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Michael Janson, M.D.
Editor, Healthy Living

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Dear Friends,

The USDA recently implemented their widely publicized organic standards, after massive public comment, and extensive revision and acceptance of some of the suggestions made by the public and the organic food industry. The original plans were shameful in their allowance of sewage sludge fertilizer, irradiated foods, and genetically engineered products. If a producer wants to adhere to stricter standards than the USDA's, they will have no way of informing their customers because of restrictions in the new law.

With all of the hoopla that the USDA generated, and all the pats on the back they gave themselves, they are not really supporters of organic agriculture. Among other things, they do not allow any suggestions that organic foods are in any way better than conventional foods. On top of this, on October 24th, the head of food security of the USDA said that consumers should be wary of organically grown foods!

While all naturally occurring foods may have some associated risks, these risks are far less than those from the highly processed foods about which the USDA never sends warnings. Take hot dogs as an example, made from the scraps of the meat processing industry, including ears, tails, and other parts that cannot normally be sold as meat. The higher levels of pesticides and other

farm chemicals in non-organic foods, especially in meat products, is a chronic and insidious danger, as they cannot usually be tasted or smelled. Choose organic, plant-based foods as the bulk of your diet.

While eating meat itself has known dangers even if it is not contaminated (and it often is), highly processed meats are even worse. They are high in salt, fat, artificial ingredients, and nitrites as a color preservative. These are known carcinogens, and the situation is even worse when the foods are cooked, and worse still when they are grilled, as they often are. In renouncing organic foods while they take credit for standardizing them, the USDA sounds like an agency that could have been conceived by George Orwell in his book, 1984 (which now seems so long ago, but the USDA is trying to catch up).

My advice is to ignore the USDA, while still being careful to handle all your foods carefully and in a hygienic manner, washing vegetables before eating them, and making sure they are fresh. If you choose animal products, cook them properly and handle them in a way that does not contaminate your vegetable products. Make sure your cutting boards are clean, and use different ones for plant-based and animal products. Even without special handling, you are at low risk from organic foods.

The USDA is a protectionist organization, protecting the industrial food producers from the increasing demand for cleaner, safer, healthier food, including organic foods. This is the fastest growing segment of the food industry, and it is *not* reassuring that the USDA now regulates it.

Protection Against Cancer

I have written several times about the value of curcumin, derived from turmeric, as an anti-inflammatory and antioxidant, and in reducing Alzheimer's disease progression and MS in an animal model of the disease. Now, research shows that it protects against cancer.

As so many substances in foods and supplements are helpful in preventing cancer and slowing its progress, or for treatment and reducing the side effects of other therapies, I thought it would be valuable to review some of them.

Curcumin prevents tumor progression in animals. The recent study showed that growth of human pancreatic cancer cells is inhibited by incubating them with curcumin for two hours. You can easily add curcumin to your diet by eating more meals with curry, and using turmeric either fresh or dried in cooking.

Cancer-Fighting Foods

Many foods appear to protect against cancer because of the phytochemicals and antioxidants they contain, many of them flavonoids and isoflavones, but not all. Sulforaphane, phenethylisothiocyanate (PEITC), and indole 3-carbinol are all found in the cabbage family (broccoli, cabbage, brussels sprouts, cauliflower, collards, kale, bok choy, arugula) also known as cruciferous vegetables, or the brassica family.

These compounds block enzymes that promote tumor growth, stimulate production of messenger molecules that support immune defenses, and inactivate food toxins and carcinogens. They also induce programmed cell death (apoptosis) in cancer cells. (The same foods also contain lots of folic acid and vitamin C, both of which protect against lung, colon, and other cancers, as well as heart disease.)

The garlic and onion family of foods, also including scallions, leeks, and chives, contain sulfur compounds called allylic sulfides that inhibit cancer in mice, partly by protecting a glutathione antioxidant enzyme. They also block the carcinogenic effects of aflatoxin, derived from molds. Other studies show that garlic also induces apoptosis in cancer cells.

Fruits contain a number of compounds that fight cancer. Carotenoids comprise a variety of protec-

tive antioxidant plant pigments: alpha and beta carotenes, lycopene, lutein, and zeaxanthin. High levels of these phytonutrients in the blood are associated with lower rates of all cancers and all-cause mortality. Choose lots of orange, red, yellow, and green plant foods for these benefits.

Strawberries, raspberries, apples, grapes, pineapples, tomatoes, and sweet peppers also have special phytochemicals that go beyond carotenoids. These include three acids: ellagic, chlorogenic, and p-coumaric. Numerous animal studies have shown reduction of cancer with higher intakes of these foods, partly from inactivation or decreased formation of carcinogens, and by transporting them out of cells.

Flavonoids from citrus fruits and isoflavones found in beans, including soybeans, alfalfa, and peanuts, are beneficial. The soy isoflavones genistein and daidzein can block cancer cells from being turned on. They may also inhibit new blood vessels that tumors need to grow. Genistein is a weak estrogen that blocks the effects of stronger estrogens, decreasing the incidence of estrogen-related tumors. Lignans are found in flaxseeds and whole grains. They are phytoestrogens that lower the risk of cancer. In animals they reduce breast cancer growth and metastasis.

A number of other foods are also important in reducing the high rates of cancer that we see in the US and other industrialized countries with a highly processed food supply. Mushrooms, whole grains, hot peppers, beets, and leafy greens, are some of the examples.

Supplements Against Cancer

In past issues I have referred to many supplements that are protective against cancer. Coenzyme Q10, vitamins E and C, beta-1,3 glucan, calcium D-glucarate, flavonoids, anthocyanidins, selenium, and of course, curcumin. For patients with cancer, many of these same supplements may be beneficial in helping them prevent the growth and spread of a tumor, or in protecting their immune function to help fight the disease.

Many patients are treated with surgery, radiation, and chemotherapy, and they are often told by their doctors to avoid taking their antioxidant supplements during treatment. They are given the impression that such supplements may interfere with their treatment. This is not the case.

So far, the evidence all points to a protective effect of the supplements, no matter what other treatments are administered. In addition, the supplements appear to reduce the sometimes devastating side effects of the treatments, such as nausea, diarrhea, hair loss, and profound fatigue.

In one study of lung cancer patients, those given high dose antioxidants and other nutrients survived far longer than would be expected, and it worked best in those who started the supplements at the earliest opportunity. They also tolerated their other treatments better than those without supplements.

In another study of patients with bladder cancer, the recurrence rate was cut in half if they were given supplements, and the average survival time was doubled. These are not perfect protection from side effects, or cures (although in some cases they may be), but supplements are an important part of any cancer treatment, as well as prevention, along with (not instead of) a healthy diet of whole, fresh plant-based foods.

Ask Dr. J

Q. What supplements should my girlfriend take for periodontal disease? She already takes 30 mg of coenzyme Q10, but she smokes.

CA, Spain, via Internet

A. Periodontal disease, or gingivitis, is a serious health problem, as it is the number one cause of tooth loss. Chronic infection and inflammation of the gums may lead to bleeding, tenderness, and pus, but gingivitis is usually painless and asymptomatic. Smoking weakens the gums.

Recent medical evidence strongly suggests that gingivitis is a risk factor for chronic disease such as heart disease and strokes, either due to the inflammation itself, or to the oral bacteria that may infect other tissues. Inflammation of any kind has been linked to vascular disease.

The first defense is a healthy diet of fresh vegetables, fruits, whole grains and beans, with high levels of flavonoids and antioxidants. Their roughage helps to clean the teeth and gums during chewing. After eating, it is essential to clean the teeth with flossing and brushing (toothpaste optional). Floss into the gum crevices. A gum stimulator and oral irrigator can also help.

Vitamin C and bioflavonoids can improve the strength of the gum tissue, and protect from infection. I usually recommend supplements of 2000 to 4000 mg of C, and 1000 to 2000 mg of mixed bioflavonoids. Flavonoids reduce inflammation and have anti-inflammatory properties. Curcumin turns up again here as an anti-inflammatory and heart protector (300 to 600 mg).

Gingivitis patients have low levels of antioxidants and coenzyme Q10. Studies over 20 years ago showed that Q10 supplements of 50 to 100 mg helped restore normal gum tissue. More recent research shows that topical coQ10 can reduce plaque and gingival pockets. As coQ10 can also help heart disease, part of its benefit may be from restoration of normal gums. For heart disease, the usual dose is 100 to 200 mg. I recommend the chewable form as it also delivers topical coQ.

Folic acid applied topically as a mouth rinse is one further way to heal the gums. A one minute rinse with a solution containing 5 mg of folate generates healing within 4 weeks.

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USDA Against Organic Foods

USDA: Organic Foods May Be More Contamination-Prone (*Reuters*) Oct 24, 2002.

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Gingivitis

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In the Health News

- Last month I mentioned the recent increase in obesity. A new study shows that obesity can damage arteries even if it is not associated with other risk factors. (De Michele, M, et al., Association of Obesity and Central Fat Distribution With Carotid Artery Wall Thickening in Middle-Aged Women. *Stroke* 2002, 10.1161/01) At each level of weight increase the researchers found a direct correlation with thickening of the carotid arterial wall lining, and it was independent of hypertension, usually thought to be the cause of vascular problems in obese subjects. The same group also showed that obesity is directly related to the development of varicose veins (Iannuzzi A, et al., Varicose veins of the lower limbs and venous capacitance in postmenopausal women: Relationship with obesity. *J Vasc Surg* 2002 Nov;36(5):965-968).
- Arsenic in drinking water is associated with an increased risk of bladder cancer, and tumors of the kidneys, liver, and lungs. The latest research shows that exposure to arsenic also makes bladder cancers more aggressive. (Moore LE, et al., Arsenic-related chromosomal alterations in bladder cancer. *J Natl Cancer Inst* 2002 Nov 20;94(22):1688-96). Arsenic is naturally present in the earth's crust and water, but higher levels come from industrial waste, and it may also get into the water supply by leaching from pressure treated wood, in which arsenic is used as a preservative.

Diet and Disease

- A new study on diet and blood vessels shows that high levels of vitamin E in the diet protect against carotid plaque formation (Iannuzzi A, et al., Dietary and circulating antioxidant vitamins in relation to carotid plaques in middle-aged women. *Am J Clin Nutr* 2002 Sep;76(3):582-7). In this research, using carotid ultrasound, the total amount of dietary vitamin E, plasma vitamin E levels, and the ratio of vitamin E to cholesterol in the blood were all correlated with less atherosclerotic plaque.

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Email: drjanson@drjanson.com
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Michael Janson, M.D.

Holiday Stuffed Pumpkin

Start with a medium pumpkin, and cut a hole in the top large enough for your hand, and at an angle (to put back on later). Remove the seeds (clean, dry, and toast these for a snack). Scoop out one third of the flesh (but maintain the walls) . Boil two cups of barley, millet, or brown rice. Stir fry onions, garlic, and minced carrot and celery in olive oil with some thyme, marjoram, a pinch of cayenne to taste, and a touch of soy sauce. Add the grain and the pumpkin with some minced parsley, chopped walnuts (add raisins and cranberries if you like), stir fry this mixture briefly, and put it all back in the pumpkin with the lid. Bake this at 375 until tender. Another option: cut squash or smaller pumpkins in half, follow the same recipe, put the mix in each half, and cover with foil to bake.

- I see patients at WholeHealth in Arlington, MA. Call 781-641-1901 for an appointment. I also do phone and Email consults.
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