

It's time to face facts: Free radicals are everywhere, and our bodies, despite our best precautions, are under constant attack. When free radical development overwhelms our cells, it is known as oxidative stress. Not only has oxidative stress been linked to premature aging, but it may play a role in most diseases, especially that of diabetes mellitus, heart disease, Alzheimer's disease, and cancer. But a regular regimen of taking antioxidants may provide natural and effective protection against the dangers posed by free radicals.

## **Not Taking Antioxidants? Here's Why You Should...**

The field of nutrition is overwhelming for most people, doctors included. Over the years, on numerous occasions, I have been asked what nutrients I would recommend to help treat and prevent various diseases. The answer to this is actually quite simple, if you keep just one thing in mind. Most diseases in the body, including aging, are caused by one central process, that being oxidative stress.

So what is oxidative stress? As part of normal cellular metabolism, a tiny percentage of metabolic end products are unstable because they are missing an electron. This unstable molecule is known as a free radical. It will then attack an adjacent tissue, including proteins, lipids and even DNA, in order to "steal" an electron back. In the process of doing this, these adjacent tissues can become damaged. The process of stealing back this electron is known as oxidation. You see this quite clearly when you cut open an apple and let it sit for a few hours. The browning of the apple is the oxidative process. That same thing happens within our bodies when there is excessive production of free radicals. Aside from the natural free radicals that are produced by our bodies, we are exposed to external free radicals from such sources as cigarette smoke, toxins in the food, air and water, and excessive sunlight. This excessive amount of free radical development, which overwhelms our cells, is known as oxidative stress. Oxidative stress has been linked to most diseases, including premature aging.

One disease that is particularly vulnerable to oxidative stress is that of diabetes mellitus. Although our bodies do produce natural antioxidants, as we age they become less abundant. The need for antioxidants to counter the oxidative stress is critical. In a study published in the September 2004 journal of *Diabetes Care*, researchers from New Zealand studied eighty overweight adults, ages 31 to 65. These individuals were at increased risk of developing insulin resistance leading to diabetes mellitus. Half of the group was randomly assigned to take vitamin E 800 IU daily for the first three months, followed by 1,200 IU daily for the next three months. The other half of the group was given a placebo pill. Researchers found that at both the three- and six-month period, particular markers for oxidative stress in the blood had decreased in the vitamin E group. In addition, after three months, blood sugar levels and insulin sensitivity had also improved in the vitamin E group, although this did not remain throughout the six-month study. Researchers, however, did find that blood levels of a particular liver enzyme had consistently fallen. This particular liver enzyme, called ALT, has been tied to increased diabetic risk. The authors of this study indicated that vitamin E may boost insulin sensitivity and decrease diabetes in a number of ways, including reducing oxidative stress to cells, and by improving liver function.

Oxidative stress has wide-reaching effects. It has even been shown to play some role in erectile dysfunction in diabetics. In a study published in the journal of *Andrology* from September/October 2004, researchers looked at the effects of vitamin E in twenty male rats that had chemically induced diabetes mellitus. Those rats treated with vitamin E had improved erectile function through various measures. It appeared that the vitamin E-decreased oxidative stress resulted in an increase of nitric oxide, a critical component for proper sexual function.

Vitamin E is not the only nutrient that can reduce oxidative stress. Other effective nutrients include vitamin C, magnesium, Carotenoids, Flavonoids, (various bioflavonoids, such as red wine and green tea extracts). An adequate and proper balance of all of these nutrients appears to be the key for maximizing the reduction of oxidative stress.

Quite simply, the key to health is reducing oxidative stress.

GNLD Recommendations :-

Carotenoid Complex, Flavonoid Complex, and Cruciferous Plus... and Vitamin E and magnesium etc as mentioned above.

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