

James L. Holly, M.D.

Oxidative Stress - What Can I Do About It?

By: James L. Holly, MD

Do you have oxidative stress? (For an explanation of oxidative stress, see *The Examiner* January 20, 2005) Living in a modern, high-paced society, the probability is that you do. However, your body has the amazing ability to fight diseases and even delay, but not prevent, aging by protecting against oxidative- stress-produced, free-radical damage.

You might be overtaxing your system's capacity to handle all its challenges. Take this quiz to determine your risk level for oxidative stress and its effects.

- Do you have allergies?
- Do you often get colds or have sinus problems?
- Are you under a lot of stress at work and/or at home?
- Do your muscles or joints ache after even mild exertion?
- Have you ever been diagnosed for chronic fatigue syndrome?
- Does your diet consist of fast food and/or mostly processed food rather than fresh vegetables and fruits?
- Are you often exposed to automobile exhaust fumes?
- Do you smoke cigarettes or cigars or use tobacco products such as chewing tobacco?
- Do you live or work with someone who smokes in your presence?
- Do you take a multivitamin supplement less than once a day?

If you answered yes to two or more of these questions, your body may be experiencing oxidative stress, making you vulnerable to degenerative problems. Today, there are tests available to measure oxidative stress and there are “inflammatory” markers which can be tested to determine whether you are suffering from disease-producing oxidative stress. Ask your healthcare provider about these tests.

What Can I Do About Oxidative Stress?

The most important thing you can do is the least interesting. Most people want to take a pill, or a vitamin to deal with oxidative stress, and there is a place of vitamins, supplements and medications, but only after you have adjusted your lifestyle to avoid excessive free radical formation. Anyone who tells you that taking a pill is the place to start with dealing with oxidative stress is only trying to sell you a product. They may be more interested in their own financial health more than your physical health.

The most important steps you can take to decrease your oxidative stress are addressed by SETMA's **LESS Initiative**. (*The Examiner*, December 4, 2004 or www.jameslhollymd.com) Your Life Your Health for the details of the **LESS Initiative**). They are:

1. **Know your risk for developing Diabetes Mellitus** – every patient who visits SETMA has this risk calculated and discussed with them.
2. **Lose weight** – Abdominal obesity, the excess weight which is around our waist, produces many substances which are harmful and which increase oxidative stress. Every patient who visits SETMA is given a Weight Management Assessment which tells you whether your weight and the fat content of your body represent a health hazard.
3. **Exercise** – too much exercise or sudden bursts of exercise (the weekend-warrior types) actually increases oxidative stress, but regular, moderate exercise helps the body deal with oxidativestress. Every patient who visits SETMA is given an Exercise Prescription which encourages you to do moderate, health-promoting regular exercise.
4. **Stop smoking** – Oh, you don't smoke? Well, do you inhale? It is not enough to avoid smoking yourself, you must also be aware as to whether you are exposed to "second-hand," or environmental smoke, created by others. Second-hand smoke is just as harmful, if not more so, to your body as smoking yourself. Every patient who visits SETMA, who either smokes or who is exposed to the smoking of others, is given information about how to quit and/or the hazards of second-hand smoke.

Diabetes is one of the most common diseases which produce excessive oxidative stress in your body, and in its most common form, what we call Type II Diabetes, it is preventable. The most important steps to preventing Type II Diabetes are losing weight, exercising and stop smoking and/or inhaling the smoke of others.

What Else? Twelve Steps to Oxidative Health

Once you have take these four important steps – knowing your risk of diabetes, losing weight, exercising regularly and moderately and avoiding tobacco smoke – what else can you do to decrease the oxidative stress in your body? **First, get proper rest.** It has always been interesting to me as to why humans need sleep. I know we get tired and sleep helps restore our energy, but why? During sleep, many things happen to our bodies which are beyond this discussion, but a few are important to mention. One is that the body repairs itself. When you sleep is one of the times in which your body produces growth hormone which stimulates cells in your body to destroy potentially harmful cells. Many cancers are stopped before they develop by this mechanism. Cells which are abnormal, what we might call pre-cancerous or isolated and destroyed, preventing them from developing into malignancies, which are among the most damaging oxidative stresses to the human body. Another is that chemicals which enable us to think are regenerated. That is why we lose concentration when are fatigued and why we think best after a refreshing night's sleep. Rest and sleep are critical to the body's health.

Second, reduce your total calorie intake. The only scientifically proven anti-aging method is a sharply reduce calorie intake. Not only does this decrease your risk of diabetes through weight loss, but there are many other chemical and metabolic benefits to a diet which radically decreases the number of calories consumed each day. **Third, change the kinds of calories you eat.** Diets high in non-fibrous carbohydrates – bread, potatoes, particularly mashed potatoes, pasta, and rice – promote oxidative stress due to the substances produced by their metabolism.

White is not good

Here is one of the ways in which science supports sociology. All of us who grew up in the South with the racial prejudices which were, and which are still to some extent, present in our society, found it hard to get away from the implied concepts that white is good and black is bad. The misfit child was the black sheep of the family. The good guys wore white hats. We could go on. There seemed little we could do to get away from this implicit reinforcement of prejudice.

But in the foods we eat, we can. Dietary science declares, “the whiter the bread the sooner dead.” That means that the more processed the bread, and therefore the whiter, the less nutritious the bread is and the more harmful it is to our health. Bright, darkly colored fruits and vegetables are the healthiest foods. Processed, white foods – rice, potatoes, bread, and pasta – are unhealthy and should be eaten in only very small amounts and irregularly, if at all.

In dietary science, white is not good.

Fourth, change when you eat. Children particularly need a good, balanced and nutritious breakfast, but in reality all of us do. If you want to miss a meal, miss the noon or the evening meal, but not breakfast. The health benefits of a daily twelve hour fast – and that is what “break-fast” means – are well know, but it is also important to restart your metabolism each morning with balanced nutrients.

There are two keys here: one, start your day with eating; two, end your day with not eating. To properly defend you from illnesses, your body needs a reprieve from a nutrient load, particularly a nutrient load rich in non-fibrous carbohydrates and fats. Therefore, don't eat after 7:00 PM. Not only does night time snacking result in obesity but it denies your body the important daily fast which is healthy. Your last nutrient intake should be four hours before you plan to retire for the evening and your first should be within one hour of arising in the morning.

Fifth, decrease the amount of meat you eat. To benefit from this admonition, there is no requirement to become a vegetarian, but if zero meat is a vegetarian, and a ten is a meat and potatoes man, you should aim for a three or four. You can do this in two ways: one, have some meatless meals; two, drastically reduce the portions of meat you eat. For most Americans, this would mean eating less than one third the meat they currently eat. For most of us, the centerpiece of our meal is the meat dish. That should change. Meat should become a side-dish, not the main dish. Fresh fruits and vegetables should become the staples of our diet.

Sixth, decrease the amount and kinds of fats you eat. Animal fat is harmful to your body and increases oxidative stress. Barbecuing, smoking and blackening meat further increases the hazard of animal fat and protein. The Trans fats of processed foods increase oxidative stress. Everyone, particularly children, needs fat in their diet. But, we need good fats, those which are unsaturated or monosaturated, such as vegetable fats, almonds, fish, olive oil and so on.

Seventh, decrease the processed foods – boxed, cans, pre-prepared – foods which you eat. When you go to the grocery store follow my guide. My wife asks, “What do you want from the store?” My response never varies, “Nutritious, delicious and low calorie.” To achieve this, you will need to shop in the perimeter of the store, not down the aisles. Few, if any foods sold in cans or boxes qualify for this trilogy – nutritious, delicious and low calorie.

At SETMA, we give patients interested in maintaining or restoring their health, a document entitled, “Foods to remove from your pantry.” If our clinical nutritionists went through your pantry, she would probably recommend removing 90% of what is there. Radical? Maybe! Healthy? Absolutely! No one said that getting healthy and staying healthy is going to be easy; but it is beneficial.

Eight, eliminate all non-nutrient calories from your diet. As the movie dialogue said, “That sounds clever, what does it mean?” Alcohol is one of the most commonly consumed non-nutrient-containing beverages. It is high in calories but totally devoid of any beneficial nutrient and also produces tremendous oxidative stress in its metabolism. The best counsel concerning alcohol consumption is, “Don’t.” There are published benefits to modest intake of red wine but the potential health hazard of the alcohol outweigh any potential benefit, all of which can be obtained from other sources.

Carbonated drinks not only decrease your calcium absorption but also are probably the most commonly consumed non-nutrient-containing beverage. When shopping, every time you put a soft drink into your shopping cart, you are preparing for a disaster. A 16-ounce cold drink, non-diet, provides a huge glycemic load to the human body. (To read more about the glycemic load, see Your Life Your Health for July 17, 2003 at www.jameslhollymd.com) No meal should ever exceed a glycemic load of 4,000. Yet, one of the most common meals in America is a hamburger, fries and a coke. The glycemic load of a coke is 4,500. If the goal is not to exceed a glycemic load of 4,000 and we have a coke for our meal-time beverage, we have exceeded our glycemic-load target with our non-nutrient-containing beverage, before ever taking a bite of our fat-laden burger and fries. And, remember, even disguised by their golden yellow, those fries are by nature white, which is not good for your health.

Nine avoid foods which remain edible for a long period of time. If you have been grocery shopping recently, you are probably as staggered as I am about the choices which are available. There are sixteen different kinds of salt-enriched crackers. There are hundreds of kinds of cookies and snack foods.

Processing, packaging, distribution, displaying, purchasing and consumption of these foods can take months. Very few food products naturally remain edible for that long. Therefore,

processing has been utilized to increase the shelf life of foods which otherwise would not have lasted. That processing adds substances which have been so modified that they are harmful to our bodies.

In addition, the processing removes the “good stuff” and replaces it with nothing, with harmful substances or with less of the “good stuff” than was there to begin with. For instance, the whole wheat kernel has at least twenty-one beneficial nutrients. The processing of the wheat into flour to make it “pretty” and white, removes all of those nutrients. Bread companies put back twelve or so of those nutrients and call it “enriched” bread. Go figure.

Tenth, avoid foods high in salt. Salt is one of the cheapest and most common preservatives which increase the shelf life of foods. Salt is a substance to which most Americans are addicted. Ever seen someone add copious amounts of salt to foods which they have not yet tasted? Point made. Avoid pretzels, snack foods, potato chips, nuts, canned foods and other processed foods which are high in salt content. Don’t put a salt shaker on the dining table and don’t provide one if asked. If you decrease your salt intake drastically, you will not develop hypertension and you will improve your blood pressure if you have hypertension, particularly if you are African-American.

Eleventh, avoid foods with sugar added. The recent *Examiner* article on the dangers of fructose-enriched foods is a good case in point. Taste is acquired. The more salt and sugar you eat, the more you want. The less salt and sugar you eat, the less you want. And, you need very, very little, if any. The more sugar added to foods by processors or restaurants, the more they can sell low-nutrient, high-calorie foods for a profit.

Twelfth, change where you eat out. If your favorite restaurant will not prepare your food with olive oil instead of “lard,” then go somewhere else. If your favorite Chinese restaurant will not prepare your dishes without MSG, then don’t eat there. If your favorite restaurant, does not provide smoke-free dining – not non-smoking, but no smoke – then eat somewhere else.

This is a good start. The other means for decreasing your oxidative stress will have to wait until next week. This gives us all enough to work on for this week. Remember, it is your life and it is your health.