

The Garden Plot, January 2008

By Robin Mittenenthal, University Apartments Community Gardens Committee

Our bodies need to get many things from food to run well. The list includes proteins, fats, and sugars, all of which we need in fairly large amounts, as well as vitamins and minerals, which we need in very small amounts. Scientists have also discovered hundreds of other molecules that are not absolutely required by our bodies but which seem to help us deal with cancer, high cholesterol, arthritis, and other diseases and affects of aging. One group of these molecules is called *phytochemicals*, from the Greek word *phytos*, meaning “plant.” As their name implies, these chemicals are typically found in plants. Phytochemicals include carotenes, which are responsible for the orange color of carrots, and lycopenes, which give tomatoes and watermelons their red color.

Proteins, fats, and sugars each have different jobs in our bodies, but because our bodies can use them all for fuel, people who study nutrition and human health sometimes group them all together as “energy.” Vitamins, minerals, and chemicals like phytochemicals also do varied jobs, but for my purposes here I’ll call them “nutrients.”

Next time you go into a supermarket, you might look around and think about both the *energy density* and the *nutrient density* of the foods you usually buy. Energy density is measured in calories per gram (or ounce) of the food. Foods like potato chips, cookies, and sodas have high *energy densities* because there are lots of calories in each chip, cookie, or cup of soda. At the same time, these foods have very low *nutrient densities*, which means they have few vitamins, minerals, and phytochemicals compared to the amount of energy of they contain. Foods like fruit, salad greens, and, to some extent, “lean” meat (meat without much fat in it) are the opposite – they have very high *nutrient densities*, but low *energy densities*. A spinach salad will not give you much energy to run around, but it will give your body things like iron, many vitamins, and phytochemicals.

We all need to eat some protein, fat and sugar, but as you probably know, eating a lot of nutrient-dense foods is bad for your health. Obesity, diabetes, high blood pressure, and high cholesterol levels are just a few of the many health problems that can result from overconsumption of energy-dense foods. Unfortunately, as a wise professor of mine once said, “The human body evolved to survive starvation, not to resist abundance.” A long time ago, our ancestors *needed* to eat all the fatty, sugary, and protein-rich foods they could get because those foods were hard to find (and because our ancestors did hard physical work). Now that we are surrounded by these foods, however, we find it hard not to eat them even though most of us *don’t* do hard physical work.

A study in the December 2007 issue of the *Journal of the American Dietetic Association* points to another reason why it’s easy to eat badly: not only are nutrient-rich foods like spinach almost ten times as expensive per calorie of energy as energy-dense foods like potato chips, but the prices of nutrient-rich foods rose much faster over the last 20 years than the prices of energy-dense foods. What this means is that if you don’t have much money, you are more likely to fill your stomach with potato chips or hot dogs than with spinach or fish. If you do that, however,

you hurt your body twice: once by eating too many calories, and again by not eating enough nutrients.

We are lucky to have many stores in Madison (the Willy Street Co-op, the Regent Street Co-op, Trade Joe's, Whole Foods, and others) that sell nutrient-dense foods, including many grown by local farmers. There are also local subscription farms called CSAs (see <http://macsac.org/> to learn more and sign up for 2008) and farmers' markets, including the Dane County Farmers' Market (held this winter on Saturday mornings from Jan. 5 to April 12, in the Madison Senior Center, 330 W. Mifflin St.). All of these sellers provide high-quality, nutrient-dense food, but it isn't cheap (why this food *cannot* be very cheap will, I hope, be the subject of a future column).

If you have figured out that I'm trying to make an argument for gardening, give yourself a pat on the back. The best way to get low-cost, nutrient-dense food is to grow it yourself! If you do, and if you learn a bit about drying and preserving food, you can eat your own nutrient-dense foods all year long. For gardening advice, including a complete, free manual for beginning gardeners, go to <http://www.eagleheightsgardens.org/> and click on "Gardening tips." Winter in Wisconsin is not a good time to grow things, but it's a great time to start learning how.