

Deep colors boost fruits' preventive superpowers

By [Mary Nguyen](#)

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Do not underestimate the blueberry. What it lacks in size, it more than makes up for in health benefits. • It tastes pretty good, too. • Long heralded by nutritionists, the blueberry has been reported to benefit brain health and to help inhibit Type 2 diabetes. • And a study published recently in the American Heart Association journal *Circulation* suggests that eating three servings of berries a day can reduce the risk of heart attacks in some women.

What makes this superfood so super? Bioactive elements called flavonoids. In berries, the flavonoids are anthocyanins, the stuff that gives them their uniquely rich colors.

Other flavonoids include quercetin and apigenin, which are in onions, apples and broccoli as well as berries; naringenins, found in citrus fruits; catechins, in some teas; and genistein, in legumes and soy.

“Many of these compounds are in the plant because they serve a protective effect, especially against insects and pests,” said Steven Schwartz, director at the Center for Functional Food Research and Entrepreneurship and a professor of food science at Ohio State University.

“When humans consume them, we’re finding that they also have a disease-prevention quality. They exhibit the same biological activity.”

The *Circulation* study suggests that the anthocyanins found in berries dilate arterial walls and reduce plaque buildup. The flavonoids in most fruits and vegetables act as antioxidants, which inhibit cell damage and help prevent certain kinds of cancer, including breast, prostate and lung.

“The general hypothesis is that aging and chronic disease may result from oxidative stress or inflammation over a person’s lifetime,” Schwartz said. Flavonoids “have been shown to prevent certain diseases or minimize their extent.”

A diet of fresh fruits and vegetables is ideal, but packaged foods and rich, fatty foods don’t have to be eliminated, said Dr. Laxmi Mehta, president of the Central Ohio American Heart Association.

Moderation is important, she said, as is simply being mindful of what you eat.

“It’s not an easy thing to eat healthy,” she said. “It requires a constant effort. When you’re at the store, read labels. Ask what’s in the food.

“When you eat better, you typically tend to feel better.”

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Bioactive elements in many plants, fruits and vegetables transfer some of their natural protective elements to humans when eaten. Many have been shown to especially protect against cardiovascular damage and disease. Some of the compounds in food that contribute to a healthy heart:

COMPOUND	FOUND IN	HEALTH BENEFITS
Anthocyanin (flavonoid)	Blueberries, strawberries, raspberries, blackberries, red grapes, red wine, plums	Reduces risk of heart attack in women; dilates arterial walls and reduces plaque buildup; reduces inflammation
B-complex vitamins	Beans, soy, soybeans, oatmeal	Protects against blood clots and hardening of the arteries; increases HDL, or “good” cholesterol
Carotenoids	Tomatoes, carrots, broccoli, spinach, asparagus, grapefruits	Protects against cell damage from free radicals; reduces risk of certain cancers
Catechin (flavonoid)	Green teas, cocoa, cocoa beverages, dark chocolate (70% cocoa content)	Reduces risk of stroke, heart failure, cancer and diabetes; produces anti-blood-clotting agent; improves blood flow
Fiber	Kale, squash, brown rice, whole grains, flaxseed, cantaloupe, spinach, broccoli	Lowers cholesterol, blood pressure and risk of heart disease; reduces blood-sugar levels and risk of diabetes
Quercetin (flavonoid)	Apples and pears, tomatoes, onions, cherries, broccoli	Reduces inflammation from allergies; prevents plaque buildup in arterial walls; lowers cholesterol; reduces blood pressure; reduces pain and symptoms of bladder-related infections

Sources: National Institutes of Health; American Heart Association; WebMD.com; Centers for Disease Control and Prevention; MayoClinic; University of Maryland Medical Center

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