

YOUR CHALLENGE: Eat foods rich in antioxidants. Report the completion of your goal at www.dmba.com with a simple "yes" or "no."

WHAT ARE ANTIOXIDANTS?

You might have heard about antioxidants, but do you know what they are? Antioxidants are positively charged molecules that neutralize free radicals.

Ultimately, antioxidants appear to protect the body against diseases such as cancer, heart disease, stroke, diabetes, Parkinson's disease, and cataracts. Antioxidants may also help keep your immune system healthy, your brain sharp, and your skin healthier.

Here's how the process works: As part of your normal day, you eat, breathe, and drink water. You might even take prescription medicines. As your body metabolizes these substances, it naturally creates some free radicals.

A free radical is a mutated (and unstable) oxygen molecule—a molecule that is missing at least one electron. Once formed, these highly reactive molecules travel throughout your body seeking stabilization by stealing electrons from healthy cells. When they are successful in their electron-stealing attempt, the free radicals leave behind damaged cells.

Fortunately, your cells have a built-in repair system. But the repair process can't keep up when your body is subjected to a constant barrage because of excessive free radicals generated from:

- Environmental factors such as pollution, naturally occurring radiation, cigarette smoke, pesticides, and herbicides
- Your own immune system in an attempt to neutralize viruses and bacteria
- Dietary factors, such as fried foods or excess sugar

Antioxidants block this damaging process by donating an electron to the free radical before it can oxidize other cell components. Since the free radical is stabilized, it becomes non-toxic to cells.

WHERE TO FIND ANTIOXIDANTS

You can get all the antioxidants your body needs by eating lots of fruits, vegetables, whole grains, nuts, and other healthy fats and legumes.

Berries, apples, and other fruits might just keep the doctor away. In terms of antioxidant content per typical serving, berries top the list—comprising six of the top 12 high-antioxidant foods. Blueberries, cranberries, blackberries, raspberries, and strawberries ranked highest. Other fruits high in antioxidants include apples, cherries, prunes, and plums.

Legumes are linked to longevity and include beans, peas, and lentils. In a USDA study, three of the top four antioxidant foods were beans!

A study sponsored by the International Union of Nutritional Sciences and the World Health Organization (called Food Habits in Later Life) found that for every daily increase of 20 grams of legumes (less than two tablespoons) there was an 8 percent decrease in death risk. This was true regardless of smoking status, alcohol consumption, total calories eaten, and saturated fat intake.

GRAPE JUICE GETS A "THUMBS UP"

Purple grape juice contains flavonoids and other antioxidants, has the most staying power, and packs a real antioxidant punch.

EAT A VARIETY OF FOODS

Researchers and leading health organizations recommend you eat a variety of nutrient-rich foods from all the basic food groups every day. One reliable way to identify antioxidant-rich foods is by their distinctive colors: the deep red of cherries and tomatoes; the orange of carrots; the yellow of corn, mangoes, and saffron; and the blue of blueberries, blackberries, and grapes. The list below describes food sources of common antioxidants.



Beta-carotene is found in many orange foods, including sweet potatoes, carrots, cantaloupe, squash, apricots, pumpkin, and mangoes. Some green, leafy vegetables, including collard greens, spinach, and kale, are also rich in beta-carotene. Sources of vitamin A include milk, cheese, and eggs.

Lutein is best known for its association with healthy eyes and is abundant in green, leafy vegetables such as collard greens, spinach, and kale.

Lycopene is a potent antioxidant found in red and pink foods, such as tomatoes, watermelon, guava, papaya, apricots, pink grapefruit, and blood oranges. Approximately 85 percent of the American dietary intake of lycopene comes from tomatoes and tomato products.

Selenium is a mineral, not an antioxidant. But it acts as an antioxidant and is a component of antioxidant enzymes. Plant foods such as brown rice and whole-grain wheat are the major dietary sources of selenium. Brazil nuts also contain large quantities of selenium.

Vitamin C, also called ascorbic acid, can be found in high abundance in many fruits and vegetables, including red and green peppers, guavas, grapefruit, green broccoli, kiwi, collards, orange papayas, mangoes, tangerines, and oranges.

Anthocyanins are the compounds that give many berries their dark blue color. Some lesser-

known purple berries (elderberry, black currant, and chokeberry) have as much as 50 percent more antioxidants than some of the more common berries.

Vitamin E, also known as gamma-tocopherol, is common in foods and helps the body the most. It is found in filberts (hazelnuts), sunflower seeds, almonds, wheat germ, and in many oils including wheat germ, safflower, corn, and soybean oils.

Fiber is found in all colors of fruits and vegetables, and in legumes, whole grains, nuts, and soy. Among its other benefits, fiber can reduce blood sugar concentrations, reduce inflammation, and enhance the antioxidant process. All of these might help to protect the lungs against environmental insults, such as exposure to secondhand smoke.

COOKED OR COLD?

Whether a food is eaten fresh, frozen, processed, or cooked affects its antioxidant potency. For example, tomatoes release the most antioxidants when cooked.

Blueberries, on the other hand, are most beneficial when eaten raw. Carrots and spinach are most nutritious when eaten fresh and raw. So it's also important to eat many fresh foods each day—but they don't all need to be raw.



ENHANCE FLAVOR WITH HERBS

Besides making food tastier, herbs and spices can be an abundant source of antioxidants and could provide potential anti-cancer benefits when part of a balanced diet. On an ounce-for-ounce basis, herbs and spices have the highest antioxidant activity of all the foods. But, of course, they are eaten in relatively small quantities.

These fresh herbs contain the same antioxidant activity as an apple:

- 1 tablespoon of oregano
- 3 tablespoons of dill
- 4½ tablespoons of thyme
- 7 tablespoons of sage
- 8 tablespoons of parsley

Fresher is better because fresh herbs contain more antioxidants than powdered versions.

CHOCOLATE!

Satisfy your chocolate craving with dark cocoa. Cocoa phenolic phytochemicals, or flavonoids. But before you rush to the store for your favorite chocolate bar, consider this: while high in antioxidants, a milk chocolate bar also contains eight grams of fat.

So when you have a craving, choose dark chocolate (with cocoa content of 70 percent or higher).

WANT MORE INFORMATION?

- American Heart Association https://www.heart.org/en/healthy-living
- WebMD https://www.webmd.com/living-healthy
- CDC Healthy Living https://www.cdc.gov/healthyliving/index.html

Note: If you can't complete this challenge because of a medical condition, let us know and we'll come up with an alternative for you.

