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The Better Health News2

Special Interest Articles:

- Osteoporosis and vitamin K
- CoQ10 and blood vessel lining
- Dysmenorrhea and omega-3 fatty acids
- Testosterone
- CoQ10 and asthma
- Vitamin K and osteoporosis

Macular Degeneration and Antioxidants

AMD is an acronym for "Age Related Macular Degeneration". It 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.

Magnesium and PMS

A study in the *Annals of Clinical Biochemistry* (1986;23:667-670) found that the level of magnesium found in the red blood cells of PMS sufferers was significantly lower than those of healthy controls. Other studies have shown the value of magnesium supplementation for PMS sufferers. Subjects of another study, appearing in *Clinical Drug Investigation* (2007; 27(1): 51-8), were supplemented with magnesium (250 mg/day) after being observed for three months without supplementation. The women were given the magnesium for only part of their cycle (from 20 days after the start of the last cycle until the beginning of the next cycle). The study lasted for three cycles. It found a 33.5% reduction in symptoms according to the Moos' Modified Menstrual Distress Questionnaire. An article appearing in Family Practice News (March 1, 1996;33) cites two small studies that show magnesium supplementation to be useful for patients who have migraine headache associated with their cycles.

Magnesium is the cofactor for over 300 chemical reactions in the body. Deficiency can cause a variety of health problems. According to an article appearing in *Pediatric Asthma, Allergy and Immunology*, (1993;7(4):211-215), symptoms of magnesium deficiency can include PMS and headaches.

Osteoporosis and Vitamin K

... there is a tendency for low concentration of circulating vitamin K in patients with bone fractures and that vitamin K supplementation decreases bone loss and calcium excretion.

A review of published studies, appearing in the *American Journal of Health-System Pharmacy* (2005; 62(15): 1574-81) states that vitamin K may help prevent osteoporosis as well as arterial calcification. Vitamin K is important to proteins that are found in bone. A commercially prepared form of vitamin K1 and vitamin K2 may be useful for preventing and treating osteoporosis. The article points out that several studies, both animal and human, have shown that vitamin K can help to increase bone mass and reduce bone loss. Studies show that the combination of vitamin K and vitamin D can significantly reduce bone loss.

Another study, appearing in the *Journal of Nutrition* (2006; 136(5): 1323-8), looked at the Japanese Population-Based Osteoporosis Study (JPOS). The study was a 3-year cohort study; the subjects were 944 healthy women aged 20-79 years. Bone density was measured at the beginning and after three years. The women filled out food frequency questionnaires and the intake of natto (made from fermented soybeans, and high in vitamin K) and other soy products. In postmenopausal women, the intake of 160 grams of natto per week was associated lower bone loss.

In the *Journal of Nutrition* (1995;125:1812-1821), Binkley, NC and Sultie, JW state that there is a tendency for low concentration of circulating vitamin K in patients with bone fractures and that vitamin K supplementation decreases bone loss and calcium excretion. The article states that this is an area that further research is needed.

CoQ10 and the Lining of Your Blood Vessels

The endothelium is the thin layer of cells that lines the interior surface of blood vessels. It forms an interface between circulating blood in the lumen and the rest of the vessel wall. Endothelial cells line the entire circulatory system, from the heart to the smallest capillary. These cells reduce turbulence of the flow of blood, allowing the fluid to be pumped farther. Endothelial cells protect against atherosclerosis by helping to prevent blood clotting, because they contain heparan sulfate. Heparan sulfate acts as an anticoagulant.

The health of the endothelial cells is an important factor in preventing atherosclerosis. A meta-analysis that appeared in the journal Atherosclerosis (epublished ahead of print Oct 25, 2011) included MEDLINE, Cochrane Library, Scopus, and EMBASE to identify studies prior to and including July 1, 2011 that looked at randomized, controlled studies dealing with CoQ10 supplementation and endothelial function. The analysis found that CoQ10 supplementation significantly improved endothelial function.

Dysmenorrhea and Omega-3 Fatty Acids

Dysmenorrhea is severe pain associated with the menstrual cycle, which interferes with daily activities. Dysmenorrhea is considered to be primary when there is no other pathology affecting the reproductive system. It is considered secondary if it is due to pathology, like endometriosis. The pain in primary dysmeorrhea is believed to be caused by the uterus contracting and from hypoxia in the area. Pain is usually perceived as cramps, but may be a dull, constant ache. Symptoms usually begin shortly before or during menses (bleeding), and may include nausea, diarrhea, frequent urination, depression or mood swings, or breast tenderness. There are some natural approaches that are helpful to women who suffer from PMS or dysmenorrhea.

A double-blind, crossover study that appeared in the *International Journal of Gynecology and Obstetrics* (Epublished ahead of print, Jan 17, 2012), looked at 95 female subjects between the ages of 18 and 22, all with primary dysmenorrhea. They were divided into two groups. One group was given an omega-3 fatty acid supplement for three months, and after a washout period, was given a placebo for another three months. The second group was given the placebo for the first three months and after washout, an omega-3 supplement for the second three months. The women were allowed to take 400 mg of ibuprofen for relief of severe menstrual pain. Women taking omega-3 fatty acids required less ibuprofen than those who were taking the placebo.

A cross-over study, appearing in the *Eastern Mediterranean Health Journal* (2010; 16(4): 408-13) looked at 36 women with dysmenorrhea (age 18 - 22). The subjects were randomly given either a fish oil supplement (550 mg EPA and 205 mg DHA) or a placebo each day for three months. After three months, the roles of the subjects were reversed, with the original placebo group receiving the supplement and the supplemented group receiving the placebo.

The severity of symptoms were significantly reduced in the group receiving the fish oil. Those supplemented also had less back pain, less abdominal pain and used analgesics less than the placebo group. The results suggest that fish oil supplementation may be beneficial for women with dysmenorrhea.

It is important to make sure that any omega-3 (fish oil) supplements are of high quality. Cheap products may be rancid--creating an issue with free radicals. Also, fish oil can be high in mercury and dioxin. A quality company will test for contaminants and test the quality of the product it sells. Call our office for recommendations.

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Testosterone

In men, testosterone levels decline around the age of 30 and by age 80 may be down to 20% of someone in their 20s. Men with low testosterone tend to have less stamina, reduced muscle mass and reduced libido. They can also have cognitive problems as well as depression and anxiety. The thing you really notice in men with low testosterone levels is a lack of initiative—they fit the stay-at-home, couch potato stereotype. They may say things like, "I used to like to work on the car (go on a hike, go dancing, work around the yard, etc.), but I really don't feel like doing that anymore."

Low testosterone can lead to more serious health problems. It is linked to obesity (and increased abdominal fat), diabetes and heart disease. In the journal, *Circulation* (2007;116:2694-2701), a study examined the prospective relationship between endogenous testosterone concentrations and mortality due to all causes, cardiovascular disease, and cancer in a nested case-control study based on 11, 606 men aged 40 to 79 years. The researchers concluded that endogenous testosterone concentrations are inversely related to mortality due to cardiovascular disease and all causes. Low testosterone may be a predictive marker for those at high risk of cardiovascular disease. Other research *(Circulation* 1999;100:1690-1696) showed that short-term intracoronary administration of testosterone, at physiological concentrations, induces coronary artery dilatation and increases coronary blood flow in men with established coronary artery disease.

The word endothelium refers to cells that line an organ or blood vessel. The health of the endothelium of blood vessels is pertinent to heart disease. If it is easily damaged, it sets the stage for plaquing and coronary artery disease. Research published in *Hypertension Research* (2007 Nov 30(11):1029-34) looked at 187 men averaging 47 years of age and at risk for heart disease. The researchers correlated the elasticity of the blood vessels to the testosterone levels in the men and found that low levels of testosterone were associated with poor endothelial function.

Women can have low testosterone as well. Levels decline between the ages of 20 and 40. An article appearing in the journal, *Clinical Geriatric Medicine* (2003;19:605-616) reviews the changes a woman goes through when testosterone levels decrease. When a woman receives estrogen for hormone replacement therapy after menopause, there is an increase in sex hormone-binding globulin. The sex hormone-binding globulin binds to testosterone, further decreasing levels. Low testosterone is linked to a decrease in libido, as well as a decrease in muscle mass, fatigue, irritability, sleep disturbances, poor memory and cognition, headaches, and even depression.

CoQ10 and Asthma

The relationship between supplementation with a combination of CoQ10, vitamin C and alpha tocopherol and asthma symptoms was examined in an open, crossover, randomized study that was published in *Biofactors* (2005; 25(1-4): 235-40). The subjects of the study were 41 patients, between the ages of 25 and 50, with bronchial asthma. For the first four months of the study, one group received supplementation with antioxidants (vitamins E and C) and CoQ10, as well at their standard asthmatic therapy. The second group received standard asthmatic therapy alone. During the second four months of the study, the therapies were reversed for the two groups. The control group received the supplements and the original supplement group received only standard asthma therapy.

Those patients who were dependent on corticosteroids had low levels of CoQ10 in their plasma; this confirms earlier research. Taking antioxidants and CoQ10 reduced the need for corticosteroids in the subjects. The researchers concluded that supplementation with CoQ10 and antioxidants may be beneficial to patients with asthma.

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Heart Surgery and CoQ10

Bypass surgery produces oxidative stress, so it stands to reason that supplementing with antioxidants may improve surgical outcomes. Taking CoQ10 may be beneficial to coronary bypass patients, according to research appearing in the *Journal of Cardiothoracic and Vascular Anesthesia* (2008 Dec;22(6):832-9). The subjects of the study were scheduled for CABG surgery. The 30 patients were randomly assigned to receive either a placebo or between 150 -180 mg of CoQ10 per day for seven to ten days prior to the surgery. The group receiving the supplement has shorter hospital stays, fewer reperfusion arrhythmias, less need for blood product (and less mediastinal drainage) and less myocardial dysfunction than the control group.

Other research appearing in the *Journal of Thoracic and Cardiovascular Surgery* (January 2005;129(1):25-32) 62 coronary bypass surgery patients received 300 mg/day of CoQ10 for two weeks before surgery. Another group of 59 subjects received a placebo. In the group receiving the supplement, mitochondrial respiration was more efficient and mitochondrial tissue from the supplement group recovered from hypoxia more quickly than it did for the control group. In short, CoQ10 protected from oxidative stress.

Black Cohosh

" The most beautiful thing we can experience is the mysterious. It is the source of all true art and science."

Einstein

There is some research that supports the safety and efficacy of using black cohosh (Cimicifuga racemosa) extract to relieve menopausal symptoms like hot flashes and night sweats. The substance has been used in Germany for the past 50 years for menopausal symptoms, and even for menstrual symptoms. A 12-week long, double-blind, randomized, multi-center study involving 304 women with menopausal symptoms appeared in the journal *Obstetrics and Gynecology* (2005; 105(5 Pt 1): 1074-83). Subjects were given 40 mg of black cohosh extract (standardized 5 mg isopropanolic extract) each day.

According to scores on the Menopause Rating Scale, the group receiving the standardized black cohosh extract fared much better than the placebo group. The extract seemed especially effective in treating hot flashes. There were no adverse effects to the supplementation.

Research appearing in the *Journal of Women's Health* (1998;7(5):525-529) compared black cohosh extract to conjugated estrogen as well as placebo. The group receiving the black cohosh had a notable increase in the proliferation of vaginal epithelium—even outperforming the conjugated estrogen. The group receiving the black cohosh also had improved scores in the Menopausal Index and the Hamilton Anxiety Scale score. (Black cohosh has been used to reduce genital pain.)

A combination of black cohosh and St. John's Wort was used in a randomized, double-blind placebo controlled study, involving 301 women with depression, as well as menopausal symptoms. The study appeared in *Obstetrics and Gynecology* (2006; 107(2 Part 1): 247-55). In this Utilizing the Menopause Rating Scale, there was a 50% reduction of symptoms in the treatment group, compared to just under 20% in the placebo group. The treatment group had a 41.8% reduction in the Hamilton Depression Rating Scale score compared to 12.7% in the placebo group.