

# Ginger Fights Obesity

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## STORY AT-A-GLANCE

- › Belonging to the same family as cardamom and turmeric, ginger is an ancient spice used for food and medicine in many parts of the world for centuries
- › Whole ginger extract has been found to have antiproliferative capabilities, especially against prostate cancer, meaning it inhibits cancer growth and helps induce death of cancerous cells
- › Ginger's most prominent bioactive ingredient, gingerol, has been found to burn body fat, inhibit nausea, decrease osteoarthritis pain and reduce atherosclerosis, while helping to prevent Type 2 diabetes and heart disease

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Known for making a warming, fragrant tea, its distinct essence in cookies and a delicious spiciness in soups and stir-fries, [ginger](#) is an ancient root also known for its medicinal qualities. It's already been well-established that it's good for you – it belongs to the same family as [cardamom](#) and [turmeric](#), after all – but research shows why it would be an excellent idea to add more ginger to your diet.

The Annals of the New York Academy of Sciences published a review showing ginger may protect against a wide range of chronic diseases, and focused primarily on how it affects metabolic syndrome, which is a condition that includes three or more of the most prevalent risk factors for [Type 2 diabetes](#) and [heart disease](#).<sup>1</sup> One of them is [obesity](#).

Metabolic syndrome comes in many forms, and the problem has gotten worse exponentially over the last several years, and continues to do so. Researchers all over the world have stepped up their scrutiny of ginger in terms of its ability to treat different aspects of this condition.

Researchers at China Agricultural University, where the featured review of 60 studies was conducted, scrutinizing humans, lab animals and cell cultures, wrote that **metabolic syndrome** is a "growing health problem that has reached pandemic proportions, as it now affects a quarter of the world's population," a Time article quoted.<sup>2</sup>

The good news is the long history of successes ginger has exerted in these and other ailments, particularly in the way it tackles body fat, is dramatic enough to offer hope, not only in its treatment, but in its prevention.

## More About the Root

Both Chinese and East India have used ginger root as a health tonic in different forms for at least 5,000 years. Imported to Rome from India, *Zingiber officinale* dropped from sight for a while after Rome fell. Then the Arabs became the purveyors of the spice trade, according to InDepthInfo:<sup>3</sup>

*"In the 15th century, ginger plants were carried on ships, which is probably how they were introduced to the Caribbean as well as Africa. Today ginger is grown throughout the tropics. It is only in recent years that ginger has become more valued as a spice than for its medicinal properties. Even so, in Western countries, it has been used to add taste to buttermilk drinks as far back as the 11th century AD."*

Fresh ginger looks a bit like a tiny brown cactus, but rather than growing above the ground, it's a rhizome, meaning it's a root that grows under the ground. It's when you peel or cut it that its pleasingly pungent, oddly sweet aroma becomes faintly, but nose-tingly, apparent. For the freshest flavor and health benefits, peeled, sliced ginger root is best, but organic powdered ginger is an acceptable alternative.

If refrigerated, ginger root can last up to a year, and when frozen, the roots will retain their flavor for about six months. When purchasing fresh ginger, make sure the root is firm and smooth. That's where ginger has been for the last few thousand years, but the important part of ginger's journey is what it does for you.

## **Ginger's Amazing Advantages for Obesity, Metabolic Syndrome**

Scientists are well aware of the amazing benefits ginger provides, and not just because of all the traditional remedies it's provided for diseases and disorders throughout the eons, all over the world. Many of those uses have been proven clinically sound in lab and hospital studies.

A book titled "The Amazing and Mighty Ginger"<sup>4</sup> shows that the root's most prominent bioactive ingredient is gingerol (along with a lesser compound called [shogaol](#)) but while this is where the spicy aroma comes from, gingerol is also known as both an anti-inflammatory and antioxidant with the power to combat cancer.

The most frequent references for ginger, medically speaking, have come from the relief it offers for people experiencing nausea, whether from seasickness, [chemotherapy](#) or pregnancy, and without any adverse side effects. The China Agricultural University study authors wrote:<sup>5</sup>

*"Interest in ginger as an anticancer agent has markedly increased over the last few years and a direct protein target has been identified in colon cancer. Ginger also appears to ... improve lipid metabolism, thereby helping to decrease the risk of cardiovascular disease and diabetes."*

Ginger's effectiveness as a "fat burner" has become a frequent and fascinating topic of discussion, both in gyms and hospitals, and one of the reasons is that it's not just one mechanism that allows it to take place. Carbohydrate digestion and insulin secretion are two more terms that hint at the way ginger works.

Its role in reducing oxidative stress, which takes a toll on your cells and hastens the aging process, can no doubt be put, at least partially, to ginger's antioxidant strength.

This helps **lower your blood pressure** and optimize cholesterol, and may even help reduce stiffening of arteries and fat buildup in your arteries, known as atherosclerosis.

## **Studies on Ginger for Digestion and Other Benefits**

Animal (rats) and test-tube studies have indicated that ginger "significantly" reduces systematic inflammation, body weight and blood sugar, which helps protect against another serious "umbrella" illness called nonalcoholic fatty liver disease (NAFLD), suffered by up to 24% of U.S. adults, one study reported.<sup>6</sup>

The Time article mentioned that a lack of funding and the intricacies of all the compounds combined may be reasons why not many scientists tackled ginger as a study topic before the Chinese study emerged, and 10 clinical trials on how ginger affects metabolic syndrome helped bring them to their conclusions.

Ginger may enhance calorie burn, they noted, while reducing feelings of hunger. Further, it's also been implicated in weight loss in overweight adults, along with "positive changes in cholesterol, blood sugar, blood pressure, inflammatory proteins and liver health."<sup>7</sup>

Whole ginger extract has been found to have antiproliferative capabilities, especially in prostate cancer, which means it helps inhibit cancer growth and induce death of many different prostate cancer cells, driving "mitochondrially mediated apoptosis," or programmed cell death, and decreasing the size of tumors without disturbing normal tissues.<sup>8</sup>

The University of Maryland Medical Center<sup>9</sup> noted that ginger has successfully helped treat pain and discomfort in several other conditions, along with other benefits, including:

Reduced pain from  
osteoarthritis

Lowered risk of the  
common cold

Optimized cholesterol

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Lowered oxidative stress	Relieved headaches	Reduced atherosclerosis
Possible benefits for heart disease	Blood clotting prevention	Improved blood sugar

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Ginger supplementation has also been a topic of discussion, but although tablets, capsules and powders to dissolve in liquid have been made available, Columbia University associate professor of nutritional medicine Marie-Pierre St-Onge believes that while potential benefits look promising, scientists aren't sure about dosages.

As far as the root is concerned, it can be used either fresh or dried, as a steam distillation of the root's oil, as well as in many forms of extracts and tinctures. One study showed that regular supplementation consisting of 2 grams of ginger powder daily for<sup>10</sup> three months resulted in a dramatic drop in fasting blood sugar in adults.

## Ginger in Light of Epigenetics

Epigenetic research has revealed several of the already-discussed aspects of ginger, which is potent enough to impact chromatin and regulate epigenetic mechanisms, especially histone acetylation, the process an acetyl group undergoes to transfer molecules, which can affect how genes are regulated.

Age, your environment, lifestyle and general health can all influence [epigenetics](#), which is why it's under such intense scientific scrutiny lately. What Is Epigenetics<sup>11</sup> explains:

*"Ginger is considered a powerful herb with the ability to impact chromatin in a cell's nucleus and regulate epigenetic mechanisms, particularly histone acetylation. Where acetylation is the process by which an acetyl group is transferred from one molecule to another, ginger – and similar herbs like turmeric, tulsi and cinnamon – are proving to exert influence on gene regulation."*

One study<sup>12</sup> reported ginger's ability to increase histone H3 acetylation and suppress the expression of histone deacetylase 1 (HDAC1). What Is Epigenetics adds:

*"Histone acetylation removes the positive charge of histones and ultimately relaxes the structure of tightknit chromatin, leading to increased transcription – the first step in gene expression where a particular strand of DNA is copied into RNA. The enzymes which remove an acetyl mark are known as HDACs.*

*When an individual consumes health foods like ginger, these epigenetic tags attached to histone proteins around which the DNA is wrapped can be adjusted, influencing the expression of genes linked to inflammatory and neuroprotective pathways."*

Fresh or cooked ginger is the only place you'll find either gingerol or shogaol. Both are absorbed quickly and serve to "increase gastric tone and motility," as well as help your intestinal muscles relax so built-up gas can be released.

## **Ginger Preparations for Health and a Healthy Weight**

Slivers of ginger root can be peeled off to make a "ginger shot," which consists of a little added lemon juice, orange juice and turmeric, said to increase your digestion and – due to its thermogenic properties – promote a healthier metabolism and gut function. Fire tea, made with ginger and cinnamon together, can help fight fat. These two spices contain a host of health benefits by themselves, but together they can help keep your weight where you want it.

Cinnamon helps maintain your blood sugar and encourages your body to store less fat, and ginger helps boost your digestion. Try drinking it right after a meal.

### **Fire Tea**

#### **Ingredients**

- 2 cinnamon sticks (or 1 teaspoon of ground cinnamon)
- 3 or 4 slices of fresh ginger (or 1 tablespoon grated)
- Honey or maple syrup for natural sweetness
- 1/2 gallon of pure water

### Procedure

Boil ginger and one cinnamon stick together in approximately one-half gallon of water for 20 minutes to help the ingredients blend together. Strain straight into your cup with a mesh strainer and add a bit of honey or maple syrup for sweetness, if you desire.

## Sources and References

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- <sup>1</sup> [Annals of the New York Academy of Sciences May 15, 2017](#)
- <sup>2, 7</sup> [Time May 25, 2017](#)
- <sup>3</sup> [InDepthInfo, Ginger History \(Archived\)](#)
- <sup>4, 5</sup> [The Amazing and Mighty Ginger, Herbal Medicine: Biomolecular and Clinical Aspects. 2nd edition, 2011](#)
- <sup>6</sup> [National Institute of Diabetes and Digestive and Kidney Diseases November 2016](#)
- <sup>8</sup> [Br J Nutr. 2012 February;107\(4\):473-84](#)
- <sup>9</sup> [University of Maryland Medical Center, Ginger \(Archived\)](#)
- <sup>10</sup> [Iran J Pharm Res. 2015 Winter;14\(1\):131-140](#)
- <sup>11</sup> [What Is Epigenetics May 2, 2017](#)
- <sup>12</sup> [Food Chem Toxicol. 2011 November;49\(11\):2734-40](#)