Apple cider vinegar for beauty and health: scientific facts about the benefits, harms and intake for weight loss

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Abstract. The article discusses the main properties of apple cider vinegar and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The chemical composition and nutritional value of the product are indicated, the use of apple cider vinegar in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of apple cider vinegar on the human body under certain medical conditions and diseases are analyzed separately.

Key words: apple cider vinegar, beneficial properties, contraindications, composition, calorie content

It is a popular disinfectant and natural preservative best known for its weight loss and blood sugar-lowering properties. It has antimicrobial and antioxidant properties, lowers cholesterol, increases satiety, and reduces calorie intake. We explain how apple cider vinegar is useful, how it helps to lose weight, which of its benefits are confirmed and not yet proven by science. And also list the side effects that it can cause.

The calorie content of natural apple cider vinegar is low and it does not interfere with losing weight - 100 g contains about 21 kcal. Although it does not contain many vitamins, it does have 73 mg of potassium and a small amount of other minerals such as calcium, magnesium , phosphorus. Depending on the production, the liquid may contain amino acids and antioxidants. It also contains beneficial bacteria, lactic, citric and malic acids, which contribute to the tart taste. Acetic acid provides a pH of 1-3 and benefits. [one]

Top 5 Benefits of Apple Cider Vinegar for Women's and Men's Health

1. Kills pathogens, including bacteria and viruses

Acetic acid neutralizes bacteria and prevents their reproduction. This has made it a popular remedy for ear infections, nail fungus, warts, and lice. Studies show that it is no less effective in fighting intestinal infections - it reduces the number of certain bacteria by 90-95%. This preservative also prevents quick spoilage of food and can be used to wash vegetables and fruits before eating. [2, 3, 4, 5, 6]

2. Lowers Blood Sugar and Fights Diabetes

The acidic solution improves the body's insulin sensitivity by 19-34% when taken before or with a high carbohydrate meal. This happens thanks to acetic acid - it blocks the enzymes that are necessary for the digestion of starch, and reduces the jump in blood sugar after eating starchy foods (by 31.4% after eating 50 g of white bread). [7, 8, 9]

3. Suppresses appetite, hunger and helps to lose weight

Apple cider vinegar promotes fat loss in several ways: reduces fat storage, accelerates fat burning, reduces appetite, and improves insulin response. According to research, taking vinegar with a high-carbohydrate meal increases satiety and people consume 200-300 fewer calories throughout the day. Daily use of 1 tbsp. l. leads to a loss of 1.2 kg, and 2 tbsp. l. - to the loss of 1.7 kg. [10, 11]

4. Improves Heart Health

Animal studies have shown that the product reduces the concentration of triglycerides and cholesterol in the blood, which impair blood flow and provoke heart disease. In addition, vinegar can lower blood pressure by blocking an enzyme that narrows blood vessels. It also lowers blood pressure, reducing the risk of heart disease and kidney problems. [12, 13, 14, 15, 16]

5. Restores ovulatory function in polycystic ovary syndrome

Polycystic ovary syndrome (PCOS) is a hormonal disorder that causes high levels of male hormones in women, ovarian cysts, menstrual irregularities, and insulin resistance. Women drinking a glass of water with two tablespoons of vinegar after meals improves hormonal levels and normalizes menstruation, which was confirmed by a three-month study. [17]

Harmful properties of apple cider vinegar

People with ulcers, hiatal hernia, low blood potassium levels, and certain gastrointestinal disorders are best off avoiding acidic fluids. For the rest of the people, a small amount of acetic acid is good for health, but excessive consumption causes adverse side effects:

- slows down the absorption of nutrients into the bloodstream and emptying the stomach - food lingers in it for too long (especially dangerous with gastroparesis); [eighteen]
- provokes nausea, diarrhea; [19]
- leads to the rapid removal of minerals from the bones, their fragility and osteoporosis;
- causes erosion of tooth enamel, its thinning; [20, 21]
- leads to burns of the throat, esophagus. [22, 23]

Some medicines can interact with acetic acid, either increasing or decreasing their effect. This list includes drugs for diabetics and heart problems, including insulin, diuretics, and supplements to lower blood potassium.

Optimal Daily Dosage: How much apple cider vinegar is safe to drink each day?

Since the product is not a drug, there are no official recommendations for its use. It is harmless to most people in daily doses up to 1-2 tbsp. l., diluted in a glass of water. To get positive effects, it is enough to drink such a drink 30 minutes before a meal. After using it, it is advisable to rinse your mouth with clean water to protect your teeth from damage.

There is no scientific evidence that eating a product in the morning is more beneficial than in the evening or at any other time of the day. Unfortunately, there is no evidence of benefit from its long-term daily use. [24, 25]

How to use apple cider vinegar correctly to avoid side effects?

A healthy liquid is obtained by fermenting apple sugar - crushed fresh apples are combined with yeast so that the sugars turn into alcohol. The addition of bacteria further ferments the alcohol and converts it to acetic acid. Its concentration in the liquid usually does not exceed 5–6%. The active ingredient gives it a sour smell, taste and all the beneficial properties.

Organic unfiltered apple cider vinegar contains enzymes, strands of proteins, and beneficial bacteria. They form a precipitate, make the solution cloudy. At the moment, there is not enough research to state that such a liquid is more beneficial than filtered. The product is also available in the form of nutritional supplements - capsules, chewing gums.

The best way to include natural vinegar in your diet is to use it in cooking. It can be a great addition to marinades, salad dressings, homemade mayonnaise, sauces, vinaigrettes. If you plan to drink it yourself, be sure to dilute it with water and check the taste - the drink should not be too sour.

Expert comment

Tatyana Eliseeva, nutritionist

Some people have had success using apple cider vinegar to treat skin and scalp problems. But so far, there is no reliable scientific evidence to support its effectiveness. If you plan on using it for any health purpose, keep an eye on the amount and be careful how you take it. It is unlikely to reduce the waist with improper nutrition, but it will definitely benefit the heart and other organs with a healthy diet and increased physical activity.

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