 1 plus 1 does not equal 2, but 8 or 10. Medical research separates these nutrients out and tries to study their individual effect. The amazing fact remains that the overwhelming majority of studies actually does show a health benefit with even an individual nutrient. However, since oxidative stress is the underlying problem we must concern ourselves with, it is important to realize that all of these nutrients work together—synergy.

Vitamin C actually replenishes vitamin E and intracellular glutathione so it can be used over and over again. Alpha lipoic acid also regenerates vitamin E and glutathione. In addition, these antioxidants need optimal levels of the B vitamins—folic acid, vitamin B1, B2, B6, and B12—in order to perform at optimal levels. They also need the so-called antioxidant minerals such as: selenium, manganese, copper, and zinc to do their job right. If you have all the glutathione in the world available but are depleted in selenium, which glutathione needs to work, there will be very little health benefit.

When all of the necessary nutrients are provided to the cell in a complete and balanced nutritional supplement, the combined effect is phenomenal. The potency of these nutrients in optimizing our body's natural antioxidant, immune, and repair systems is certainly possible. Oxidative stress can be controlled and our health will be protected.

I also apply these principles for my patients who are already suffering from a major chronic degenerative disease. I provide them with the same basic cellular nutrition I recommend for all my patients and then I add additional potent antioxidants to the regime tailored to each specific disease. When physicians take advantage of the most tremendous healing asset, the host--our bodies, and support it rather than denying its importance in the healing process, amazing clinical improvement is possible.

Cellular nutrition is about health, not disease. "Attacking" the root cause of chronic degenerative disease is true preventive medicine. By applying these same principles, you who are in good health can decrease the risk of developing these chronic degenerative diseases.

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