

Health benefits and risks of onions

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Onions are part of the allium family of vegetables and herbs, which also includes chives, garlic, scallions, and leeks. Allium vegetables have been cultivated for centuries for their characteristic, pungent flavors and for their medicinal properties.

Onions can vary in size, shape, color, and flavor. The most common types are red, yellow, and white onions. Flavors can be sweet and juicy to sharp, spicy, and pungent, often depending on the season in which they are grown and consumed.

It is estimated that 105 billion pounds of onions are harvested each year, worldwide. According to the Food and Agriculture Organization of the United Nations (FAO), China is the biggest producer.

The possible health benefits of consuming onions include lowering the risk of several types of cancer, improving mood, and maintaining the health of skin and hair.

Fast facts on onions:

- Onions have been used as food for thousands of years; in ancient Egypt, they were worshiped and used in burial rituals.

- Onions have many possible health benefits including reducing the risk of obesity, heart disease, and cancer.
- They are high in vitamins, minerals, and antioxidants.
- Incorporating onions into a diet is very simple, with a versatile range of ways they can be prepared and cooked in regular foods.

Benefits

Consuming fruits and vegetables of all kinds has long been associated with a reduced risk of many lifestyle-related health conditions.

Many studies have suggested that increasing consumption of plant foods like onions decreases the risk of overall mortality, diabetes, and heart disease.

Plant foods also promote a healthful complexion, hair, increased energy, and overall lower weight.



Onions have been praised for their flavor and health benefits for thousands of years.

Cancer

Allium vegetables have been studied extensively in relation to cancer, especially stomach and colorectal cancers. Their beneficial and preventive effects are likely due in part to their rich organosulfur compounds.

The exact mechanism by which these compounds inhibit cancer is unknown, but hypotheses include the inhibition of tumor growth and mutagenesis, and prevention of free radical formation. Onions are also a source of the strong antioxidant vitamin C that helps to combat the formation of free radicals known to cause cancer.

Colon cancer

High fiber intake from all fruits and vegetables are associated with a lowered risk of colorectal cancer. One study showed that consuming greater than 7 servings of onions per week was associated with a decrease in colorectal cancer.

Prostate cancer

In a paper, published by the *Journal of the National Cancer Institute*, researchers used a population-based, case-controlled study to investigate the relationship between allium vegetable intake and prostate cancer. They found that men with the highest intake of allium vegetables had the lowest risk of prostate cancer.

Esophageal and stomach cancer

Frequent intake of allium vegetables has been shown to reduce the risk of esophageal and stomach cancer. Several survey-based human studies have demonstrated the potential protective effects of consuming alliums, as well as reports of tumor inhibition of allium compounds in animal experiments.

Sleep and mood

Folate, found in onions, might help reduce depression. Homocysteine prevents blood and other nutrients from reaching the brain, and folate prevents this chemical from building up. Excess homocysteine also interferes with the production of the feel-good hormones serotonin, dopamine, and norepinephrine, which regulate not only mood, but also sleep and appetite.

Skin and hair

Onions are high in vitamin C, which is needed for the building and maintenance of collagen, which provides structure to skin and hair.

Nutrition

Onions are a nutrient-dense food, meaning that while they are low in calories, they are high in beneficial nutrients like vitamins, minerals, and antioxidants.

One cup of chopped onion contains approximately 64 calories, 15 grams of carbohydrate, 0 grams of fat, 0 grams of cholesterol, 3 grams of fiber, 7 grams of sugar, 2 grams of protein, and 10 percent or more of the daily value for vitamin C, vitamin B-6, and manganese.

Onions also contain small amounts of calcium, iron, folate, magnesium, phosphorus, and potassium, and the antioxidants quercetin and sulfur.

Risks

The risks of onion consumption are minimal. However, as with all food that may otherwise be healthful, overconsumption comes with potential health risks. Allergy sufferers may have a problem consuming onions, too.

It is the total diet or overall eating pattern that is most important in disease prevention and achieving good health. It is best to eat a diet with variety than to concentrate on individual foods as the key to good health.

Onions in the diet

Look for onions that are dry and firm with little to no scent before they are peeled.

Adding onion is a great way to add flavor to a dish without adding extra calories, fat, or sodium.

They are a staple in many kitchens and pair well with most dishes. They can be chopped and used fresh as a topping for sandwiches



or salads and added to salsas and dips.

Onions can be sautéed, roasted, grilled, or caramelized, be used fresh as a topping for sandwiches or salads and added to salsas and dips.

Recipes that include onions as a primary ingredient include:

- French onion soup
- onion bhaji
- blooming onions

They can be sautéed, roasted, grilled, or caramelized.

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Onions and tears in the eyes

Onions are known to make you cry when chopping or cutting them. This is due to the presence of a gas called *syn*-Propanethial-S-oxide.

It is a compound liquid that acts as what is called a lachrymatory agent - something that causes tears or stings the eyes.

A study published in *Nature* proposed that it might be possible "to develop a non-lachrymatory onion by suppressing the lachrymatory factor synthase gene while increasing the yield of thiosulphinate.

Thiosulphinate is responsible for the flavour of fresh onion and is converted to compounds that are said to have hypolipodaemic and antiplatelet aggregation effects.

Although downregulating alliinase itself would also lead to a non-lachrymatory onion, its flavour and nutritional value might be compromised."

There are a few ways to help avoid onion tears, these include:

- Cutting onions in a small pool of water, this can help keep the gases from making contact with your eyes.
- Using an extractor fan, exhaust hood, or even just opening a window for a fresh source of air can prevent the compounds from irritating the eyes.
- Cutting the onion near running water, or a cloud of steam.

Seeing as an onion that doesn't make you cry might not taste so good, it is probably best to just cope with the potential tears while chopping onions as they usually do no harm.

References

Additional information

Article last updated by Yvette Brazier on Tue 19 December 2017.

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