

What are the health benefits of dark chocolate?

Dark chocolate is rich in minerals, such as iron, magnesium, and zinc. The cocoa in dark chocolate also contains antioxidants called flavonoids, which may provide several health benefits.

Chocolate comes from cacao, which is a plant with high levels of minerals and [antioxidants](#). Commercial milk chocolate contains cocoa butter, sugar, milk, and small quantities of cacao. In contrast, dark chocolate has much larger amounts of cacao and less sugar than milk chocolate. Dark chocolate contains several compounds that possess antioxidant properties, such as flavanols and polyphenols. Antioxidants neutralize free radicals and prevent oxidative stress. Oxidative stress refers to the damage that excessive amounts of free radicals can inflict on cells and tissues in the body.

Oxidative stress contributes to the natural aging process. Over time, the effects of oxidative stress may also contribute to the development of a variety of diseases:

[heart disease](#)

[diabetes](#)

[Parkinson's disease](#)

[Alzheimer's disease](#)

[cancer](#)

[eye disease](#)

Heart disease risk

Regularly eating dark chocolate may help reduce a person's likelihood of developing heart disease. Some of the compounds in dark chocolate, specifically flavanols, affect two major risk factors for heart disease: [high blood pressure](#) and high [cholesterol](#).

Blood pressure

The flavanols in dark chocolate stimulate nitric oxide production in the body. Nitric oxide causes blood vessels to dilate, or widen, which improves blood flow and lowers [blood pressure](#). A 2015 study investigated the effects of chocolate consumption in 60 people with [type 2 diabetes](#) and high blood pressure. The researchers found that participants who ate 25 grams (g) of dark chocolate daily for 8 weeks had significantly lower blood pressure than those who ate the same quantity of white chocolate. The findings of a 2017 review showed that the beneficial effects of dark chocolate on blood pressure might be more significant in older people and those with a higher risk of cardiovascular disease, as opposed to younger, healthy individuals.

Cholesterol

Dark chocolate also contains certain compounds, such as polyphenols and theobromine, that may lower levels of low-density lipoprotein (LDL) cholesterol in the body and increase levels of high-density lipoprotein (HDL) cholesterol. Doctors often refer to LDL cholesterol as "bad cholesterol" and HDL cholesterol as "good cholesterol." A [2017 study](#) reported that eating dark chocolate for 15 days raised HDL cholesterol levels in people living with [HIV](#). However, dark chocolate consumption did not affect LDL cholesterol levels in the study participants.

Anti-inflammatory effects

Eating dark chocolate may help reduce inflammation in the body.

[Inflammation](#) is part of the body's natural immune response to germs and other harmful substances. However, chronic inflammation can damage cells and tissues and may increase the risk of some health conditions, including type 2 diabetes, [arthritis](#), and certain types of cancer. Dark chocolate contains compounds with anti-inflammatory properties that may help reduce inflammation in the body. A [small pilot study from 2018](#) involving five healthy people examined the effects of dark chocolate on the immune system. The results suggested that consuming large amounts of 70-percent dark chocolate affects the activity of genes that regulate the immune response. However, it remains unclear how this study will be of practical significance. In another study from 2018, researchers found that eating 30 g of

84-percent dark chocolate each day for 8 weeks significantly reduced inflammatory biomarkers in people with type 2 diabetes. The authors of the study concluded that there is a need for additional studies to evaluate the optimal amounts of dark chocolate to use to treat those with diabetes.

Insulin resistance

Insulin resistance occurs when the body's cells stop responding to the hormone insulin. Insulin resistance can cause abnormally high levels of blood glucose, which can lead to prediabetes and type 2 diabetes. A 6-month study from 2018 examined the relationship between regular dark chocolate consumption and blood glucose levels. The research findings suggest that eating 48 g of 70-percent dark chocolate each day may help lower fasting glucose levels and reduce insulin resistance.

Brain function

Eating dark chocolate may improve brain function and help prevent neurodegenerative conditions, such as Alzheimer's disease and Parkinson's disease. The findings of a small 2018 study suggest that the flavanols present in dark chocolate may enhance neuroplasticity, which is the brain's ability to reorganize itself, particularly in response to injury and disease. A study from 2016 identified a positive association between regular chocolate consumption and cognitive performance. However, the researchers collected data from surveys and had to rely on self-reported chocolate intake, so they were unable to draw any definitive conclusions from the findings.

Nutritional information

Dark chocolate with 70–85 percent cocoa is a good source of magnesium, zinc, and iron.

A 101-g bar of dark chocolate with 70–85 percent cocoa solids provides: 604 calories, 7.87 g of protein, 43.06 g of fat, 46.36 g of carbohydrates, 11.00 g of dietary fiber, 24.23 g of sugar, 12.02 milligrams (mg) of iron, 230.00 mg of magnesium, and 3.34 mg of zinc.

Risks and considerations

The health benefits of dark chocolate come primarily from the flavanols present in the cacao solids. However, flavanol content varies among dark chocolate products. Processing methods also differ between manufacturers, and this can affect the flavanol content of the chocolate. There is no legal requirement for chocolate manufacturers to report the flavanol content in their products. However, dark chocolate products with a higher percentage of cacao solids should generally contain more flavanols. Although dark chocolate contains beneficial antioxidants and minerals, it is usually also high in sugar and fat, which makes it a very calorie-dense food. Dark chocolate contains fat in the form of cocoa butter, which mainly consists of unhealthful saturated fats. People should, therefore, try to limit their consumption of dark chocolate to avoid consuming too many calories, fats, and sugars. In general, dark chocolate contains less sugar than milk chocolate and white chocolate. Dark chocolate with higher percentages of cacao solids typically contains even less sugar. Sugar content varies among chocolate manufacturers, so it is advisable to check the nutrition label.

How much to eat?

Chocolate manufacturers do not have to report the flavanol content of their products. As a result, it is difficult to know how much dark chocolate a person would need to eat to maximize its health benefits. The studies in this article generally used 20–30 g of dark chocolate per day. Dark chocolate with higher percentages of cacao solids typically contains less sugar but more fat. More cacao also means more flavanols, so it is best to choose dark chocolate that includes at least 70 percent cacao solids.

Dark chocolate is a rich source of antioxidants and minerals, and it generally contains less sugar than milk chocolate.



Flourless Chocolate Cake

Cake

- 1 cup (170g) semisweet or bittersweet chocolate chips
- 1/2 cup (8 tablespoons, 113g) unsalted grass-fed butter
- 3/4 cup (149g) coconut sugar or fine raw sugar
- 1/4 teaspoon Himalayan pink salt
- 1 to 2 teaspoons espresso powder, optional
- 1 teaspoon vanilla extract, optional
- 3 large eggs
- 1/2 cup (43g) Dutch-process cocoa powder

Glaze

- 1 cup (170g) semisweet or bittersweet chocolate chips
- 1/2 cup (113g) heavy cream

1. Preheat the oven to 375°F. Lightly grease a metal 8" round cake pan; cut a piece of parchment to fit, grease it, and lay it in the bottom of the pan.
2. **To make the cake:** Put the chocolate and butter in a microwave-safe bowl, and heat until the butter is melted and the chips are soft. Stir until the chips melt, reheating briefly if necessary. You can also do this over a burner set at very low heat. Transfer the melted chocolate/butter to a mixing bowl.
3. Stir in the sugar, salt, espresso powder, and vanilla. Espresso enhances chocolate's flavor much as vanilla does; using 1 teaspoon will simply enhance the flavor, while 2 teaspoons will lend a hint of mocha to the cake.
4. Add the eggs, beating briefly until smooth. Add the cocoa powder, and mix just to combine.
5. Spoon the batter into the prepared pan.
6. Bake the cake for 25 minutes; the top will have formed a thin crust, and it should register at least 200°F on an instant-read thermometer inserted into its center.
7. Remove it from the oven, and cool it in the pan for 5 minutes.
8. Loosen the edges of the pan with a table knife and turn it out onto a serving plate. The top will now be on the bottom; that's fine. Also, the edges will crumble a bit, which is also fine. Allow the cake to cool completely before glazing.
9. **To make the glaze:** Place the chocolate in a heatproof bowl. Heat the cream until it's not quite at a simmer, but showing fine bubbles around the edge. Pour the cream over the chocolate, stir very briefly to combine, and let rest for 5 minutes. Stir again — at first slowly, then more vigorously — until the chocolate is completely melted and the glaze is smooth. If any bits of chocolate remain, reheat briefly in the microwave or over a burner, then stir until smooth.

Spoon the glaze over the cake, spreading it to drip over the sides a bit. Allow the glaze to set for several hours before serving the cake.