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Dear Friends,

Recent information from the Centers for Disease Control and Prevention show that obesity will soon overtake smoking as a preventable cause of death. The epidemic of obesity is in large part (no pun intended) due to the high level of sweet, refined, fatty foods that have stormed into the diet, and the infiltration of these fast-snack restaurants into our schools and hospitals.

Even more worrying is the government position, and that of the American Dietetic Association (ADA), that there are no such things as bad foods, only bad overall dietary choices. As if you could take a combination of McBurgers, chicken corn dogs, bacon-fries, Twinkies, Snickers, chips, and Cherry Garcia, put them all in a blender, and make a healthful lunch. Of course, you can't take a collection of empty calories and make a nutritious meal.

Mad Cow Testing

With the increasing concerns about the appearance of bovine spongiform encephalopathy (or BSE, also called variant Creutzfeldt-Jakob disease) in the United States, it is understandable that some cattle farmers, especially those who raise their beef naturally, want to test their herds, and report the results of these tests to their consumers. This they are not allowed to do. The USDA, which oversees the testing for BSE, until recently has limited

testing to their own single lab, and some beef suppliers claim that this is not enough.

The USDA claims that their concern is that private testing might be inaccurate, and further alarm the public. They recently expanded their own inadequate testing for BSE, but they still do not let private labs or individual farmers set up testing. According to the Wall Street Journal, the USDA threatens criminal action against anyone testing without their approval. It seems that they are more concerned about alarming the public than protecting them.

While testing for BSE does not guarantee safety, partly because testing may not reveal the presence of the disease in the early stages, it is at least one step to enhance the confidence of the consumer that at least their food has been screened. Cattle-raising practices have been changed to eliminate feeding potentially-infected cattle byproducts to other cattle. I think everyone believes that the USDA is meant to protect people as much as possible, but they also aim to protect the industry that they regulate, and they balance the needs of the consumer with the commercial impact of their decisions.

Testing in Europe and Japan is much more rigorous than in the United States, partly due to the claim that the US beef supply is safe from BSE, but whether this is true, or remains true, can only be known if testing is thorough and reliable, and the USDA needs to "beef up" its efforts if the public is to remain confident. This does not, of course, affect any of the other dangers of excessive meat consumption.

Antioxidant Update

Antioxidants are nutritionally-derived protective compounds that scavenge damaging oxygen-related free radicals (called reactive oxygen species, or ROS) and prevent them from disrupting the functions of cell membranes and the genetic materials DNA and RNA. They also prevent the oxidation of lipids in blood and tissues. Well-known antioxidants or cofactors, such as vitamins C and E, beta-carotene, selenium, and zinc, have a long history of value in treatment and prevention of disease.

In subjects undertaking intense exercise, the high stress increases the metabolic production of ROS, and consequently increases muscle damage. Research shows that supplements of vitamins C, E, and selenium not only reduce the oxidative load, but also alleviate the resulting muscle damage.

Supplements of vitamins C and E, plus beta-carotene and selenium can prevent chromosome damage, the genetic changes underlying carcinogenesis. Researchers gave subjects supplements and examined their white blood cells during replication. They found that the supplements improved plasma antioxidant status, and reduced abnormal cells and chromosome breaks. The benefits were even greater in smokers.

Degenerative Aging Protection

Many other food compounds with antioxidant activity have been discovered in recent decades, including coenzyme Q10, alpha-lipoic acid, and a group of compounds known as polyphenols. Polyphenols include flavonoids, anthocyanidins, isoflavones, catechins, lignan, and a number of sub-categories, all of which work together with other antioxidants to protect against cancer, atherosclerosis, strokes, diabetes, vision loss, and premature aging of the skin..

These compounds are found in a wide variety of fruits, vegetables, seeds, and legumes. Recent research continues to confirm the value of consuming a large amount and a wide variety of these foods and taking supplements. Many of the studies are in cell cultures or in animals, but they are promising for human health. They have antiviral, anti-inflammatory and anti-tumor effects, and help with allergies and immunity.

For example, in cell cultures, quercetin and polyphenols from black tea (theaflavin) and green tea (catechins) were able to protect mitochondria from ROS. The liver cells survived better when treated with these antioxidants before being exposed to a potent generator of oxidative stress.

In one interesting study with practical implications, researchers incubated meat with gastric juice and found a dramatic increase in the production of lipid hydroperoxides and destruction of carotenoids, related to the exposure to iron or myoglobin. When tea-derived catechins or red-wine polyphenols were added to the mix, the oxidative byproducts were reduced to zero and carotene destruction was totally blocked.

A recent report shows that anthocyanidins are present in cacao beans, and that the particular compounds are effective at scavenging ROS that lead to lipid peroxidation.

While all of this may seem like an argument to include tea, wine, and chocolate in your diet, this is not necessarily a healthy way to get your antioxidants. The problem is the sugar in chocolate, the caffeine in tea, and the alcohol in wine can create their own problems, and you can get these benefits from other foods and supplements.

Grapes and grape juice have many of the same antioxidants as wine, and caffeine-free teas and supplements can provide catechins, while anthocyanins are found in grape skins, cranberries, blueberries, and supplements of pine bark and grape seeds. These potent antioxidants help protect the brain and other tissues against aging and degeneration, enhance immune function, and inhibit excessive clotting inside narrowed arteries by blocking platelet aggregation.

Quercetin is found in apples and yellow onions and in supplements. It is yet another substance that inhibits platelet aggregation and it also reduces allergic reactions by blocking the release of histamine. In a recent study, quercetin was able to enhance the anti-cancer effect of cisplatin, a chemotherapy drug.

A number of flavonoids can reduce carcinogenesis by blocking both the initiation and the promotion phases that lead to cancer. One from tangerines, called tangeretin, is particularly helpful. Investigators evaluated this by feeding

rats the nutrients while exposing them to aflatoxin, a mold derivative that causes liver cancer. Other citrus flavonoids have been shown to have anti-cancer and anti-inflammatory activities.

The activity of many herbs is based on the flavonoids that they contain and other antioxidants. Flavonoids are among the active components of ginkgo biloba, bilberry, elderberry, and milk thistle, among others. Cinnamon, for example, contains antioxidants that are more potent in lab studies than vitamin E.

Some antioxidant supplements provide levels that are unattainable from diet alone, and some, but not all, studies suggest that they are of great value in preventing and treating the chronic, degenerative diseases that are common in industrialized societies. It is clear that no one nutrient is sufficient to provide adequate protection, which is why it is important to eat a wide variety of vegetables, fruits, legumes, and seeds, as well as to take supplements.

Ask Dr. J

Q. Do you recommend any good oral chelation products? DF, New Hampshire, via email.

A. Not in the usual sense, but it depends on what you are looking for. Chelation therapy is used in conventional medicine as a treatment for heavy metal toxicity, but most people know of it as an integrative medicine treatment for hardening of the arteries and heart disease. For this treatment, no oral chelation products have been shown to be either safe or effective.

EDTA is the most commonly known drug used as an intravenous treatment for symptoms of atherosclerosis, including angina, claudication, and brain vascular disease. Some promoters have offered EDTA in oral supplements along with a few vitamins, but little EDTA is absorbed through the intestinal tract, and it is not possible to achieve blood levels provided by IV therapy.

If you have heart disease, then in addition to nutrition, exercise, and dietary supplements, IV EDTA chelation may well help you, but oral EDTA has not been shown to be safe in the amounts in many of these supplements (it may carry heavy metals from the intestinal tract into the body). The promoters say that it is approved as a food preservative, so it must be safe. However, the amounts added to foods are extremely

small, and they are unrelated to the amounts in oral chelation, so this is very misleading. EDTA is quite safe when given IV rather than by mouth.

If you are looking for treatment of heavy metal exposure, such as lead, mercury, cadmium, arsenic, this is a different story, although oral EDTA is still not the proper treatment. Alpha-lipoic acid (500 to 1000 mg) has antioxidant and chelating properties, and can help reduce the toxicity of metals such as lead and mercury. Vitamin C is also a mild chelator.

N-acetyl cysteine (NAC) is particularly helpful in removing mercury, especially when combined with another supplement called DMSA (dimercapto succinic acid). Typical doses of NAC are 500 to 1000 mg twice a day. DMSA doses vary, usually between 100 to 500 mg twice a day.

Phytic acid (inositol hexaphosphate or IP6), from beans and grains, is a good chelating agent, and supplements of zinc and selenium also help to remove heavy metals from the body.

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In the Health News

- Excess lead was in the Washington, DC, water supply for over a year before the information was made public and action was taken to rectify the problem, which is not yet solved (D.C. Lead Issue Was Debated for Months, Washington Post, March 16, 2004). The EPA, water officials, and local government were wrangling while the unaware public continued to drink the water. As you can't depend on regulators, the safest way to protect yourself is with a solid-carbon-block (not granulated carbon) water filter (such as those made by MultiPure) or drinking bottled water.
- Vitamin E helps to reduce the risk of prostate and bladder cancers. In one study, subjects with the highest blood level of vitamin E, from food and supplements, had a 53 percent lower risk of prostate cancer. Alpha-tocopherol was better than gamma tocopherol, which also lowered risk (and is also of benefit in other ways). In the other study, bladder cancer risk was reduced by high dietary E, and supplements slightly enhanced that benefit. (More Evidence Found of How Vitamins Prevent Cancer, Reuters, March 28, 2004).

Diet and Disease

- Phytoestrogens are isoflavones derived mainly from soy, red clover, and other beans. These phytochemicals are associated with increased rates of bone formation. Cultures with high soy intake have much lower rates of osteoporosis. In one study (Atkinson C, et al., The effects of phytoestrogen isoflavones on bone density in women... *Am J Clin Nutr.* 2004 Feb;79(2):326-33.), 177 women between the ages of 49 to 65 were administered either isoflavones or a placebo for one year. Those who received the isoflavones did significantly better than the placebo group in terms of bone density.

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Vegetarian Split Pea Soup

Split pea soup is a hearty and tasty staple of vegetarian cooking (without the hambone, of course). Sauté some diced onions and crushed garlic with olive oil, freshly ground pepper, cumin, thyme, and a dash of cayenne (more if you like it spicy) until the onions are starting to turn brown. Add some diced celery, carrots, and chopped parsley, stir them around until they are well mixed, and add 1-2 cups of dried green and yellow split peas. You can also add a half cup of barley to the mix to vary the texture and flavor. Boil 2-4 quarts of dilute vegetable broth (you can get organic broth from Imagine Foods or use other brands), and put all together in a large soup pot. Simmer and stir regularly until the peas are cooked, adding more water as needed, or use a crock pot so you don't have to watch it or worry about stirring or sticking. Serve with whole wheat bread.

I just received my Florida medical license, and will soon start seeing patients in New Smyrna Beach, from November to May. For appointments, or phone consults, call **386-409-7747**.

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