

*Dr. Michael Janson's*

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Dear Friends,

A recent article in Newsweek covered the intensity with which people are searching for their genealogical heritage, with DNA analysis adding a new dimension to the ability to accurately trace ancestry. In addition to satisfying their curiosity about relatives they may never have known about, this genetic code search gives people the ability to learn about potential inherited diseases that are in their family tree.

It is interesting that 99.9 percent of our genes are the same as every other human (and slightly less than that are the same as our close relatives in the animal kingdom), while a mere 0.1 percent of our genes account for the differences among individuals. These are important differences, and biochemical individuality suggests that each person's nutritional needs are somewhat different from the next person's, but it is also important not to lose sight of the fact that in many ways we are very similar.

On some level our nutritional needs to maintain good health are the same. For example, we may need different amounts of water, but we all need water, and the variation in amount has far more to do with physical activity, salt intake, and illness than with genes. Similarly for protein: other than during growth phases, healing from surgery or trauma, or kidney and liver diseases that

are worsened by too much protein, the main variation in need relates to activity levels, and it is usually accounted for by an increase or decrease in caloric intake (a higher caloric intake of healthy foods will contain more protein). As a result, you usually needn't make a special effort to get extra protein.

It may be somewhat of a relief to think that our health problems lie in our genes, whether it is obesity, diabetes, heart disease, immune disorders, cancer, Parkinson's, Alzheimer's, or other diseases, or even susceptibility to infections. However, I am reminded of Shakespeare's comment in Julius Caesar that "the fault, dear Brutus, is not in our stars, but in ourselves that we are underlings", which I would paraphrase as "it is not in our genes, but in our lifestyles, that we are unhealthy." (I saw a cartoon once, where one person excitedly exclaims to another "It's in our stars, our stars! We're off the hook!") Well, we are not really off the hook. How we choose to live our lives is the main determinant of our present and long-term health (although genetic tendencies do play some role).

The conclusion I draw is that we have enormous power to influence the development of chronic degenerative diseases and to slow the aging process. The "usual suspects" of diet, dietary supplements, exercise, stress management, aesthetic and spiritual pursuits, and satisfying relationships, almost always trump genes in their effect on our health. Without ignoring the influence of genes, for the most part we are in control of our health destiny, and this is good news.

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## L-Carnitine Update

L-carnitine (LC) is an amino acid with numerous benefits as a dietary supplement. I have previously reported its benefits in heart disease, managing blood lipids, arterial disease in the legs, and kidney disease. As acetyl L-carnitine, it helps in the preservation of brain function when combined with alpha-lipoic acid. Although LC is manufactured in the body, with aging or stresses the production is reduced, making supplements important to overall health.

LC has been helpful in conditions related to oxidative stress, but it is not itself an antioxidant. It apparently increases the expression of genes related to the production of two antioxidant substances, heme oxygenase and nitric oxide. These two substances are also anti-inflammatory and reduce excessive cell proliferation, providing still further benefits from taking LC supplements to reduce heart disease and cancer.

A recent article has noted that LC supplements help cancer patients by reducing fatigue associated with both the disease and with the chemotherapies used to treat it. Researchers treated 12 advanced cancer patients who were on chemotherapy with 6000 mg per day of LC for 4 weeks. Fatigue was significantly decreased and quality of life improved, as measured on a standardized symptom questionnaire. Patients with advanced cancer often have muscle wasting (cachexia) but in these patients LC supplements increased their muscle mass and appetites, important contributors to survival and quality of life.

L-carnitine is necessary for the metabolism of fatty acids for energy in the mitochondria. It is the critical transport molecule to take the fatty acids across the mitochondrial membrane. Depletion of LC impairs cellular energy production. Cancer chemotherapy drugs increase the excretion of LC in the urine, reducing the amount available to the cells. Also, cancer patients have increased metabolic requirements for LC.

An earlier study showed that LC protects against the development of liver cancer in an animal model. Chronic inflammation (including alcohol damage and hepatitis both of which contribute to the development of cirrhosis) plays a role in the development of liver cancer. Abnormal mitochondrial function that results from the chronic dam-

age leads to increasing oxygen free radical production. LC significantly inhibits the formation of these free radicals, reducing oxidative damage, inflammation, and cancer risk.

In type I diabetics, nerve degeneration (neuropathy) is a complication of high sugar levels, and controlling blood sugar is one goal of therapy. However, even in young diabetics, beginning signs of neuropathy can occur early. In 51 diabetics averaging 12 years old, 75 percent of them had measurable nerve conduction defects. Half were given supplements of 2000-3000 mg of L-carnitine per day for two months. At the end of the study, those with the earliest stages of neurological deficit had a 44-50 percent improvement in signs of neuropathy, while those with more advanced deficits did not improve as much (perhaps needing higher doses or longer treatment).

### Lycopene and Blood Pressure

Lycopene is an antioxidant red carotenoid found in tomatoes that helps to reduce the risk of heart disease, loss of vision, and prostate cancer. A recent study in people with moderate elevations of blood pressure shows that lycopene can significantly lower systolic pressure (the higher number). Researchers evaluated 31 subjects from 30 to 70 years old with stage 1 hypertension (systolic pressure of 140-159 and diastolic of 90-99).

Supplements of a tomato extract containing lycopene were administered for four weeks, alternating with a placebo for four weeks. While on the active substance, their systolic blood pressures dropped by 10 points. Diastolic pressure dropped by an average of 4 points. In addition, while on the tomato extract, evidence of lipid peroxidation was also significantly reduced. None of the subjects had been on medications for hypertension. Any pressures over 120/80 increase the risk of arteriosclerosis and other diseases. Lycopene also improves lung function in people with asthma or chronic obstructive pulmonary disease (COPD).

Lycopene has other benefits as well, including protecting the skin from the effects of ultraviolet light. Volunteers taking lycopene for 10-12 weeks had a decrease in the redness response to UV, suggesting protection from sun exposure. In an animal study, lycopene protected animals from the damaging heart and kidney effects of Adriamycin, a cancer chemotherapy drug.

Interestingly, lycopene is even more abundant in several fruits than in tomatoes. Pink and red grapefruit, papaya, red navel oranges, and watermelon all have higher lycopene levels than fresh tomatoes, (20 to 72 mcg per gram, versus 8-42 for tomatoes), and their juices have even more. However, tomatoes are higher when cooked or concentrated, as in sauces, tomato paste, or juice.

## Imagery to Stop Smoking

Stopping smoking is notoriously difficult, but many people still manage to stop, even if they have been smoking heavily for many years. A new study shows that guided imagery helps smokers in their efforts to stop. Subjects were divided into two groups, both given counseling and educational sessions. Of the 71 subjects, 38 were also trained in visualization, and given a 20-minute audiotape to practice daily.

The tape included muscle relaxation, breathing exercises to calm the mind, and visualizing themselves healthy and exercising. In the intervention group, 26 percent were still abstinent at the end of two years, while the control group had only a 12 percent success rate. Visualization also helps other health problems, such as headaches and arthritis.

In another study, a workplace counseling program also helped. Of 223 subjects who complied (out of 308 who consented to participate), smoking cessation was successful in 40-55 percent after one year, and intensive counseling helped 96 percent of those to maintain abstinence for another 12 months. All successful participants reported an improved quality of life.

## Ask Dr. J

**Q.** I've had kidney stones. Can I still take supplements of vitamin C?

DL, Florida, via email

**A.** Vitamin C does not cause kidney stones. This is a myth that has been around since 1973, but no evidence of a problem has surfaced in spite of the large number of people taking large doses of vitamin C in a variety of forms. (Unfortunately, a myth is something that never was true and always will be.)

The most common kidney stones are composed of calcium oxalate. One of the best ways to avoid them is to be sure to drink enough water. Normal amounts of calcium in the diet are usually not a

problem, and may even help to reduce intestinal absorption of oxalate, reducing the formation of such stones.

Oxalate stones can be prevented with adequate dietary intake of magnesium (400-500 mg as aspartate or citrate) and vitamin B6 (pyridoxine, 100 mg), as well as adequate fluids. Reducing animal protein in the diet can help by lowering the urinary excretion of calcium. Vegetarians have a lower incidence of kidney stones (vegetable protein may not be a problem).

Reducing salt intake and increasing potassium may also be helpful in reducing calcium oxalate stones. A diet high in vegetables, whole grains, beans, and fruits is very high in potassium and low in sodium. Citrus fruits also contain lots of citric acid, which may also help to prevent stone formation.

Eliminate caffeine (coffee, tea, chocolate) and sugar from the diet. Both of these may increase calcium in the urine and enhance stone formation. You do not need to worry about vitamin C.

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## In the Health News

- **Statin drugs for high cholesterol levels were thought to reduce the risk of age-related macular degeneration, but new research shows just the opposite.** (McGwin G Jr, et al., 3-hydroxy-3-methylglutaryl coenzyme a reductase inhibitors and the presence of age-related macular degeneration in the Cardiovascular Health Study. *Arch Ophthalmol.* 2006 Jan;124(1):33-7.) In data from 2755 subjects, statins were shown to increase macular degeneration by 13 percent, and after statistical adjustments the number climbed to 40 percent. This was only a trend, but it is important in considering whether to take the medications, especially since safe alternatives exist (policosanol, red yeast rice, niacin, and guggulipids, among others).
- **Compounds found in soy and cruciferous vegetables (cabbage, broccoli and others) enhance DNA repair, providing some explanation as to why these foods help to prevent cancer.** Genistein from soy and indole-3 carbinol from the vegetables administered to both breast and prostate cells increase the levels of two proteins (BRCA1 and BRCA2) that enhance DNA repair. Combining the two phytochemicals works even better. (Fan S, et al., BRCA1 and BRCA2 as molecular targets for phytochemicals indole-3-carbinol and genistein in breast and prostate cancer cells. *Br J Cancer.* 2006 Feb 13;94(3):407-26.)

### Diet and Disease

- **In a study of 14,850 men and women, the group with the highest saturated fat intake, had a 4.3 percent lower bone density than the group with the lowest intake. Men under 50 had the most clear-cut effect, but it also affected women. This result was after adjustments for age, sex, weight, height, race, total energy, dietary calcium, smoking, weight-bearing exercise and hormone replacement in women. The results were independent of dietary protein and vitamin C.** (Corwin RL, et al., Dietary saturated fat intake is inversely associated with bone density in humans: analysis of NHANES III. *J Nutr.* 2006 Jan;136(1):159-65.)

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## Potato-Kale Soup

In a skillet or wok, stir fry chopped onions and garlic with some diced celery in olive oil (you can also add diced carrots as an option). In a large soup pot, put in cleaned, diced potatoes and more than enough water to cover. You can also use some organic vegetable stock or broth (Imagine Foods, Pacific Foods, or other brands) instead of some of the water. Add a touch of cumin, chopped fresh parsley, thyme, fresh ground black pepper, a bunch of chopped fresh dill, and a small amount of soy sauce to taste (you can use sea salt if you prefer). Put the stir fry mixture into the pot and cover it to bring to a boil, and then simmer until the potatoes are just starting to soften. While simmering the mix, mince a bunch of fresh kale. Add the kale to the soup and cook until this is tender. Sprinkle on some uncooked minced dill at the end.

From November to May, I see patients in New Smyrna Beach, Florida. For appointments during this time, call **386-409-7747**. I also do phone consults.

From June to October, I see patients in Arlington, MA, and Amherst, NH. Call **603-878-2256**.

My newest book is *The User's Guide to Heart Healthy Supplements*. You can order it from **QCI Nutritionals** at **888-922-4848**. *Dr. Janson's New Vitamin Revolution* and my other books are also available at my website, from QCI Nutritionals, or health food stores. You can visit the QCI Nutritionals website at **www.qcinutritionals.com** for quality supplements at reasonable prices.

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