

## Special Interest Articles:

- Nutrition and Macular Degeneration
- Name That Food
- Is it a Good Supplement?
- Natural Health Care and Eye Health
- Nutrition and the Eyes
- Carnitine and Cognition
- Flavonols and Colorectal Cancer

Name that food:  
Goldfish-shaped crackers

## Anger Slows Healing

Research published in the journal *Brain, Behaviour, Immunity* (Feb, 2008; e published ahead of print), looked at wound healing in 98 subjects and its relationship to anger. The subjects took a battery of psychological tests. They were then given minor burns on the forearm and monitored for eight days. None of the volunteers smoked, took prescription drugs or excessively drank caffeinated drinks. None of the volunteers were extremely overweight or underweight.

People who had trouble controlling their anger healed more slowly than those who did not.

Those who got angry and expressed it in outbursts of rage and those who internalized their anger actually did not have this reduction in healing time. People who become angry, try to control it, but are unsuccessful, experience longer healing times. This third group produced higher levels of cortisol.

There is a connection between anger and the adrenal hormone, cortisol. Cortisol suppresses certain chemicals necessary for healing. The cortisol connection may mean that stress, in general, can have an effect on healing.

## Mediterranean Diet Fights Diabetes

A study published in the *British Medical Journal* (2008;336:1348-1351 (14 June)) found that adherence to the Mediterranean Diet can protect from the development of diabetes. The diet is high in vegetables, and vegetable oil, but low in trans fatty acids and saturated fats. The diet contains a lot of virgin olive oil, which is high in monounsaturated fatty acids. The ratio of saturated fatty acids to monosaturated fatty acids is low, even though the

diet is relatively high in fat.

The subjects of the study were 13,000 former college students, average age 38 and no history of diabetes. For a period of four years, the researchers kept track of the subjects' diets and general health. Those who strictly kept to the Mediterranean diet had a reduced chance of developing diabetes. The protective effect of the diet even extended to people with risk factors like family history of diabetes and smoking.

## Nutrition and Macular Degeneration

*A natural treatment of macular degeneration was recently presented in the Journal of Orthomolecular Medicine (1998;13(4):211-214)... Over a two-year period, the subjects did experience improvement in vision.*

The macula is the central and most vital part of the retina. Macular degeneration is a condition where this area degenerates, resulting in diminishing and even loss of sight. The condition tends to run in families. Macular degeneration can slowly or suddenly produce loss of vision. It is painless.

There are two forms of macular degeneration, wet and dry. In dry macular degeneration (also called atrophic), a pigment is deposited in the macula; there is no indication of scarring, bleeding or other damage. In wet macular degeneration, an exudate is formed (leaked material) and forms a mound which is often surrounded by small hemorrhages. Eventually, the mound contracts and leaves a scar.

A natural treatment of macular degeneration was recently presented in the *Journal of Orthomolecular Medicine* (1998;13(4):211-214). There were 46 subjects, each with dry macular degeneration. They were given the following nutrients twice daily:

- 400 IU natural vitamin E
- 40,000 IU beta carotene
- 1500 mg. vitamin C
- 250 mg. citrus bioflavonoid complex
- 100 mg. quercetin
- 10 mg. bilberry extract
- 100 mg. rutin
- 25 mg. zinc
- 100 mcg. selenium
- 200 mg. taurine
- 200 mg. NAC (N-acetylcysteine)
- 10 mg. glutathione
- 50 mg. riboflavin

Several times each week, the subjects also received micro-ampere electricity applied to the closed eyelids. Their vision was checked after each electrical treatment, and it improved after each treatment. Over a two-year period, the subjects did experience improvement in vision. Another group receiving the electric stimulation less frequently did not enjoy this improvement.

### Name That Food

This is a little exercise in label reading. Look at the information taken from the label of a commonly consumed food and see if you can guess what it is:

UNBLEACHED ENRICHED WHITE FLOUR (FLOUR, NIACIN, REDUCED IRON, THIAMIN MONONITRATE, RIBOFLAVIN, FOLIC ACID), CHEDDAR CHEESE[(PASTEURIZED

CULTURED MILK, SALT, ENZYMES), ANNATO], VEGETABLE OILS (SUNFLOWER, CANOLA AND/OR SOYBEAN), CONTAINS 2% OR LESS OF: SALT, YEAST, SUGAR, SPICES, AUTOLYZED YEAST, LEVENING (MONOCALCIUM PHOSPHATE, AMMONIUM BICARBONATE, BAKING SODA) AND ONION POWDER (ANSWER ON PAGE 1)

## Is it a Good Supplement?

While everyone loves a bargain, there are some problems with shopping for supplements using only price as a guideline. The difference in quality between different brands of supplements is often considerable. The supplement quality issue alone makes it important that you get professional help with your nutritional supplementation.

Herbs, vitamins and minerals are meant to be utilized by the body, to help with physiology and biochemistry. Think of wine or ice cream. The only physiologic concern with these products is taste, but what a difference between the quality of a cheap product and a good one. Compare the taste of a premium ice cream to the cheap store brand. Compare inexpensive wine to Lafite Rothschild. It should be obvious that the difference between the quality of vitamins and herbs should be at least as great.

Quality and bioavailability are important. Bioavailability has to do with how well the supplement is utilized by the body. There is gasoline in coal, you just can't run your car on it. Similarly, there are ingredients listed on a supplement's label that are as useless to your body as coal is to your automobile.

What about the quality of components? Take calcium, for example. Oyster shell has calcium, but the body can't use it (just like your car can't use the gasoline in coal). Calcium carbonate is cheap, but is not well absorbed. Calcium citrate is much more expensive than the oyster shell or the carbonate. A high quality

supplement will use the citrate, a poor one will use oyster shell. There are similar quality issues for just about every vitamin and herb.

Many companies don't actually produce their own vitamins, and they don't test what they buy. Without testing, you can be lied to about the content of the product. Second, by the time the product changes hands several times, anywhere along the line someone can substitute cheaper or even phony ingredients and not be held accountable. The product can be contaminated when it changes hands. Sometimes the label claims are fraudulent.

Are the products tested for quality or for contaminants? Where did the materials come from? Most of the botanicals purchased in the US come from the Far East. There are manufacturing practices in some Third World countries that would surprise many Americans.

How is the tablet or capsule made? Bioavailability can be affected by something as simple as how the tablet is made. Many manufacturers use inert ingredients that interfere with the absorption of the nutrients. Even capsules can contain inert ingredients that interfere with absorption.

There's a lot to know when buying supplements and herbs. When you learn about product quality, they will realize that self-treatment with bargain basement supplements is not a good idea.

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## Natural Health Care and Eye Health

Carotenoids are plant pigments that have antioxidant activity. According to *Investigative Ophthalmology & Visual Science* (1988 Jun;29(6):850-5), the dominant carotenoids in the whole retina are lutein and zeaxanthin. Zeaxanthin is concentrated in the macular region, whereas lutein is dispersed throughout the entire retina. A recent article appearing in *Nutrition Journal* (2003, Dec. 11, 2:20) speculates that the intake of these carotenoids may help prevent macular degeneration. Low levels of these carotenoids seem to be related to a higher risk of macular degeneration. Studies are inconclusive. *The Medical Journal of Australia* (2006; 184 (9): 455-458) cites a large study that investigated the use of antioxidants (high doses of vitamin C, 500 mg; vitamin E, 400 IU;  $\beta$ -carotene, 15 mg) and zinc, 80 mg, with progression of macular degeneration. They followed up 3640 participants for an average of 6.3 years. They showed that the use of antioxidants and/or zinc in the 2577 participants with a high-risk of age related macular degeneration (AMD) resulted in a reduced risk of disease progression. The results were not as conclusive in the lower-risk group.

Carotenoids may improve vision in general, even in healthy subjects. Researchers gave 40 subjects 12 mg of lutein and zeaxanthin daily for a period of six months in study that appeared in *Optometry and Vision*

*Science* (2008 Feb; 85(2):82-8). The subjects had improved visual performance under high-glare conditions. The researchers believed that the carotenoids increased the macular pigment optical density, thus improving vision. This supports other research that showed supplementation with lutein and zeaxanthin improved vision under low-light conditions (*Ophthalmic and Physiological Optics*; 2006 Jul;26(4):362-71).

AMD is a disease where the retina degenerates, destroying central vision, leaving only peripheral vision. It is the leading cause of blindness in people over 55 years of age, affecting between 25 and 30 million people worldwide.

In the journal *Ophthalmology* (February 2008, Volume 115, Issue 2, Pages 324-333) found that antioxidants may do more than merely prevent AMD. The 27 subjects were given either a placebo or antioxidant nutrients (vitamins A, E and zinc), and bioflavonoids (plant antioxidants, including lutein, zeaxanthin, and astaxanthin). Although it was a small study, the researchers noted improvements in the vision of the group given the supplements.

## Nutrition and the Eyes

Researchers at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University in Boston have found that a diet that is high in antioxidant-rich foods (i.e. fruits and vegetables) may help to prevent cataracts. Cataracts are the results of changes in the lens of the eye creating a cloudiness that obscures sight.

Researchers looked at the diets of nearly 500 women between the ages of 53 and 73 for a period of 12 and 15 years. The

women selected did not have cataracts. Women who consumed a lot of antioxidant nutrients, like vitamins C and E, riboflavin, folate, beta carotene and lutein/zeaxanthin had less cloudiness in certain lens areas than did those with lower intakes of antioxidant nutrients. Results are published in the August 2003 issue of *Agricultural Research* magazine.

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## Carnitine and Cognition in the Elderly

According to research appearing in the *American Journal of Clinical Nutrition* (December 2007; Vol 86 pp 1738-44) supplementation with L-carnitine improved cognition, as well as muscle mass in a group of subjects over the age of 100. The subjects of the study were 66 men and women averaging 101 years. They were randomly assigned to receive either a placebo or two grams of L-carnitine for six months.

At the end of the study, the group that received the L-carnitine had an average loss of 1.6 kilograms of fat, compared to a .6 kilogram gain of fat for the placebo group. Muscle mass also

increased in the group receiving the carnitine with an average gain of 3 kilograms more than the placebo group. The Mini-Mental State Examination was used to measure cognitive performance; the group receiving the supplement had an average increase of 4.1 points at the end of the study. The placebo group only had a 0.6 point gain. The group receiving the carnitine also experienced less fatigue after physical activity.

## Flavonols and Colorectal Cancer

Regimen is superior to medicine.—  
*Voltaire*

Flavonoids are a class of water-soluble plant pigments found in fruits, vegetables, and certain beverages that have antioxidant effects. Antioxidants are compounds that protect cells against the damaging effects of reactive chemicals known as free radicals. Free radicals can cause oxidative stress, leading to cellular damage. Flavonols are a class of flavonoids. They are found in apples, onions, beans and tea.

Oxidative stress has been linked to cancer, aging, atherosclerosis, ischemic injury, inflammation and neurodegenerative diseases (Parkinson's and Alzheimer's). Flavonoids may help provide protection against these diseases by contributing to the total antioxidant defense system of the human body. Studies have shown that flavonoid intake is inversely related to mortality from coronary heart disease and to the incidence of heart attacks.

Research appearing in *Cancer Epidemiology Biomarkers & Prevention* (2008

Jun;17(6):1344-53) found that consumption of flavonols can inhibit the regrowth of precancerous polyps in the lower GI tract. The study involved 2,005 subjects averaging 61 years of age and having precancerous colorectal polyps. They were randomly divided into two groups. The treatment group consisted of 958 participants who were placed on a diet that was low in fat, high in fiber, and high in fruit and vegetable intake. The control group included the other 947 subjects and they received no dietary intervention.

The researchers looked at the subjects' consumption of 29 different flavonols and the recurrence of the colorectal adenomas. The subjects with the highest consumption of flavonols had the lowest recurrence of adenoma—76% lower risk than the group with the lowest consumption of flavonols.

