

Special Interest Articles:

- Prebiotics and weight
- Fatty acids and cancer
- Diet and rheumatoid
- Stress and disease
- B vitamins and depression
- Flavonoids
- Name that food

Name that food: Low fat salad dressing

Stroke Risk Reduced by Eating Vegetables

A study appearing in *The Lancet* (Vol. 367, Issue 9507, 28 January 2006) looked at eight other studies and the impact eating fruits and vegetables had on the likelihood of stroke. The study analyzed research involving over 250,000 people from the US, Japan and Europe. It found that people who ate five or more servings of fruit and vegetables per day had a 26% reduction in risk for having a stroke when compared to

people who ate three or fewer servings. A serving is defined in the study as 2.7 ounces for vegetables and 2.8 ounces for fruit. Fruit and vegetables are rich in nutrients like vitamin C, beta carotene, potassium and fiber. Plants are rich in antioxidants like bioflavonoids. The researchers suspect that potassium is an important factor in preventing stroke because it helps to lower blood pressure.

Cranberries and Esophageal Cancer

Barrett's esophagus is a pre-cancerous condition arising in 10-20% of people with chronic reflux of stomach contents into the esophagus. People with Barrett's esophagus might have heartburn, indigestion, difficulty swallowing solid foods, or they may be awakened by regurgitating food at night. Patients with Barrett's esophagus have an increased risk of developing esophageal adenocarcinoma, the most rapidly increasing cancer in the United States.

A recent study, appearing in the *Journal of Agricultural and Food Chemistry* (Vol. 56, No. 3: February 13, 2008, e-published ahead of print) looked at the

effect of cranberry extract (proanthocyanidin-rich extract) on inhibiting human esophageal adenocarcinoma cells (cancer cells from the human esophagus). The extract significantly inhibited the proliferation of the cancer cells. A number of recent studies have reported that cranberry extracts affect many types of cancer, including breast, colon, prostate, and other cancers.

Diets high in fruits and vegetables have generally been associated with a reduction of risk for esophageal adenocarcinoma and diets high in meat tend to increase the risk.

Prebiotics and Weight Gain

The group taking the prebiotics had a lower BMI at the end of the study, meaning that there was less obesity than in the group that did not take the prebiotics.

Prebiotics are substances that are not normally digestible, but nourish the bacteria in the colon. Prebiotics are usually carbohydrates (such as oligosaccharides), but they can be non-carbohydrates. The most prevalent forms of prebiotics are nutritionally classed as soluble fiber. To some extent, many forms of dietary fiber exhibit some level of prebiotic effect. A study, published in the *Journal of Pediatrics* (September 2007, Volume 151, Pages 293-298) looked at 97 healthy adolescents who were not obese. The subjects, averaging 11 ½ years old, were divided into two groups and given either a prebiotic (eight grams of inulin/oligofructose)

or a placebo for one year. The BMI (which stands for Body/ Mass Index—it is a measurement of weight as it relates to height; a high BMI is one way to measure if someone is obese) was lower in the group given the prebiotics. There was less obesity in the group given the supplements. The average difference in BMI for the supplement group was .52 kg/m lower. When the researchers considered subjects whose higher calcium intakes (greater than 700 mg per day), they found that the associated benefits were increased, with an average BMI difference of 0.82 kg per sq. m, compared to the placebo group. The prebiotics helped to keep weight off.

Fatty Acids and Cancer Prevention

Research appearing in the journal *Cancer Detection and Prevention* (2003; 27(1):55-66) suggests that the type of fat eaten in the diet can either increase or decrease the chances for developing colon cancer. The article reviewed research involving dietary fat and colon cancer. Consumption of medium chain fatty acids and arachadonic acid (a fatty acid found in meat) increased the chances of developing the disease. Consumption of eicosanopentaenoic acid (EPA—found in fish oil) and short chain fatty acids (produced by normal bowel flora) decreased the chances of developing colon cancer.

Scientists at Texas A&M University, in other research, found that eating mostly corn oil or fish oil can affect the fatty acid composition of cell membranes, which in turn can affect whether a cell will become cancerous. The study was performed on rats, which were injected with a carcinogen known to induce colon cancer (azoxymethane). The scientists then looked at individual cells of the colons of the rats fed either fish oil or corn oil diet. The fish oil favors a better cell membrane, which is cancer protective. Fish oil and corn oil diets might create different chemical environments in the colon.

Diet and Rheumatoid

According to the article, "Clinical Review of Dietary Therapy For Rheumatoid Arthritis", published in the *British Journal of Rheumatology* (1993;32:507-514) changes in diet may benefit patients with rheumatoid arthritis. The authors of the study propose that improving the diet is extremely safe and may improve symptoms and reduce medication needs without any side-effects.

One of the mechanisms suggested for rheumatoid arthritis (RA), is that the immune system responds to microorganisms in the intestine. Microbial infestation in the intestine causes the body to create antigens, which in turn may cause inflammation in the joints. Other sources of joint inflammation may be bacterial proteolytic enzymes or degradation products; these are absorbed through the damaged intestinal lining. It is possible that the anti-inflammatory drugs make the intestinal permeability worse. Addition of fish oil to the diet seems to have a powerful anti-inflammatory effect. The authors suggest that an elimination diet may also produce results.

An article appearing in *The Lancet* (January 4, 1992;339:68-69), reports that a diet containing a lot of raw foods without grains or dairy products may be beneficial to RA patients. In another study 75% of the patients improved their RA by using a diet that excluded substances like cereals and/or dairy products—foods considered to be an "assault" to the patient, or foods to which patients are often sensitive to. The diet provided a significant benefit for all tested indices in 36 patients (78%). Of the 36 responders, 17 were clearly improved and 19 were in complete remission for 1 to 5 years. Eight of these

19 patients stopped all medications and no relapse occurred.

A study published in the journal *Rheumatology* (2001;40:1175-1179) demonstrated that a vegan diet that was also gluten-free was beneficial to RA patients. Nine (40.5%) of the subjects in the vegan, gluten-free group showed improvement (as measured by the American College of Rheumatology (ACR) 20 improvement criteria). Only one patient in the non-vegan group showed such improvement. The immunoglobulin G antibody levels against gliadin and beta-lactoglobulin decreased in the responder subgroup in the vegan diet-treated patients, but not in the group without the dietary changes.

Fasting, followed by a vegan diet seems to benefit RA patients. In a study entitled: "Controlled Trial of Fasting and One Year Vegetarian Diet in Rheumatoid Arthritis", (Kjeldsen-Kragh, Jens, et al, *The Lancet*, October 12, 1991;338:899-902), patients who fasted then followed up with a vegan diet enjoyed a reduction in pain.

Fresh produce in general seems to be of benefit. In published research, ["Lower Arthritis Risk With Higher Fruit, Vegetable, and Vitamin C Intake," *Walsh N, Family Practice News* (May 15, 2003:22)], the higher the intake of fresh produce, the lower the incidence of RA.

Changing the diet is a very low-risk way of bringing RA under control. A number of studies show the benefit of improving the diet. Improving the diet sometimes produces miraculous results.

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Stress and Disease

It is no secret that stress is linked to disease. Some argue that every disease is the result of stress. Most people think of stress as psychological stress, or worrying, but there are many kinds of stress. There is structural stress from subluxations or muscle spasm. There is chemical stress from a poor diet or from chemical exposure. There is the stress of having your immune system challenged by a microorganism. There is thermal stress from being exposed to extreme hot or extreme cold.

According to research appearing in *Epidemiology* (May 2001;11:345-349), psychological stress can increase your chance of coming down with a cold. Also, individuals with a negative outlook on life have an increased chance of contracting a cold.

Of course one reason for this is the fact that stress tends to drive us toward unhealthy behavior. According to research published in *Preventive Medicine* (January 2002;34:29-39), many people overeat as a reaction to stress. Also, researchers at the University of California, San Francisco have found a feedback system in rats that may explain the craving of so called “comfort foods” in people who are under stress. A steroid hormone, called corticosterone, is produced in rats as a response to stress. The human equivalent of this hormone is cortisol. The hormone causes rats to engage in pleasure seeking behavior 24 hours after stress. This behavior causes the rats to crave high calorie food. In the rats’ case, the food was sugar and lard. The hormone’s effect on people is likely to make them crave chocolate, greasy burgers or other high-calorie food.

Stress has a negative effect on the immune system. A review of research spanning more than 40 years was published in *Psychological Bulletin* on July 4, 2004 and covered nearly 300 studies on

stress. Chronic stress has the most negative effect on the body. The longer the stressor is present, the more it affects the body’s ability to adapt, and the more likely that it will lead to a serious negative effect on health. Chronic stress attacks the immune system at the cellular level and then undermines the overall function of the immune system. Research published in *Psychosomatic Medicine* (March 1999;61:175-180) found that stress can actually intensify the symptoms of a cold or the flu.

Stress can also increase the chance of becoming a type II diabetic, according to research appearing in *Diabetes Care* (February 2000;23:197-201). The subjects consisted of 2,000 white adults, who were given a questionnaire about stressful events in their lives. Those with the highest number of stressful events, (serious stressors like the death of a spouse, end of a relationship, long term financial problems) were 60% more likely to have diabetes as those with fewer stressful life events.

Low back pain can have its roots in stress suffered much earlier in life. This is according to research appearing in the *American Journal of Public Health* (October 2001;91:1671-1678). Psychological distress at age 23 increased by 2 ½ times the likelihood of low back pain at age 33.

Stress is linked to high blood pressure, heart disease and even wrinkles. Stress has even been linked to birth defects. Research appearing in *The Lancet* (September 9, 2000;356:875-880) indicates that stress during pregnancy can increase the incidence of birth defects by 80%. Severe stress, like the unexpected death of a child can increase the incidence of birth defects eight-fold.

B Vitamins and Depression

In a double-blind, placebo-controlled study published in the *Journal of the American College of Nutrition* (1992;11(2):159- 163), B vitamins were given to geriatric patients suffering from depression. It was found that taking thiamin, riboflavin and pyridoxine (10 mg/day of each) created improvement in depression rating and

cognitive function scores. The vitamins seemed to potentiate the antidepressant medication the subjects were taking. Interestingly, B₁₂ levels increased in the treatment group, but not in the control group. B₁₂ was not one of the supplements given.

What are Flavonoids?

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.

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.

Flavonoids are broken down into categories. There is some

controversy on how to categorize these substances. One system breaks flavonoids into isoflavones, anthocyanidins, flavans, flavonols, flavones, and flavanones. Some of the best-known flavonoids, such as genistein in soy, and quercetin in onions, can be considered subcategories of categories. Although they are all structurally related, their functions are different. Flavonoids also include hesperidin, rutin, citrus flavonoids, bilberry and a variety of other supplements.

Flavonoids are important because more research is showing them to have a beneficial effect on health. Studies have shown them to protect against heart disease, cancer and a variety of other diseases. They are generally found in fresh produce, and eating fresh fruit and vegetables offers health benefits that go beyond vitamins and minerals.

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Name that "Food"

All who would win
joy, must share it;
happiness was
born a twin.—*Lord
Byron*

Last month's selection
was hard candy.

Diet and lifestyle play a
large role in health and
disease. Many of the things
that pass for food in our
society act to undermine our
health. Dietary indiscretion can
cause health problems. Look
at the information taken from
the label of a commonly
consumed "food" and see if
you can guess what it is:

Ingredients:

*WATER; PARTIALLY
HYDROGENATED SOYBEAN OIL;
CULTURED NONFAT BUTTERMILK
SOLIDS; SUGAR, MODIFIED FOOD
STARCH; SALT; NATURAL
FLAVORS; SODIUM CASEINATE;
VINEGAR; PHOSPHORIC ACID;
ONION (DEHYDRATED); GARLIC*

*(DEHYDRATED); MONOSODIUM
GLUTAMATE (ENHANCES FLAVOR
[ACTUALLY TRICKS YOUR
NERVOUS SYSTEM INTO
THINKING THAT IT TASTES
GOOD]); PROPYLENE GLYCOL
ALGINATE; MONO AND
DIGLYCERIDES; SORBIC ACID;
LACTIC ACID; SPICE; ARTIFICIAL
FLAVOR; XANTHAN GUM;
DISODIUM INOSITATE AND
DISODIUM GUANYLATE; PARSLEY
(DEHYDRATED); CALCIUM
DISODIUM EDTA; THBQ; AND
CITRIC ACID.*

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