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Cloves Benefits: How This Spice Supports Immunity, Digestion & More

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Along with cinnamon, allspice and nutmeg, the clove is a spice with a distinctly pungent flavor that gives “pumpkin pie spice” and goodies like gingerbread cookies their signature taste. Beyond reminding us of autumn and winter holidays, cloves also have nutritional value.

For example, cloves benefits include:

- fighting inflammation and infections
- numbing pain
- supporting metabolic and digestive health

Cloves are indigenous to the Middle East and have long been used in Indian Ayurvedic medicine and Chinese medicine for their supposed aphrodisiac properties and ability to treat headaches and indigestion.

These little bulbs are considered to have warming, stimulating and cleansing effects, and they can be utilized in a variety of ways — such as in cooking, as an extract, in herbal tea or in essential oil form.

Cloves Benefits

The small, round spice that we know of as clove is actually tiny flower buds grown on the evergreen tree with the species name *Syzygium aromaticum*.

Can you eat cloves? Yes, which is why in small amounts they are typically ground and added to dishes like fall-inspired baked goods — such as gingerbread cookies, mulled wine and marinades for meats.

According to Spruce Eats, “Clove flower buds are harvested in their immature state and then dried. Whole cloves are shaped like a small, reddish-brown spike, usually around 1 centimeter in length, with a bulbous top.”

Today, cloves are mostly grown in India and Madagascar. In addition to being used a warm and aromatic culinary spice, it’s also the source of clove oil, which is a concentrated essential oil that is high in volatile compounds and antioxidants.

Cloves are rich in antioxidants, especially the type called eugenol, which is a phenolic compound that can reduce oxidative stress. This compound is present in concentrations of 80%–90% in clove bud oil and at 82%–88% in clove leaf oil.

Other bioactive compounds isolated from clove extracts include flavonoids, thymol, benzene and methylene chloride.

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Studies have found that with its ability to fight free radical damage, eugenol may especially help defend against the development of chronic diseases and may help promote healthy aging.

Cloves benefits include some of the following:

1. Support immune function and fight infections

In addition to fighting inflammation and acting as an antioxidant, eugenol also acts as a natural germicide due to its antimicrobial properties. This makes it similar to raw garlic, another type of bulb that contains immune-boosting compounds, such as allicin, that fight bacteria growth.

Clove also contains other compounds that have similar effects. For example, cloves can help prevent proliferation of certain harmful microbes that may cause oral or gastrointestinal infections and

diseases.

Additionally, research has shown that clove buds have immunostimulatory activities that can help promote immune response mechanisms.

Clove extract and oil are even sometimes used in food preservation because they can help keep growth of bacteria, including listeria, *Pseudomonas aeruginosa*, *Salmonella*, *Streptococcus* and *Staphylococcus*, under control. These can contribute to food poisoning.

Clove is also popular around the world in dentistry since it fights formation of gum disease.

2. Provide pain relief and analgesic effects

Clove, and especially clove oil, has long been used in dental care due to its natural analgesic and anti-inflammatory properties, as well as its antiseptic and antibacterial effects.

It can help dull aches, reduce swelling and provide relief from discomfort among people with toothaches, skin breakouts, headaches and sometimes other conditions. It can also help prevent plaque from forming on teeth, which may cause painful cavities.

3. Help stabilize blood sugar levels

Clove extract, which is rich in polyphenolic compounds that support metabolic health, has been shown in some studies to help adults maintain normal blood sugar (glucose) levels.

One pilot study demonstrated that clove extract lowered pre- and post-prandial blood glucose levels in both healthy and prediabetic volunteers. It's believed that clove's essential oils, which are rich in

eugenol and acetyl eugenol, help positively modulate pathways involved in glucose homeostasis, which can lower the risk for type 2 diabetes.

4. Promote digestive health

Cloves may aid digestion and promote gut health by reducing inflammation and supporting the balance of gut bacteria. Their antimicrobial properties can help protect against digestive infections.

Cloves also may help protect the stomach lining and reduce the risk of ulcers. They have been used in traditional medicine to treat digestive issues, and some animal studies suggest that cloves can increase the production of gastric mucus, which protects the stomach lining.

Cloves contain compounds that have been shown to protect against formation of stomach ulcers in animal models, such as by increasing production of gastric mucus that helps prevent erosion of the stomach lining. At least one study has even found that clove can have similar effects as several anti-ulcer medications.

In extract form, clove can also contribute to healthy liver function by decreasing inflammation and oxidative stress and potentially helping prevent liver damage and scarring.

5. High in antioxidants and important nutrients

Cloves are rich in antioxidants, particularly eugenol, which can help reduce oxidative stress and may lower the risk of chronic diseases. They contain significant amounts of polyphenols, which are known for their antioxidant properties.

Cloves rank high in antioxidant activity among spices and are even more potent than many fruits and vegetables.

6. May improve liver health

Cloves may support liver health due to their antioxidant properties. Eugenol, a compound found in cloves, has been shown to improve liver function and reduce inflammation.

In fact, a model conducted on rats found that “eugenol lowers serum cholesterol levels and inhibits lipogenesis in the liver.”

However, it is important to note that high doses of eugenol can be toxic, and more human studies are needed to confirm these benefits.

7. Help protect against cancer

Cloves have been studied for their potential anti-cancer properties and has been found to “induce apoptosis and work in various cancer cells.” Eugenol has been shown to promote cell death in cancer cells and inhibit tumor growth in animal studies.

The high antioxidant content of cloves may also contribute to their cancer-protective effects.

8. Kill bacteria

Cloves have antibacterial properties that can help kill harmful bacteria. Eugenol is particularly effective against bacteria that cause oral diseases, and clove oil has been used in mouthwashes to reduce bacteria and improve oral health.

9. May promote bone health

Cloves contain manganese, which is essential for bone health. While cloves alone are not a significant source of nutrients due to the small quantities typically consumed, they can contribute to overall nutrient intake when included in a balanced diet.

10. Support oral health and prevent gum disease

Clove oil has been used in traditional medicine to maintain oral health. It helps reduce plaque, gingivitis and bacteria in the mouth, making it a natural remedy for oral health issues.

11. May combat obesity

Studies on animals have shown that clove extract can reduce body weight and fat accumulation. This suggests potential benefits for weight management, although more research is needed to confirm these effects in humans.

12. Relieve itchy skin

Clove oil is known for its soothing properties and can be used topically to relieve itchy skin. However, it should be used with caution as it can cause irritation in some individuals.

13. May improve breathing

Clove oil's anti-inflammatory properties may help improve respiratory health by reducing inflammation in the airways, although specific studies are limited.

14. Suppress cough

Cloves have traditionally been used to relieve coughs due to their soothing and anti-inflammatory properties. They can be used in teas or other home remedies for this purpose.

15. May ease effects of aging

The antioxidants in cloves may help combat oxidative stress, which is associated with aging and age-related diseases. This can potentially ease some effects of aging.

What are the health benefits of clove tea?

Clove tea, which is made by steeping the bulbs in hot water, has many of the same anti-inflammatory compounds that clove spice has. Consuming it regularly may help reduce sore throats, cold and cough symptoms, and potentially digestive issues.

While it hasn't been proven to help with weight loss, some people also drink clove tea for this purpose — and because it can ease bloating and water retention.

Risks and Side Effects

When consumed in small amounts in food, clove is generally well-tolerated and safe for most people, assuming they don't have an allergy to the spice. However, clove oil should be handled with more caution, especially if using it internally.

Clove oil should only be ingested in very small amounts, since it can trigger side effects if over-consumed.

What are the side effects of cloves? Consuming clove oil has the potential to cause indigestion and other digestive issues, burning sensations, and possibly liver damage.

When applied topically it can also cause skin rashes, burning and tingling, so use with caution.

Clove oil and extracts are not recommended for women who are pregnant or breastfeeding, due to a lack of research.

People who are taking medications to control diabetes, hypoglycemia or bleeding disorders should only use clove products under supervision from a doctor, since eugenol can affect blood clotting and blood sugar levels.

Uses (Dosage/Recipes)

What does clove taste like? Due to the presence of eugenol, it has a pungent taste.

You'll likely detect notes of sweetness, bitterness, astringency (drying the mouth) and also heat.

For culinary purposes, cloves can be used either whole (such as in marinades) or ground in spice form.

Pick out the clove bulbs before serving recipes, since they have a woody texture and very strong taste that is usually off-putting when consumed whole.

If using bulbs to make ground cloves, use a spice grinder, mortar and pestle or a clean coffee grinder. Use one teaspoon of whole cloves in place of 3/4 teaspoon of ground cloves.

Clove uses include adding a warm and distinctive flavor to:

- baked goods and desserts, like like cookies, muffins and cakes, especially those that are holiday-inspired and use "pumpkin pie spice"
- pot roasts and other meat dishes

- hot beverages, like spiced lattes, chai tea, mulled wine and cider
- Indian dishes, including curries, biryani dishes or chutneys (cloves are one spice used in garam masala)
- rice dishes
- clove tea, which can be made at home by simmering about one tablespoon of whole cloves in boiling water for 3 to 5 minutes

What are some cloves substitutes?

The best substitutes include other, similar warm spices like nutmeg, cinnamon and allspice. Together, these spices are used in many of the same recipes, and they are the ingredients in pumpkin pie blends.

Overall, cloves are described as being “more powerful” in terms of flavor than similar spices, so only use a very small amount to keep the flavor from being overwhelming.

How much clove is safe to consume?

- In ground spice form, up to one teaspoon at a time, such as once daily, seems to be safe.
- If using clove for dental health, look for mouthwashes and toothpastes with 1% to 5% clove essential oil.
- If using clove extract, read directions carefully, since concentrations vary from product to product.
- Generally speaking, avoid ingesting clove oil unless you’ve gotten permission from a doctor. If you do ingest it, make sure to dilute it with another oil, such as olive oil, and to only consume 1–2 drops.

To keep ground clove or clove buds fresh, store them in an air-tight container at room temperature. Whole buds will remain fresh longer than finely ground powder.

Nutrition Facts

When used as a ground spice, cloves contains very little calories but provide antioxidants and some essential vitamins and minerals, especially manganese — which is important for bone building, managing inflammation and regulating blood sugar.

Because of its strong taste, it's often used only in small amounts in cooking, but for even more powerful effects clove oil and clove extract can be consumed.

A one-teaspoon serving of ground cloves (about 2.1 grams) contains approximately:

- Calories: 5.8
- Total Carbohydrates: 1.4 g
- Fiber: 1 g
- Sugar: 0.1 g
- Total Fat: 0.3 g
- Saturated Fat: 0.1 g
- Polyunsaturated Fat: 0.1 g
- Monounsaturated Fat: 0.03 g
- Protein: 0.1 g
- Sodium: 5.8 mg (<1% DV*)
- Manganese: 1.3 mg (57%–72% DV)
- Vitamin K: 3 mcg (3% DV)

*Daily Value: Percentages are based on a diet of 2,000 calories a day.

Conclusion

- Cloves are a warm spice sourced from flower buds of the evergreen plant *Syzygium aromaticum*.
- These buds are high in antioxidants, including eugenol, as well as essential oils that have natural anti-inflammatory, antibacterial and antiviral properties.
- Potential clove benefits include supporting oral health, fighting infections, prompting better metabolic health, and aiding in liver and digestive health.
- You can consume clove as a ground spice, use the whole buds in marinades and herbal teas, or use clove oil or extract.
- Be careful about applying this oil to your skin or taking it internally. It may cause burning, tingling and other reactions in some cases.

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