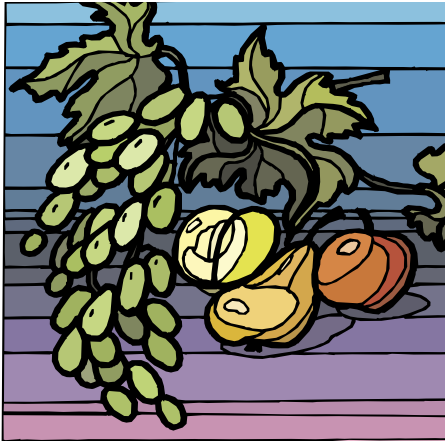


SUNSHINE SHARING

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Research Reports

- ◆ In the Netherlands, 5395 people over 55 years old were tracked for about 6 years. Those with diets providing a high intake of antioxidant vitamins C and E were associated with a lower risk of Alzheimer's disease. Vitamins and flavonoids were especially protective to smokers.

Dietary intake of antioxidants and risk of Alzheimer's disease, M. Engelhart, M. Geerlings, A. Ruitenberg, et. al., *JAMA*, 2002, 287: pp 3223-3229

- ◆ A study at the Johns Hopkins Medical Institution compared 83 people who ate 8-10 servings of fruits and vegetables per day to 40 others who ate fewer servings. The blood of those eating more vegetables had a higher oxidative capacity. Another study at Tufts University in Boston had similar results. Researchers believe that food compounds other than vitamins A (carotenoids), C, and E contribute a major portion of the increase in antioxidant capacity.

Amer. J. Clin. Nutr., 1998; 68: pp 1081-1098;
Circulation 98: 1998, p 2390

Free Radicals & Antioxidants

The Bad News

The problem is that almost everything we do and everything that happens to us produces chemical damage to our body. We are under a perpetual assault by the chemical equivalent of arsonists, snipers and terrorists. These disrupt the healthy structure of our tissues and the normal, chemical reactions that are required for life.

When you notice iron rusting, copper developing a green patina, or oils going rancid, then you know that oxygen free radicals have been at work. Our bodies also contain fatty oils and many other biochemicals, which are much more delicate than sheet metal.

Our own life processes produce free radicals. These are a normal part of energy production and use within every cell. Our livers and the immune systems have special cells (Kupfer's cells and macrophages), which dismantle incompletely digested food and foreign material such as bacteria by producing free radicals. If these reactive substances are not promptly neutralized, they will also damage nearby tissue. These are only two of many possible examples.

We are also assaulted by outside sources of free radicals. Radiation does much of its damage by creating free radicals. Smoking, pesticides, insecticides, preservatives, artificial colors and flavors, cleaning chemicals and even personal hygiene products create free radicals.

The Good News

Happily, we are also surrounded by abundant sources of antioxidant chemicals, which can quench the chain reactions of damage that can be caused by free radicals. Our best defense is to assure that our tissues are abundantly supplied with a wide range of antioxidant protectors.

One's body, given adequate nutrients and other resources, can manufacture its own supply of a wide range of antioxidants. Many, however, must be supplied by our diet. Fresh plant foods are especially rich in available antioxidants, enzymes, and other available nutrients.

But, do you live on your own organic produce farm? I certainly don't. Do you get most of your food packaged or prepared in grocery stores, restaurants and vending machines? If your answer is "yes," then first, spend more time in the produce section. Second, develop a nutritional supplement program that includes plenty of antioxidants.

Details about your options are just inside.

Sources of Antioxidant Nutrients

Vitamins

The main antioxidant vitamins are easy to remember. Just think "ACE:" vitamins A, C, and E. Our bodies need a mix of water soluble vitamins (the B vitamins and C) as well as fat soluble vitamins (vitamins A, D and E.). The supplement **alpha-lipoic acid** is special; it is soluble in both water and fat!

How important are these antioxidant vitamins? A 1993 study by Pracon, a pharmaceutical economic analysis company, estimated that if all Americans got optimal amounts of the ACE vitamins, the total costs for heart disease, and breast, lung and

stomach cancers could be reduced by \$8.7 billion dollars per year!

Vitamin A family includes the carotenoids. Beta-carotene is especially well-known because it is commercially available in large quantities. Research has shown that just one beta-carotene molecule can destroy 1,000 free radicals. Vitamin D is added to vitamin A supplements to help the body use the A more efficiently.

Lycopene gives red fruits and vegetables their color, tomatoes for example. It is twice as powerful an antioxidant as beta-carotene. Medical research centers such as Johns

Hopkins and Harvard are finding that lycopene can help prevent cancers of the prostate, pancreas and cervix. Women with the highest levels of lycopene may be 5 times less likely to develop precancerous cervix symptoms.

Vitamin C is a water soluble antioxidant that humans must obtain from their diet because they cannot make their own as some animals do. Most people realize that vitamin C helps the immune system to resist viral infections such as the cold and influenza. But did you know that vitamin C is absolutely vital for building collagen for strong and flexible connective tissue?

Vitamin E is a fat soluble antioxidant so it protects a different range of tissues than vitamin C. Vitamin E supports cell membranes and the fatty coverings of nerves. Natural vitamin E is found as a mixture of tocopherols. A special related form of vitamin E, called tocotrienol has been discovered to be especially good for circulatory problems.

Minerals

Many minerals are considered to be antioxidants, even though they do not have a direct free radical scavenging effect. This is because the minerals are used by the body for such things as making the enzymes, which are needed for making antioxidants. Selenium and **zinc** are good examples of this principal.

Minerals may help to "recycle" vitamins. This is why better vitamin E supplements often include selenium. Selenium works with vitamin E to keep tissues elastic and the heart and liver healthy.

Sulfur is also an important antioxidant mineral. Among many things, it is needed for a powerful antioxidant called glutathione. It is also required for energy production in each cell. [See the box: "*The Free Radical Theory of Aging*.] Sulfur is abundant in sulfur-bearing amino

The Free Radical Theory of Aging

Dr. Denham Harmon started working with free radical chemistry in the early 1940s and conceived his revolutionary idea in 1954 while working on the problems of radiation sickness. He went on to develop the *Free Radical Theory of Aging* during 40 years of research. Although much of his work was

ahead of its time, he is now respected and honored by scientists specializing in the causes and treatments of aging. Richard Passwater, Ph.D. calls his theory "The biggest advance since the discovery of germs."

Dr. Harmon's idea is that free radicals seriously and continuously harm the body, causing most of the debilitating diseases usually associated with aging. These degenerative conditions include arthritis, heart disease, and cancer. In fact, upwards of 50 to 80 diseases have been associated with free radicals.

Aging is especially associated with the damage done to mitochondria, the "life energy factories" within every cell. This damage not only affects average life expectancy but maximum life span! The mitochondria are where oxygen is used to fuel the chemical reactions for energy metabolism. Thus, mitochondria are especially vulnerable to damage when antioxidants are not adequately available. And mitochondria must work at peak efficiency for cells to function with optimum vitality!

The process of energy production is a complex cycle that involves a stunning variety of nutrients, enzymes and coenzymes (vitamins). When any of these are in limited supply, the entire process becomes less efficient.



acids in protein foods. However, it tends to have an unpleasant odor, and many people avoid these vital high-sulfur foods. The two sulfur-bearing amino acids are l-methionine (which **MUST** be obtained from the diet) and l-cysteine. Related supplements include **MSM** and **SAM-e**.

Mega-Chel is a powerful program for keeping the circulatory system flowing freely. One of the secrets to this formula is the high level of antioxidants it provides. Ask for special instructions for following a multi-month Mega-Chel program.



Herbs and Phytochemicals

You can't stop with vitamins and minerals. Phyto- (plant) chemicals often have their own unique antioxidant properties.

Products like **Berry Healthy**, a powdered drink mix, contain a high concentration of a wide range of antioxidants from fruit.

Alpha-lipoic acid is both water and fat soluble, making it a "universal" antioxidant. Clinical studies have even used this nutrient to reverse peripheral neuropathy, the painful nerve damage experienced by many diabetics.

Rose hips are a rich source of vitamin C and the bioflavonoids.

Turmeric contains the powerful

antioxidant curcumin. Many herbs are rich in quercetin. These are also used for their anti-inflammatory properties.

Green Tea contains protective substances called polyphenols. Test tube and animal studies of green tea extract show that it can inhibit the spread of many different types of cancer cells. So far in human studies, it is recognized as a significant cancer preventive. In any event, green tea is a very desirable antioxidant for those who can tolerate its caffeine.

Milk Thistle contains three main active plant chemicals, which together are called "silymarin." Their effect is to protect the liver from oxidative damage and, when damaged, help it recover effectively. Silymarin increases the liver's supply of a protective antioxidant and detoxification agent, glutathione.

The list of antioxidant herbs goes on and on. Some of the best of the antioxidant herbs include: bilberry, blue-green algae, cat's claw, capsi-cum, garlic, ginkgo biloba, ginseng, hawthorn, licorice root, St. John's wort, and turmeric.

Families of Nutrients

Vitamins actually occur in families of related molecules with similar properties. When we eat whole, natural foods, we receive the synergistic benefits of this variety.

Sometimes you will find that there are both plant-forms of a vitamin and animal-forms (i.e. nicotinic acid vs. niacinamide). Also, the body will often convert a vitamin into another form before actually using it. The details can get confusing. A good supplement company will choose from the options based on health benefits more than from cost.

The same chemicals found in foods can be used as drugs. The difference is that foods contain very complex mixtures of molecules so that the body is not "overwhelmed" by the effects (and side-effects) of a large quantity of a single chemical.

Vitamin A

Vitamin A is related to the carotene family of over 600 carotenoids. Beta-carotene is the best-known; it is manufactured in large quantities. In the body, each molecule of beta-carotene can be broken into two molecules of vitamin A as needed. **Mixed Carotenoids** includes such as alpha-carotene, beta-carotene, lycopene, lutein, and zeaxanthine.

Vitamin C

When vitamin C was first discovered, the material was actually a mix of bioflavonoids. Pure vitamin C is now known as ascorbic acid. Bioflavonoids can enhance the body's utilization of vitamin C. **Vitamin C Ascorbates** are made by binding C to amino acids. This makes the product non-acidic and gentler on sensitive stomachs.

Vitamin E

Natural vitamin E contains mostly mixed tocopherols. Tocotrienols are also part of the Vitamin E family. They are remarkably potent and can enhance the benefits of tocopherols alone.

Health Problems Antioxidants May Prevent or Delay

Aging

Arthritis

Allergies

Alzheimer's Disease

Autoimmune Problems

Cardiovascular Disease

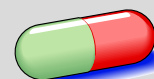
Heart Disease

Cancer

Cataracts

Diabetes

Senile Dementia



Featured Products and Product Features

Antioxidant Arsenal contains some of the most well-known antioxidants, packaged in 28 convenient packets, each containing 5 tablets and 1 capsule. This is a 14- or 28-day supply of antioxidants including: beta-carotene, Vitamin C, vitamin E with Selenium, Zinc and Grapine.

Grapine® is part of Antioxidant Arsenal but is also available separately. Grapine® combines the antioxidant oligomeric proanthocyanadins* (OPCs) from both grape seed and pine bark. (You sometimes see the name "Pycnogenol®," which is a trade mark for Masquelier's pine bark OPCs, which NSP uses in Grapine.) These protective plant chemicals are 50 times more powerful than Vitamin E and can cross the blood-brain barrier to quench free radicals in vital brain tissues.

Grapine® with Syner-Pro Protectors adds vitamin C in a blend of antioxidants from food sources including broccoli, cabbage, watercress, Chinese cabbage, turmeric, rosemary, carrot, tomato and citrus bioflavonoids.

Super Antioxidant is a combination of some of the newly-researched plant-source protective nutrients. It contains tocotrienols, lycopene and alpha-lipoic acid in a base of rose hips, milk thistle, and

turmeric. This combination may be used as a complement to Antioxidant Arsenal or on its own.

Don't forget the children! **Herbasaur's Chewable Antioxidants with Grapine** is especially designed for growing and active bodies. Besides the "normal" excess of free radicals in our modern environment, physical activity and immune defense call for additional support.

Here are some other products that contain antioxidants.

Vitamin A&D 10,000/400 IU

Beta-Carotene

Vitamin C, 1000 mg T/R

Vitamin C Ascorbates

Vitamin C with Bioflavonoids

Vitamin E, with Selenium

Super Supplemental

Multiple Vitamins & Minerals

Mega-Chel

Green Tea Extract

Milk Thistle Formula

Rose Hips

Berry Healthy Power

** Yes, that's a real mouth-full to say. But as some of the most powerful natural antioxidants, maybe they've earned their big name.*

Sources

For more information about antioxidants and antioxidant supplements, talk to the person who gave you this newsletter. His or her name should appear below. You can also consult some of the sources listed below for additional information.

Antioxidants, *Natures Field*, Vol. 17, No. 1, Jan/Feb 2001, Tree of Light Institute

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Passwater, Richard, Ph.D., *The Free-radical Theory of Aging: An Interview with Dr. Denham Harmon*, *Whole Foods Magazine*, WFC, Inc. 1995

Important Notice

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