

What are **ANTIOXIDANTS**? **WHY** are they important? **WHICH FOODS** contain the most? What do **ORGANIC** foods contribute?



The brighter the color, the bigger the boost!



Pick fresh and local whenever possible.

NATURALLY OCCURRING ANTIOXIDANTS PROVIDE HEALTH BENEFITS

Antioxidants are powerful allies in combating inflammation and lowering heart disease and cancer risk. They promote strong immune systems and help tip the odds toward graceful aging. Some antioxidants are manufactured in our bodies but our innate capacity to synthesize antioxidants becomes less efficient as we age, and our bodies are totally dependent on food for some critical antioxidants, including vitamins C and E.

Antioxidants are naturally-occurring compounds in fruits, vegetables and whole grains. The benefits of antioxidants arise from their impacts on “free radicals,” which are unstable oxygen and nitrogen molecules produced in our cells as a result of breaking down food, normal cell respiration, vigorous exercise, and exposure to chemicals. “Free radicals” carry an electrical charge that makes them unstable. They can erode the integrity of cell walls, disrupt cellular processes, and damage the DNA in cells.

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The U.S. government releases new dietary guidelines doubling the recommended number of servings of fruits and vegetables from “Five-a-Day” to 9-13 servings. The goal -- improving public health by, in part, increasing average antioxidant intakes.

Antioxidants neutralize the electrical charge of free radicals, eroding their capacity to disrupt and damage cells. The more antioxidants circulating in your body, the more free radicals will be deactivated. But the life-cycle of antioxidants in the human body is short-lived. Most of the antioxidants in those blueberries you had for breakfast have moved into your body and worked their magic by dinner. This is why we all need to consume antioxidant-rich fruits and vegetables at least a couple of times a day, every day. And also why the vast majority of Americans do not get enough antioxidants in their food. Most of us need to double our antioxidant intake to take full advantage of their health promoting potential.

ELEVATING ANTIOXIDANT INTAKES

Proven Strategies

Consume at least one more serving of fruit or vegetable at each meal, and a couple more as snacks. Pick ripe, fresh and brightly colored produce whenever possible.



Hand-squeeze fruit juice yourself whenever you can. Commercial squeezing plus pasteurizing depletes about 20 percent more of the antioxidants in raw fruit.

When selecting oils and juices in the store, look for organic brands that are not processed at high temperatures or under extremely high pressures.



Enjoy all those processed tomato products that help liven up so many favorite dishes. Cooked tomatoes, tomato soup and tomato sauce all have higher concentrations of antioxidants than raw tomatoes, because in the case

of tomatoes, heat processing significantly increases antioxidant content. A recent study also concluded that organic catsup has 50 percent higher levels of antioxidants than a group of major national brands.

Maximizing Antioxidant Intake



Priority Number One --
Eat at least nine and up to thirteen servings of fruits and vegetables throughout the day.



Seeking out organic produce and processed fruits and vegetables will also increase antioxidant intakes by about 30 percent, compared to produce grown on otherwise similar conventional farms. The greater density of antioxidants per ounce – or calorie – of food consumed reinforces other health benefits linked to organic food and farming, these include higher levels of some essential vitamins and minerals and lower levels of pesticides.

You might wonder why and how organic farming elevates antioxidant concentrations.

One explanation is linked to pest pressure. When plants are under stress from pests, they produce a diverse array of natural chemicals called secondary plant metabolites (SPMs), many of which are antioxidants. SPMs also are responsible for giving fruit and vegetables their bright coloring and distinctive flavors. Plants on organic farms typically have to deal with higher levels of pests than plants on nearby conventional farms, where pesticides are routinely applied. For this reason, plants on organic farms more fully engage their innate defense mechanisms, and in the course of doing so, elevate antioxidant concentrations.

A second explanation arises from the fact that antioxidant levels tend to be higher in organic fruit and vegetables because plants on organic farms tend to grow slower and mature at a smaller size than fast growing, heavily fertilized conventional produce. This explanation has its roots in the “dilution effect,” the tendency for vitamins, minerals and antioxidant levels to be reduced – or diluted – in large, fast growing and high yielding crops.

Foods With the Highest Overall Antioxidant Capacity per Serving

Blueberries	Grapefruit
Cranberries	Peaches
Blackberries	Yellow pepper
Raspberries	Green grapes
Strawberries	Blackeye peas
Apples	Cooked
Plums	tomatoes
Potatoes	Cooked
Sweet cherries	artichoke
Kidney beans	Red cabbage
Pinto beans	Red-leaf
Prunes	lettuce
Asparagus	Broccoli raab
	Beets



Higher antioxidant intakes are within reach of all Americans. The single most reliable way to assure no shortage of “free radical” fighting antioxidants is to eat multiple servings daily of brightly colored, relatively unprocessed fruits and vegetables.

Buying fresh organic produce and organic processed fruit and vegetable products will further leverage – by almost a third – the health benefits triggered by eating more fruits and vegetables.



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Access more information on antioxidants and the State of Science Review **“Evaluating Antioxidant Levels in Food Through Organic Farming and Food Processing”** at: www.organic-center.org under “State of Science”.