



# What are the health benefits of dark chocolate?



Medically reviewed by Sade Meeks, MS, RD, Nutrition — By Jamie Eske —  
Updated on March 6, 2023

[Nutritional information](#)   [Antioxidants](#)   [Heart disease risk](#)  
[Anti-inflammatory effects](#)   [Insulin resistance](#)   [Brain function](#)  
[Microbiome diversity](#)   [Risks and considerations](#)   [Portion size](#)  
[Summary](#)

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, 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.

In this article, we explore some of the potential health benefits of dark chocolate. We also cover nutritional information, risks and considerations, and how much to eat.



ADVERTISEMENT





Westend61/Getty Images

ADVERTISEMENT

## Nutritional information

According to the [United States Department of Agriculture](#)<sup>✓</sup>, a 101-gram (g) bar of dark chocolate with 70–85% 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
- 3.34 mg of zinc

## Dark chocolate health benefits

ADVERTISEMENT



chocolate product with a higher percentage of cocoa may have a larger amount of the nutrients that deliver its benefits.

These beneficial compounds can include:

- flavanols
- polyphenols
- theobromine

It is important to note that cocoa [loses](#) some of its polyphenol compounds as it is processed into cocoa butter, cocoa powder, and chocolate through the manufacturing processes. Processing cocoa not only reduces some of its most beneficial compounds but may also add sugar, milk, and cocoa butter, a processed form of the cocoa bean.

Cocoa has been associated with health benefits that [may include](#):

- reducing free radicals
- improving blood flow
- lowering blood pressure
- lowering “bad cholesterol”
- reducing inflammation
- reducing insulin resistance
- improving the brain’s ability to make new connections between neurons
- increasing microbiome diversity

## Antioxidants

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

ADVERTISEMENT



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, [such as](#) <sup>👤</sup>:

- [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](#).

We discuss the potential benefits of dark chocolate for these two risk factors and others below:

### 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 small [2015 study](#) <sup>👤</sup> 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 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](#) <sup>👤</sup> showed that the beneficial effects of dark

ADVERTISEMENT



## 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.”

[HDL cholesterol](#) helps reduce the total amount of cholesterol in the blood while LDL cholesterol can narrow blood vessels.

According to a [2017 randomized, controlled study](#) published in the *Journal of the American Heart Association*, adding almonds, dark chocolate, and cocoa to the typical American diet without exceeding caloric needs may reduce the risk of coronary heart disease. In combination, almonds and dark chocolate decreased the more damaging small, dense LDL particles in participants.

ADVERTISEMENT

## Anti-inflammatory effects

[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.

ADVERTISEMENT



A [2017 review of literature](#) published in *Frontiers in Immunology* suggests that eating chocolate may influence the gut microbiome and encourage anti-inflammatory activity. Keep in mind that most of these gut studies were performed on animals, and more human studies are needed.

In a small [study from 2018](#), researchers found that eating 30 g of 84% 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 among Hispanic individuals. The research findings suggest that eating 48 g of 70% 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

ADVERTISEMENT



chocolate intake, so they were unable to draw any definitive conclusions from the findings.

## Microbiome diversity

Eating dark chocolate may benefit the gut microbiome, which can aid digestion.

A [2022 South Korean study](#) published in *The Journal of Nutritional Biochemistry* found that eating dark chocolate was associated with increases in the diversity of the gut microbiome.

The results of their research also suggested that eating 85% dark chocolate may have a positive correlation with mood. The researchers attributed this benefit to the increased diversity of the microbiome, which can affect mood through the [gut-brain axis](#).

ADVERTISEMENT

## 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.

ADVERTISEMENT



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 unhealthy 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.

A recent article in [Consumer Reports](#) tested several popular dark chocolate products and found that many contain high levels of lead and cadmium. Since these substances occur naturally in cacao, removing them has been a challenge for chocolate manufacturers.

The report found that some of the safest dark chocolate in 2022 came from Ghirardelli, Mast, Taza, and Valrhona.

## 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

ADVERTISEMENT





## Summary

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

Some research suggests that dark chocolate may help lower the risk of heart disease, reduce inflammation and insulin resistance, increase the diversity of the gut microbiome, and improve brain function.

People interested in adding dark chocolate to their diet should keep in mind that it is high in fat and calories, so moderation is key.

Last medically reviewed on March 6, 2023

Diabetes   Heart Disease   Rheumatoid Arthritis   Nutrition / Diet

### How we reviewed this article:

 **SOURCES**

---

Share this article



---

### RELATED COVERAGE

## Iron-rich foods for vegetarians and vegans

Medically reviewed by [Katherine Marengo LDN, R.D.](#)

Iron is an essential nutrient. Many plant-based foods contain iron, including lentils, beans, tofu, and blackstrap molasses. Learn about thes...

ADVERTISEMENT



## Magnesium deficiency symptoms, causes, and treatments

Medically reviewed by [Alana Biggers, M.D., MPH](#)

Hypomagnesemia refers to low levels of magnesium in the blood, which indicates a deficiency. Learn more about the symptoms and treatments.

[READ MORE](#)

## How can I tell if I have low magnesium?

Medically reviewed by [Alana Biggers, M.D., MPH](#)

Early signs and symptoms of magnesium deficiency can include vomiting, loss of appetite, and tiredness. However, magnesium deficiency is rare,...

[READ MORE](#)

## All you need to know about zinc deficiency

Medically reviewed by [Natalie Olsen, R.D., L.D., ACSM EP-C](#)

A look at zinc deficiency, a condition where the body doesn't have

ADVERTISEMENT



READ MORE

# What are the symptoms of an iron deficiency?

Medically reviewed by [J. Keith Fisher, M.D](#)

Iron deficiency symptoms include fatigue, dizziness, and cold extremities. In this article, learn about other symptoms and getting an iron deficiency...

READ MORE



## Get our newsletter

Keep up with the ever-changing world of medical science with new and emerging developments in health.

 

Your [privacy](#) is important to us

[About Us](#)

[Health Topics](#)

[Contact Us](#)

[Health Hubs](#)

[Terms of Use](#)

[Medical Affairs](#)

ADVERTISEMENT



[Privacy Settings](#)

[Newsletters](#)

[Advertising Policy](#)

© 2023 Healthline Media UK Ltd, Brighton, UK. All rights reserved. MNT is the registered trade mark of Healthline Media. Any medical information published on this website is not intended as a substitute for informed medical advice and you should not take any action before consulting with a healthcare professional. [See additional information.](#)

[About](#) | [Careers](#) | [Advertise with us](#)

**OUR BRANDS**

[Healthline](#)

[Medical News Today](#)

[Greatist](#)

[Psych Central](#)

[Bezy](#)

ADVERTISEMENT



