

Special Interest Articles:

- CHEMOTHERAPY AND NUTRITIONAL SUPPORT
- HEART FAILURE
- MACULAR DEGENERATION
- SUGAR, INSULIN AND YOUR HEART
- CAROTENOIDS AND EYE HEALTH
- COQ10 AND HEART SURGERY
- VITAMIN D AND MS

Anti-Depressant Drugs & Violence

Selective serotonin reuptake inhibitors, also known as SSRIs, are antidepressant drugs. Prozac, which was released in this country in 1987, was the first medication of this type released in the US. We now have several drugs available which appear to work in this manner. An article appearing in the online journal PLoS Med (Sept, 2006) looked at the connection between SSRIs and aggression.

One drug, paroxetine, was tested and it was found that 60 of 9,219 patients (0.65%)

treated with paroxetine had what was termed a "hostile" event, compared with 20 of 6,455 (0.31%) treated with placebo, for an odds ratio of 2.10 for a hostile event with paroxetine. The authors of the article looked at studies and concluded that there may be a link between SSRIs and violent behavior, and that physicians need to be aware of this possibility. The authors do concede that the possibility of violent behavior as the result of these drugs is rare. But further research may be a good idea.

Huperzia Serrata

Huperzia serrata is a species of club moss containing a biologically active compound known as Huperzine A (HupA). HupA inhibits acetylcholinesterase (AChE), which breaks down the neurotransmitter acetylcholine. Acetylcholine is important for learning, memory and cognition. One possible cause of cognitive decline and memory impairment is reduction in acetylcholine. Since HupA effectively increases the availability of acetylcholine (by interfering with its breakdown), it may be useful for

the treatment memory and cognition issues and for treatment of neurodegenerative diseases. One study appearing in *J Neural Transm* (2009, 116:457-465) enrolled over two hundred patients meeting the criteria for Alzheimer's Disease. The patients who were given HupA showed significant improvements in cognitive function, such as orientation, attention and memory. In addition, non-cognitive evaluations, such as mood and behavior, improved after both 6 and 12 weeks of administration.

Chemotherapy and Nutritional Support

The supplement also seemed to reduce the incidence of severe acute mucositis (painful inflammation and ulceration of the mucous membranes lining the digestive tract).

Research appearing in *Supportive Care in Cancer* (Epublished ahead of print March 28, 2012) looked at supplementation and its effect on inflammation in patients receiving chemotherapy. The subjects of the study were 31 patients with stage III or IV squamous cell carcinoma in the head or neck. Supplementation (containing amino acids, omega-3 fatty acids, RNA, vitamins and antioxidants, called Oral Impact®) was given during five days before each cycle of chemotherapy. Biological samples were collected at baseline, after five days of oral

supplementation and before the last cycle of chemotherapy. Acute phase proteins levels, proteomic cytokines determination and urinary isoprostanes levels were used as inflammatory and oxidative stress biomarkers. Toxicities were followed up during radiochemotherapy. After five days of supplementation, there was a decrease in inflammation. The supplement also seemed to reduce the incidence of severe acute mucositis (painful inflammation and ulceration of the mucous membranes lining the digestive tract).

Heart Failure

Heart failure exists when the heart cannot pump enough blood to meet the body's needs. It develops over time as the heart's ability to pump grows weaker. In some cases the heart cannot fill with enough blood; in other cases the heart lacks the force to pump blood to the rest of the body. It is a very common condition, with 4.8 million cases in the United States, with an estimated 400,000 new cases being reported each year (according to the National Heart, Lung and Blood Institute)

Heart failure can affect both sides of the heart, or affect the right side only. Right-sided heart failure occurs when the heart is unable to pump enough blood to the lungs to oxygenate the blood. It may cause fluid accumulate in the lower extremity, the liver, the abdomen or in the veins of the neck. Left sided heart failure occurs when the heart cannot pump enough oxygen-rich blood to the rest of the body. Patients with heart failure that involves both sides of the heart often experience fatigue and shortness of breath.

Causes of heart failure include diabetes, high blood pressure and coronary artery disease. There may be an additional cause--prescription medication, especially the drugs we use to lower cholesterol and the drugs we use to treat heart failure.

Cholesterol medication works by inhibiting the enzyme methylglutaryl coenzyme A (HMG-CoA) reductase. They prevent the production of mevalonate from HMG-CoA. The body converts mevalonate to cholesterol and a variety of other products. One of the things that mevalonate produces is Coenzyme Q10; so these drugs ultimately prevent the production of coenzyme Q10. Patients taking these drugs commonly experience exercise intolerance, myalgia (muscle pain) and myoglobinuria. Studies show that these drugs have the potential to cause myopathies (problems with muscle) and rhabdomyolysis (destruction of muscle with renal failure). The FDA has warned about liver failure in conjunction with these drugs. These more serious side effects occur in about 1% of the population taking the drugs.

Macular Degeneration

Macular degeneration is caused by the deterioration of the central portion of the retina, the inside back layer of the eye that records the images we see and sends them via the optic nerve from the eye to the brain. The retina's central portion, known as the macula, is responsible for focusing central vision in the eye, and it controls our ability to read, drive a car, recognize faces or colors, and see objects in fine detail.

Macular degeneration results 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.

Macular degeneration affects more than 10 million Americans. It is an incurable eye disease and that it is the leading cause of blindness for those aged 55 and older. As people age the chances for developing eye diseases increase dramatically. The bioflavonoid, lutein and the omega-3 fatty acid, DHA (docosahexaenoic acid) may have a protective effect on the eye, possibly preventing age-related macular degeneration. Bioflavonoids, like lutein, are antioxidants derived from plants.

A study, published in the *American Journal of Clinical Nutrition* (2008 May;87(5):1521-9) showed that lutein and DHA may improve macular pigment optical density. The subjects of the study were 49 women between the ages of 60 and 80. They were given either DHA (800 mg/day), lutein (12 mg/day), a combination of lutein and DHA or a placebo. Both lutein and DHA supplementation increased pigment density. The lutein increased it in the macula and the DHA increased it in other areas of the eye. The increase in pigment density indicates that the supplements may help protect from macular degeneration.

A new study appearing in the *Archives of Ophthalmology* (2008 Oct;126[10]:1396-403) supports the findings of a lot of other research studies—that protecting the eyes from light and making sure there are a lot of antioxidants in the diet can protect from macular degeneration. Macular degeneration affects more than 10 million Americans. It is an incurable eye disease and that it is the leading cause of blindness for those aged 55 and older. As people age the chances for developing eye diseases increase dramatically.

The researchers looked at 4,400 elderly subjects who were taking part in the European Eye Study. Data was taken from the subjects about lifelong sun exposure. The subjects were also tested for levels of antioxidants in the blood. The participants with low antioxidant levels and high exposure to sunlight tended to have a greater risk of developing macular degeneration.

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Sugar, Insulin and Your Heart

Many of your health problems are due to excess insulin and to insulin insensitivity. Insulin insensitivity is responsible for obesity—and all of its associated health problems.

Insulin insensitivity encompasses three conditions: metabolic syndrome (sometimes called syndrome X), adult onset diabetes and people who are insulin insensitive, but have not developed these conditions yet. Insulin has a lot to do with weight gain and so many other common health problems. Sugar and insulin are involved with high blood pressure, high cholesterol, high triglycerides, and type 2 diabetes. With simple lifestyle changes and some good nutritional products you can help people to easily lose weight and help them with a lot of other health problems. This is easy and it works.

Symptoms of insulin resistance include fatigue, weight gain, brain fog, carbohydrate craving, and needing a nap after eating (from low blood sugar after meals). Approximately 50% of patients with high blood pressure are insulin insensitive. Approximately 30% of American adults are insulin insensitive and 25% have Syndrome X. T

Problems with sugar and insulin cause weight gain, along with a variety of other health problems. In general, these patients carry weight around their abdominal area and crave sugar and starch. Getting insulin production under control is the key to weight loss, and more importantly, heart health.

Dietary changes are, of course, necessary. You need to go on a low glycemic diet—avoiding high glycemic foods like refined carbohydrates. Follow a low glycemic diet; avoid refined foods, hydrogenated oils and additives. Eat a large breakfast—with protein. Eat a lot of fresh produce. Supplementation sometimes helps with cravings, contact our office and schedule a nutritional consultation. Eat slowly and eat until you are full. Ideally, only eat three meals per day.

Exercise regularly and stop snacking. The snacking issue is a tough one; many patients are labeled as hypoglycemic. Some feel weak or shaky if meals are delayed or feel the need to snack every two hours (or have been told to do so). You need to wean from this by increasing the time between snacks. When you first eat, you produce insulin which helps to store the calories of the meal. As time goes on, you produce glucagon, which helps to burn the stored calories. The first three hours after eating, insulin is dominant; after three hours glucagon becomes dominant. You cannot lose weight if you keep producing insulin and snacking makes you produce insulin. It is especially important not to eat between dinner and bedtime.

Carotenoids and Eye Health

Carotenoids are plant pigments that have antioxidant activity. 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, according to Investigative Ophthalmology & Visual Science (1988 Jun;29(6):850-5). 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; β -carotene, 15 mg) and zinc, 80 mg, with progression of AMD.³³ 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

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CoQ10 and Heart Surgery

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.

Vitamin D and MS

"Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius -- and a lot of courage -- to move in the opposite direction." —

Einstein

Researchers at Penn State and Helen Hayes Hospital in New York conducted a small study that has shown that a daily dose of 1000 IU of vitamin D causes changes in blood chemistry that indicate positive effects for multiple sclerosis patients. Also, in the Jan. 13, 2004 issue of *Neurology*, an analysis of data from the Nurse's Health Study indicates that vitamin D may have a protective effect against multiple sclerosis (MS). Women without MS symptoms completed questionnaires on diet and use of multivitamin supplements. A dose of 400 IU or more of vitamin D per day reduced the likelihood of developing MS by 40% when compared to subjects who used no supplements. The study involved 187,563 women, 173 women developed MS during the study. Earlier studies on mice have supported this idea that vitamin D may be a deterrent to MS. Some researchers have linked low vitamin D levels to MS. MS exists mostly in Northern

latitudes where there is less sunlight (hence less vitamin D). Another case-control study, appearing in the *International Journal of Preventative Medicine* (2010 Summer; 1(3): 195-201) involved 50 patients (42 females, 8 males) with multiple sclerosis and 50 matched controls. The study was conducted in an area of Iran with medium-to-high risk of MS despite high sun exposure, mean serum levels of 25(OH)D were significantly lower in patients with MS (48 nmol/L), as compared to controls (62 nmol/L). Furthermore, higher rates of vitamin D deficiency and insufficiency, and lower rates of having normal vitamin D levels were found in patients with MS as compared to controls. The authors state, "We found the same results as those studies carried out in Europe and North America; i.e., lower serum vitamin D level in MS patients than that in normal population, in spite of sufficient sun exposure in Isfahan region."

