

## The Smartest Food

### Diet modifications can ward off disease and slow down aging.

By Psychology Today.com

There's a revolution going on. And it's not being fought with guns and bombs but with garden-variety fruits and vegetables.

Call it the "smart-food revolution." It has to do with the growing body of research showing that everyday produce can function medically to prevent, treat and even cure common diseases.

Many green grocery items contain goodies that can help ward off the diseases of aging, such as cancer and heart disease, and slow down the aging process itself. Some of them can even halt the brain deterioration and memory loss that tends to accompany aging.

All together, the findings suggest that relatively simple diet modifications can slow down the normal process of brain aging and memory impairment. And delicious little blueberries may be the smartest food of all.

Fruits and vegetables get their bright colors courtesy of phytonutrients, or natural plant compounds. Anthocyanin, the phytonutrient responsible for the blueberry's deep hue, is largely thought responsible for the fruit's protective powers. In a one-two punch, anthocyanin acts to protect the brain in two ways—as an antioxidant and as an anti-inflammatory agent.

A Tufts University study of more than 40 fruits and vegetables found that blueberries contain the highest concentration of anthocyanin, giving the fruit superior ability to clean up free radicals of oxygen. These are highly reactive molecular fragments that, left to their own devices, undermine normal body processes by attacking cell membranes and the genetic material contained inside cells.

Free radicals accumulate in tissue as a result of normal metabolic activity, exposure to toxins, and age. The damage they do is collectively known as oxidative stress, and it is now thought to cause cancer and other age-related diseases.

So far, most of the research on blueberries has been conducted on rats, but the results offer clear clues as to how the fruit can help humans. A team of scientists led by James Joseph of the Friedman School of Nutrition Science and Policy at Tufts University has found that a diet rich in blueberries reverses age-related declines in balance and coordination. It also improves short-term memory and spatial learning, even in older rats.

Joseph is conducting studies with human subjects. Preliminary results show that people who eat a cup of blueberries a day perform 5 percent to 6 percent better than a control group on tests of motor skills.

While the mechanism is not completely understood, the compounds in blueberries seem to reverse, or at least slow down, the damaging effects of aging on nerve cell function and behavior by reducing oxidative stress. In addition, anthocyanin's anti-inflammatory properties keep blood flowing smoothly. This not only prevents hardening of the arteries, it provides energy for mental functions and supports a bright mood.

At the University of Maine, Dorothea J. Klimis, associate professor of clinical nutrition, started looking at blueberries because of her interest in heart disease and manganese, a trace mineral found in abundance in blueberries.

She found that blueberries have a powerful effect on arteries, keeping them from constricting in response to stress hormones. Constricted arteries can raise blood pressure and bring on cardiovascular disease, the leading cause of death in the U.S.

Her studies suggest that the compounds in blueberries bolster the bioavailability of nitric oxide, an artery relaxer. She is measuring enzymes that aid nitric oxide to see at which point in the chemical process blueberries intervene.

Although the research points to a compound within anthocyanin, Klimis is not interested in singling out specific ingredients. "The food industry is notorious for extracting things and turning them into pills. I promote whole foods. It's probably a synergistic effect within blueberries anyhow."

Smaller, wild blueberries, the "low-bush" variety, are thought to be healthier than cultivated blueberries because they contain more anthocyanin. And frozen berries are just as good as fresh ones.

Like their first cousins the cranberries, blueberries have been shown to suppress urinary tract infections, and to reduce eyestrain, too. "Hippocrates said to use food as medicine," Klimis reports, "but doctors don't do that."

You can.

content by:

**Psychology Today**

By Carlin Flora

Last Reviewed: 30 Jun 2005

Psychology Today © Copyright 1991 - 2005