

Sources of antioxidants

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- Antioxidants are compounds produced in your body and found in foods. They help defend your cells from damage caused by potentially harmful molecules known as free radicals
- When free radicals accumulate, they can cause oxidative stress. This may damage your DNA and other important structures in your cells.
- Chronic oxidative stress can increase your risk of chronic diseases such as heart disease, type 2 diabetes, and cancer.

- Fortunately, eating a diet rich in antioxidants can help increase your blood antioxidant levels to decrease oxidative stress and reduce the risk of these diseases.
- One of the best tests is the FRAP (ferric reducing ability of plasma) analysis. It measures the antioxidant content of foods by determining how well they can neutralize a specific free radical.
- The higher the FRAP value, the more antioxidants the food contains.

➤ Here are the top 12 healthy foods that are high in antioxidants:

➤ **1. Dark chocolate**

➤ Based on a 2010 FRAP analysis, dark chocolate has up to 15 millimoles (mmol) of antioxidants per 100 grams (g).

➤ Moreover, the antioxidants in cocoa and dark chocolate have been linked to impressive health benefits such as decreased inflammation and reduced risk factors for heart disease.

➤ For example, a review of 31 studies looked at the link between cocoa intake and blood pressure in people with normal and high blood pressure.

2. Pecans

- Pecans are a type of nut native to North America. They are a good source of healthy fats and minerals, plus contain a high amount of antioxidants.
- Based on a FRAP analysis, [pecans](#) contain up to 10.6 mmol of antioxidants per 100g.
- In addition, pecans can help raise antioxidant levels in the blood.
- In another 8-week study, people who consumed pecans experienced a reduction in levels of total cholesterol, LDL (bad) cholesterol, and triglycerides compared to a control group, all of which are risk factors for heart disease.

3. Blueberries

- According to a FRAP analysis, blueberries have up to 9.2 mmol of antioxidants per 100 g.
- Research from test-tube and animal studies has shown that the antioxidants in blueberries may delay the decline in brain function that tends to happen with age. They're thought to do this by neutralizing harmful free radicals, reducing inflammation, and altering the expression of certain genes

4. Strawberries

- Strawberries are among the most popular berries on the planet. They are sweet, versatile, and a rich source of vitamin C and antioxidants.
- Based on a FRAP analysis, strawberries provide up to 5.4 mmol of antioxidants per 100.
- Moreover, strawberries contain a type of antioxidant called anthocyanins, which give them their red color. Strawberries that have a higher anthocyanin content tend to be brighter in color .
- Research has shown that anthocyanins may help reduce the risk of heart disease by reducing levels of LDL (bad) cholesterol and raising HDL (good) cholesterol

5. Artichokes

- Artichokes are a delicious and nutritious vegetable not very common in the North American diet.
- Artichokes are also a great source of dietary fiber, minerals, and antioxidants.
- Based on a FRAP analysis, artichokes contain up to 4.7 mmol of antioxidants per 100 g.
- Artichokes are especially rich in the antioxidant known as chlorogenic acid.
- Studies suggest that the antioxidant and anti-inflammatory benefits of chlorogenic acid may reduce the risk of certain cancers, type 2 diabetes, and heart disease.



6. Goji berries

- Goji berries are the dried fruits of two related plants, *Lycium barbarum* and *Lycium chinense*.
- Goji berries are often marketed as a superfood because they are rich in vitamins, minerals, and antioxidants.
- Based on a FRAP analysis, goji berries contain 4.3 mmol of antioxidants per 3.5 100 g.
- In addition, goji berries contain unique antioxidants known as *Lycium barbarum* polysaccharides, which have been linked to a reduced risk of heart disease and cancer.
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- Moreover, goji berries may also be very effective at raising blood antioxidant levels



7. Raspberries

- Raspberries are soft, tart berries that are often used in desserts. They are a great source of dietary fiber, vitamin C, manganese, and antioxidants.
- Based on a FRAP analysis, raspberries have up to 4 mmol of antioxidants per 100 g.
- Several studies have linked the antioxidants and other components in raspberries to lower risks of cancer and heart disease.

- A review of five studies concluded that the anti-inflammatory and antioxidant properties of [black raspberries](#) may slow down and suppress the effects of a variety of cancers.
- Plus, the antioxidants in raspberries, especially anthocyanins, may reduce inflammation and oxidative stress. This may reduce the risk of heart disease



8. Kale

- Kale is a cruciferous vegetable and a member of the group of vegetables cultivated from the species *Brassica oleracea*. Other members include broccoli and cauliflower.
- Kale is one of the most nutritious greens on the planet and is rich in vitamins A, K, and C. It's also rich in antioxidants, providing up to 2.7 mmol per 3.5 100 g.



- This is because red varieties of kale contain more anthocyanin antioxidants as well as several other antioxidants that give them their vibrant color
- Kale is also a great plant-based source of calcium, an important mineral that helps maintain bone health and plays roles in other cellular functions

9. Red cabbage

- Red cabbage has an impressive nutrient profile. Also known as [purple cabbage](#), it is rich in vitamins C, K, and A, and has a high antioxidant content .
- According to a FRAP analysis, red cabbage provides up to 2.2 mmol of antioxidants per 100 g.
- That's more than four times the amount of antioxidants in regular cooked cabbage.
- This is because red cabbage contains anthocyanins, a group of antioxidants that give red cabbage its color. Anthocyanins are also found in strawberries and raspberries.
- These anthocyanins have been linked to several health benefits. They may reduce inflammation, protect against heart disease, and reduce the risk of certain cancers



10. Beans

- Beans are a diverse group of legumes that are inexpensive and healthy. They are also incredibly high in fiber, which can help keep your bowel movements regular
- Beans are also one of the best vegetable sources of antioxidants. A FRAP analysis found that green broad beans contain up to 2 mmol of antioxidants per 3.5 oz (100 g)



- In addition, some beans contain a particular antioxidant called kaempferol. This antioxidant has been linked to impressive health benefits, such as reduced chronic inflammation and suppressed cancer growth
- For example, several animal studies have found that kaempferol may suppress the growth of cancers in the breast, bladder, kidneys, and lungs

11. Beets

- Beets, also known as [beetroot](#), are the roots of a vegetable scientifically known as *Beta vulgaris*. They have an earthy taste and are a great source of fiber, potassium, iron, folate, and antioxidants
- Based on a FRAP analysis, beets contain up to 1.7 mmol of antioxidants per (100 grams)
- They're particularly rich in a group of antioxidants called betalains. These give beets their reddish color and have been linked to health benefits.



- For example, several test-tube studies have linked betalains to a lower risk of cancers in the colon and digestive tract
- Additionally, beets contain other compounds that may help suppress inflammation. For example, a study found that taking betalain capsules made from beetroot extract significantly relieved osteoarthritis pain and inflammation

12. Spinach

- Spinach is one of the most nutritionally dense vegetables. It's loaded with vitamins, minerals, and antioxidants, and is incredibly low in calories .
- Based on a FRAP analysis, spinach provides up to 1.4 mmol of antioxidants per 3.5 oz (100 g)
- Spinach is also a great source of lutein and zeaxanthin, two antioxidants that may help protect your eyes from damaging ultraviolet light and other harmful wavelengths
- These antioxidants help combat damage to the eyes that free radicals may cause over time





*Thank
you*