

# Journal of Healthy Nutrition and Dietetics

## In issue:



Almond  
milk



Apple  
vinegar



Sesame  
milk

## Juices:



Beetroot



Apricot



Peach



Pomegranate



Apple



Pear



Plum



Grape

## Minerals:

- Bromine (Br)
- Vanadium (V)
- Arsenic (As)



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## Almond milk: unique benefits and warnings from scientists

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* eliseeva.t@edaplus.info

**Abstract.** The article discusses the main properties of almond milk 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 drink are indicated, the use of almond milk in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of almond milk on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* almond milk , useful properties, contraindications, composition, calorie content

This is the most popular plant based milk. Many people find it tastier and healthier than other plant-based drink options and add it to coffee, oatmeal, and baked goods. The product is low-calorie, lactose-free, gluten-free and is an excellent choice for people who are trying to lose weight, practice veganism, suffer from lactase deficiency or allergies to cow's milk protein. We tell the whole truth about its nutritional value and shortcomings.

Unsweetened almond milk is typically 15-20 calories per 100 grams. It has half the calories of skimmed cow's milk, but the CBF can vary based on the amount of almonds per serving. 100 g contains a lot of flavonoids, as well as 22% of the daily value of vitamin E and 12% of calcium. Vegans and anyone on a plant-based diet should choose a drink fortified with vitamin D and other beneficial substances. <sup>[1, 2, 3, 4]</sup>

### Top 5 health benefits of almond milk for men, women and children over a year old

#### 1. Strengthens bones

A commercially produced drink can be as nutritious as cow's milk - contain a lot of calcium, [vitamin D](#). Your body cannot manufacture these components on its own, so it is important to consume them through your diet. They are necessary to maintain bones, the optimal level of blood pressure. The drink enriched with micronutrients reduces the risk of fractures, osteoporosis. <sup>[5, 6, 7]</sup>

## **2. Does not harm people with chronic kidney disease**

Almond milk can replace traditional dairy products for people with chronic kidney disease (CKD). The disease forces them to abandon cow's milk because of the content of phosphorus and potassium - diseased kidneys contribute to their accumulation and excess in the blood. 100 g of a traditional drink contains approximately 100 mg of phosphorus and 150 mg of potassium, while the same serving of almond contains almost three times less (30 and 60 mg, respectively). <sup>[8, 9]</sup>

## **3. Maintains healthy skin**

Frequent consumption of dairy products can provoke acne. If you have acne and breakouts, it is safer to drink almond milk. It does not contain lactose and  $\beta$ -casein A1, but it does contain vitamin E, a powerful antioxidant that protects the skin and the entire body from free radicals. <sup>[10, 11]</sup>

## **4. Good for the heart**

Plant foods reduce the risk of obesity, heart disease, and type 2 diabetes. A low-fat diet filled with whole foods, vegetables, and fruits lowers total cholesterol and glycated hemoglobin, which determines blood sugar levels. Therefore, almond milk not only expands the vegetarian diet, but also keeps the heart healthy. <sup>[12, 13]</sup>

## **5. Helps Lose and Maintain Weight**

An unsweetened drink contains few carbohydrates - 0.3 g per 100 g. Most of them are dietary fiber. The same amount of cow's milk contains approximately 4.5 g of carbohydrates in the form of lactose. The use of a plant product benefits weight loss and diabetics who need to monitor the amount of carbohydrates in the diet. <sup>[14, 15, 16]</sup>

## **Who is not suitable for almond milk: disadvantages and contraindications**

A lactose-free drink has a number of disadvantages, it is not suitable for everyone and, if abused, causes side effects:

- contains little protein - 1 g per glass, which is not enough for muscle growth, hormone production and skin regeneration;
- does not have natural sweetness, like traditional products, so many manufacturers add sugar, flavorings to it; <sup>[17]</sup>
- the minerals contained in it can be poorly absorbed due to phytic acid - a substance that blocks the absorption of iron, zinc, magnesium;
- not suitable for infants - creates a risk of nutritional deficiencies for children under one year old, does not replace breast milk and formula;
- dangerous for people with nut allergies;
- may contain the thickener carrageenan, which is harmful to the gastrointestinal tract, which is used by many manufacturers;
- excessive consumption provokes digestive problems - stomach discomfort, nausea, diarrhea;
- considered a goitrogenic product - people with reduced thyroid function should refuse it or drink it in moderation.

Abuse of a healthy drink eliminates its benefits and can even worsen health

### **How much almond milk is good to drink?**

If you eat a balanced diet with plenty of calcium and vitamin D, you don't need to add the drink to your regular diet. However, it can become part of a healthy diet and change your eating habits for the better.

Children over 12 months of age may take several tablespoons of the product between meals. Adults can drink a glass of the drink daily at any time of the day. It is especially useful in the evening, as it contains magnesium and tryptophan, which help to fall asleep, promote better sleep.

### **Where to buy, how to cook and drink almond milk?**

The drink can be found in most supermarkets, where it is available neat, with added sugar and different flavors such as vanilla, chocolate. However, a commercial drink may be too dilute and provide little benefit. Manufacturers compensate for this deficiency by adding vitamin D, [calcium](#) and other nutrients necessary for the body.

Many people have learned to cook it themselves at home. To make two cups of almond milk, all you need is almonds and water:

- soak 1/2 cup (65 g) raw almonds for 8-12 hours or overnight;
- combine the soaked almonds with 2 cups (470 ml) of water and beat with a blender until the mixture is smooth, creamy;
- strain the mixture, squeezing out excess moisture (the pulp can be used in baking).

The density of the liquid is easy to regulate due to water, as well as sweetness - sweeten with honey, cherry jam. The drink is stored for no more than five days in the refrigerator. It provides all its benefits at room temperature. It is not recommended to heat it to high temperatures, as boiling reduces the nutritional value.

The product is versatile and can be used in different dishes:

- cereals, oatmeal;
- smoothies;
- protein shakes;
- coffee, tea, cocoa;
- cocktails;
- baking - pancakes, muffins;
- in soups, sauces and dressings;
- in homemade almond yogurt, ice cream.

### **Expert comment**

#### **Tatyana Eliseeva, nutritionist**

Almond milk has grown in popularity thanks to the trend towards healthy, mindful eating and veganism. Some attribute its fame to successful marketing, but the low-calorie drink has more advantages than disadvantages. It is good for the heart and other organs, suitable for vegetarians, vegans, people with lactose intolerance and fans of the keto diet. Try adding it to cereal, morning coffee - you will get the maximum benefit without sacrificing health and taste.

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*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail:* eliseeva.t@edaplust.info

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## **Bromine (Br) - value for the body and health, which contains**

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* tkacheva.n@edaplust.info, eliseeva.t@edaplust.info

**Abstract.** The article considers the main properties of bromine ( Br ) and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The best natural sources of bromine are indicated . The use of the mineral in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of bromine on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* bromine , Br , bromine, useful properties, contraindications, sources

A recent discovery allowed scientists to add bromine (Br) to the list of elements necessary for life and put it on a par with calcium, potassium. It is especially necessary for the structure of tissues and many of its functions are still being investigated by scientists. Chances are good that you are getting enough of the mineral from your favorite foods. There is also a risk of excess.

### **The role of bromine in the body**

The benefits of the mineral for humans became known in the 21st century. Scientists have found that it is easily absorbed in the intestines, has a half-life of about 12 days and is required by a special enzyme called peroxidase. With its help, the enzyme forms a special bond and is responsible for the architecture of tissues.

It is important to remember that bromine is not a safe substance and in excess can be harmful to health. For example, a significant increase in the level of bromine in plasma increases the concentration of thyroid-stimulating hormone (TSH) in the blood. These are the consequences of the action of the mineral on the thyroid gland - in excess, it reduces its activity. <sup>[one]</sup>

### **Bromine in food: concentration, assimilation**

The mineral is never found in nature in elemental form - it is presented in the form of organic compounds known as bromides, and natural organobromine. They are found in air, soil, water, salts. You can even consume them from popular drinks like Coca-Cola.

The mineral has even been found in drinking water. Scientists have found that under the influence of ozone, bromate ions are formed from it, which are very strong oxidizing agents that harm the body. However, humans are now more exposed to bromides through food due to the use of bromine-containing fumigants in horticulture and food storage. <sup>[2]</sup>

### **Foods that contain bromine**

Many people get too much bromine from supplements, foods, meals:

- pesticides used in agriculture contain methyl bromide;
- trace amounts of the microelement are found in flour, bakery products;
- many non-alcoholic, isotonic drinks with cola and citrus flavors contain bromide.

People are often exposed to bromine compounds through poorly washed fruits and vegetables, as pesticides remain on them. It is sometimes better to cut off the skin from purchased fruits - many toxic compounds can remain in them. Flour made from wheat, corn and other cereals can also be contaminated with brominated pesticides. Potassium bromate is also often used as an additive to bakery products - it makes the dough more elastic and elastic. <sup>[3]</sup>

The largest reservoir of the microelement is the ocean with a concentration of 65–80 mg/l of bromine. Therefore, a valuable component is found in many seafood, such as fish and shellfish. Researchers have even found it in seaweed. <sup>[four]</sup>

### **The optimal daily dose of bromine for the prevention of deficiency**

Bromine is not needed by the body in large quantities - 1 mg / kg of body weight is enough. But in many countries, the daily intake is 2-8 mg / kg due to an improper diet, in which there are too many pastries, cereals, harmful fish, nuts. In such dosages, the substance can exhibit toxic properties. <sup>[5, 6]</sup>

## **Top 3 Research-Backed Health Benefits of Bromine**

### **1. Needed for Collagen Formation**

In the 1980s, researchers discovered defects in collagen-IV, a protein essential for tissue development, in some people. These people were also united by the deficiency of bromine. It turned out that ionic bromide helps enzymes build fibrillar protein, which underlies the connective tissue - tendons, bones, cartilage, dermis. <sup>[7]</sup>

### **2. Promotes normal sleep**

The trace element was discovered as a sleep-inducing sedative compound - found in sufficient amounts in sleeping people and deficient in people with insomnia. The discovery is that the component induces REM sleep. Scientists have found that its concentration in the blood is greatly reduced during hemodialysis. This often leads to insomnia in dialysis patients. <sup>[eight]</sup>

### 3. Reduces lipid accumulation in liver cells

Increased accumulation of free fatty acids (FFA) and triglycerides (TG) provokes fatty liver disease. Clinical studies show that the higher the levels of bromide in the blood, the lower these indicators, total and "bad" cholesterol. However, the mode of action of bromide on lipid accumulation is still unknown. <sup>[9]</sup>

### Interaction of bromine with vitamins and microelements

Bromine is a member of the halide family, which includes [chlorine](#), fluorine, and iodine. It has properties similar to them, and with iodine it has a feedback - when its level rises, the concentration of iodine falls and vice versa. Lack of balance causes great harm to the body.

Bromine is dangerous because it competes with iodine for the same receptors - it acts as a substitute for it, interferes with absorption. Since the thyroid gland needs iodine to produce hormones, this leads to severe thyroid insufficiency (hypothyroidism).

### Application in medicine

More than a century ago, bromine was introduced into medicine as an antiepileptic, anticonvulsant, sedative. In the 50s, drugs were available with him for the treatment of acid-dependent diseases of the gastrointestinal tract. They were withdrawn from sale in some states of America in 1975, but are still available outside of them.

Today, the mineral is found in some medicines such as inhalers, nasal sprays, gaseous anesthetics. Potassium bromate is found in mouthwashes, antiseptics to treat sore or bleeding gums.

### Bromine in scientific research

- Bromine affects the accumulation of iodide not only in the thyroid gland, but also in the skin. Its high consumption can reduce iodine stores in the body, increase its excretion from the skin. Such effects appear at a dosage of 150 mg / day. <sup>[ten]</sup>
- Bromide intoxication has become a rare disease. It is believed that the decrease in incidence is associated with a decrease in the use of bromides, a decrease in their availability. However, bromism occasionally develops even under medical supervision due to oversight and failure to recognize side effects. The micronutrient may aggravate the disease for which it was prescribed. <sup>[11, 12]</sup>
- The study of the medicinal properties of bromide showed that it is difficult to use it in any drug therapy. Three groups of 8 healthy volunteers received 15, 24 and 30 mg of potassium bromide daily for 20 weeks. Compound blood concentrations were measured in all participants every two weeks. The results in each group were very different, which indicates a different assimilation of the component - it is difficult for doctors to predict its beneficial effects. <sup>[13]</sup>
- An excess of bromine increases the risk of preterm birth - it does not allow the body to absorb iodine, which is necessary for expectant mothers. It is difficult to monitor its consumption, as it is often used to purify water. Scientists have also found a link between bromide exposure and birth defects. <sup>[14, 15]</sup>

- Recent studies have shown that potassium bromate used in baking causes oxidative DNA damage. The International Agency for Research on Cancer has classified it as a carcinogen. People consume this compound on a daily basis and doctors are afraid of the possible negative consequences. <sup>[16, 17]</sup>

## **Potential Harm of Bromine: Complications and Warnings**

Humans can absorb organic bromine compounds through their skin, inhalation, and food. The most important negative health effects can be caused by bromine-containing organic compounds that disrupt the functioning of the nervous system. They can also cause damage to the liver, kidneys, lungs, and gastrointestinal tract. Inorganic bromines are found in nature and can also damage the nervous system, thyroid gland.

## **Bromine deficiency - symptoms, consequences**

Research shows that the mineral is essential for the development of the tissues of all living things, from primitive marine animals to humans. Without it, people have trouble sleeping. And adding it to the diet of patients on dialysis and full intravenous nutrition improves their health.

## **Symptoms of excess bromine**

When bromine enters the body in large quantities, it does two things:

- replaces [iodine](#), which can lead to a decrease in thyroid activity;
- has a direct toxic effect on tissues.

Currently, there is preliminary evidence that high levels can cause thyroid, prostate, and ovarian cancer. Penetrating into the nerves of the brain, it can lead to emotional problems such as mood instability, depression, psychosis, anxiety. There are also reports that some cases of schizophrenia are associated with bromine poisoning.

Other side effects of bromine:

- nodular acne, dryness, itching;
- anorexia, abdominal cramps and bloating;
- excessive fatigue;
- metallic taste in the mouth;
- unstable heart rate.

Be careful and remember that the mineral is everywhere. By limiting its exposure, you can avoid its toxicity. <sup>[18, 19, 20]</sup>

## **Interaction of bromine with drugs**

The microelement does not combine well with some antibiotics, anesthetics, muscle relaxants and drugs for the treatment of angina pectoris. However, this only happens when a large dose of the mineral is consumed, exceeding the daily allowance.

## **Expert comment**

**Tatyana Eliseeva, nutritionist**

Bromine plays an important role in maintaining health, but you probably don't need to make any changes to your diet to get it. Its compounds are added to baked goods and drinks, methyl bromide is sprayed on strawberries to control pests ... The risk of excess is greater than the risk of deficiency, so do not pay much attention to it. It is better to focus on the consumption of minerals that are hard for the body to obtain.

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### **Bromine (Br) - importance to the body and health, where it is found**

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail*: tkacheva.n@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article considers the basic properties of bromine (Br) and its effects on the human body. A systematic review of modern specialist literature and current scientific evidence is provided. The best natural sources of bromine are indicated. The use of the mineral in various types of medicine and the effectiveness of its use in various diseases are considered. Potentially adverse effects of bromine on the human body in certain medical conditions and diseases are analyzed separately.



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

*Anna Shelestun, nutritionist*

*Eliseeva Tatyana, editor-in-chief of the EdaPlus.info project*

*E-mail: shelestun.n@edaplus.info, eliseeva.t@edaplus.info*

**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. <sup>[one]</sup>

## **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. <sup>[2, 3, 4, 5, 6]</sup>

### **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). <sup>[7, 8, 9]</sup>

### **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. <sup>[10, 11]</sup>

### **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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## **Apple cider vinegar for health and beauty: scientific facts about its benefits, harms and use for weight loss**

*Shelestun Anna*, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail:* shelestun.a@edaplust.info, eliseeva.t@edaplust.info

**Abstract.** The article deals with the basic properties of apple cider vinegar and its effects on the human body. A systematic review of modern specialized literature and current scientific data is provided. 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 application in various diseases are considered. The potential adverse effects of apple cider vinegar on the human organism for certain medical conditions and diseases are analyzed separately.



## **Vanadium (V) - value for the body and health, which contains**

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* eliseeva.t@edaplust.info

**Abstract.** The article considers the main properties of vanadium ( V ) and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The best natural sources of vanadium are indicated . The use of the mineral in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of vanadium on the human body under certain medical conditions and diseases are analyzed separately.

*Keywords:* vanadium, V , vanadium, useful properties, contraindications, sources

This is an element with atypical biological functions. The American Dietetic Association AmDAssoc considers the mineral essential for humans, especially men and women over 41 years of age. It is involved in redox reactions, has an anti-cancer function, improves the action of insulin, and has many other health benefits. Let's look at its main properties, proven by scientific research.

### **Vanadium in the body**

The trace element is poorly absorbed in the intestine - from 0.2 to 5%. Fortunately, this is not a problem, as it is needed in trace amounts and is toxic in excess. But it is worth remembering that a deficiency, as well as excessive concentrations, can lead to a number of pathologies, cause irreversible damage to tissues and organs.

The total content of the polyvalent metal in the body of adults is 100-200 mcg. Half of the total amount is in the bones, and the remainder is mainly deposited in the kidneys, liver, spleen. A tiny amount is found in the muscles, lungs and brain.

It is known that the micronutrient can change and suppress the action of the protein. Under certain conditions, it affects the metabolism of erythrocytes, the transmission of intracellular signals, the accumulation and transport of calcium in cells. In addition, it regulates the activity of key enzymes, takes part in carbohydrate and lipid metabolism, the formation of cells for various purposes and tissue growth. <sup>[12]</sup>

### **Vanadium in food**

Vanadyl and vanadate are the most biologically significant forms of the mineral. Vanadyl sulfate is especially common and is used in food supplements. The trace element is also found in compounds with valency I, II, IV and V, among which the last two groups are most popular.

### **Foods with a high concentration of vanadium**

Foods with a micronutrient greater than 1 ppm (part per million) are considered rich sources of a nutrient, while levels between 1 and 5 ng/g are considered low.

### **7 foods with the highest vanadium content**

No.	Products	ng/g
one	Mushrooms	50–2000
2	dried parsley	1800
3	Black pepper	987
four	<a href="#">Spinach</a> , vacuum freeze dried	533–840
5	Dill seeds	431
6	Whole grains and cereals	5–30
7	Cow's milk products	5–30

A lot of useful component can be obtained from shellfish, beer, wine, drinks with artificial sweeteners. <sup>[3, 4]</sup>

### **Recommended daily allowance**

There are currently no established doses for optimal intake of the mineral. The National Institute of Medicine NIH (an agency of the US Department of Health) has established an acceptable upper limit, at which there are no unwanted side effects - 1.8 mg for adults. Safe daily doses for infants, children, pregnant and lactating women are not yet known.

Studies show that 7.8–10 mg of a micronutrient per day for 2 weeks does not cause adverse symptoms. Problems provoke doses of 14-42 mg - with an excess, the work of the gastrointestinal tract is disrupted.

The intake of the substance depends on the diet and on average a European receives 15–20 mcg/day from food, and an American from 10 to 60 mcg/day. Dietary supplements contain different amounts of a micronutrient - the concentration depends on the chemical compound used. For example, about 31% of elemental vanadium is concentrated in sulfate, 42% in sodium metavanadate, and 28% in sodium orthovanadate.

## **6 Health Benefits of Vanadium for Children, Men and Women**

### **1. Enhances the action of insulin, prevents the development of diabetes**

High doses of vanadyl sulfate (about 100 mg/day) improve the body's use of insulin. This hormone is responsible for the absorption of glucose and regulates its level in the blood, so adding the mineral to the diet reduces blood sugar even in people with diabetes. True, researchers have concerns about high doses, as they can cause unwanted effects with long-term use. <sup>[5, 6]</sup>

### **2. Shows antioxidant properties and protects the kidneys**

Experiments on rats have shown that after treatment with vanadium in rodents increased glucose metabolism, its utilization, insulin sensitivity in obesity and improved liver condition. In addition to glucose, vanadyl sulfate reduced the concentration of urea and creatinine in the blood, reduced oxidative stress and maintained normal kidney function. <sup>[7, 8, 9, 10, 11]</sup>

### **3. Fights bacteria, viruses, fungi and parasites**

The mechanism of the antibacterial activity of the metal is not fully understood, but it is known that it penetrates the walls of bacteria, causes their morphological changes and prevents division. Also, the mineral blocks the replication of the human immunodeficiency virus HIV-1 / HIV-2, preventing its reproduction and protecting against the development of infection. It is able to destroy intracellular pathogens and help the immune system. <sup>[12, 13]</sup>

### **4. Fights tumors**

The anticarcinogenic activity of the component still needs to be studied, but its compounds and complexes have already shown themselves to be effective agents for fighting cancer. Of great importance are the antioxidant properties of the mineral and its ability to protect cellular metabolism. New research shows that it can be considered as a readily available, promising chemopreventive agent against cancer. <sup>[14, 15, 16, 17]</sup>

### **5. Normalizes cholesterol levels and heart function**

Organic and inorganic compounds act as cardioprotective agents. They improve heart function, protect against ischemia, prevent hypertension and myocardial hypertrophy. Additional cardioprotective mechanisms are increased glucose catabolism, stimulation of its transport and normalization of levels in myocardial cells. <sup>[18, 19, 20, 21, 22]</sup>

### **6. Regulates Appetite and Helps Fight Obesity**

Studies on rodents have shown that the introduction of the mineral into the diet leads to a decrease in appetite, less food intake. As a result, the concentration of leptin in the blood (a hormone that regulates appetite) and body weight decrease. <sup>[23]</sup>

## **Interaction of vanadium with other trace elements**

- chromium, chloride, ferrous ions and aluminum hydroxide reduce its absorption;
- magnesium, vitamins C and E, polyphenols, phytosterols fight the toxicity of the mineral in its excess - reduce oxidative stress.

### **Application in medicine**

Antiviral, antibacterial, antiparasitic, antifungal, anticancer, antidiabetic and antihypercholesterolemic activity, as well as cardioprotective and neuroprotective effects, are of interest to many research centers. Humans need microgram amounts of the element to improve glucose metabolism and insulin sensitivity, which means it can be therapeutically active at low concentrations.

Metal complexes and compounds are already used in tissue engineering to obtain biomaterials. They are used to regenerate damaged tissues, organs and restore their lost functions. Also, vanadium is a part of metal biomaterials in bone surgery (prostheses).

Studies have shown that some complexes of the element fight viruses, including HIV, influenza, SARS, dengue fever. They can also be effective in combating candidiasis, mycosis and bacteria that provoke poisoning, respiratory infections, typhoid fever, strep throat, tuberculosis and skin diseases. [24]

### **In scientific research**

- The mineral can act not as an antioxidant, but on the contrary, it can be a pro-oxidant and increase oxidative stress. This leads to many negative consequences, including DNA degradation, protein denaturation. In this case, it weakens the antioxidant barrier and damages cells, as free radicals do. It can also release some transition metals, accumulate in the liver and kidneys, causing hepato- and nephrotoxic effects. [25, 26]
- Implants made of titanium alloys with vanadium are exposed to body fluids - the mineral can be released into the surrounding tissues and have an adverse effect. Therefore, the surface layer of the prosthesis is often modified to cause a specific tissue reaction that is safe for health. This applies to both orthopedic and dentures. [27]
- Strength training enthusiasts use vanadyl sulfate to improve athletic performance. Previously, this caused concern in the scientific community - scientists suggested that supplements could lead to anemia, changes in the white blood cell system. Studies conducted on athletes have refuted the assumptions - such supplements do not affect the number of red blood cells, white blood cells, platelets, blood viscosity and biochemistry. [28]

### **Dangerous properties of vanadium**

The usual amount of trace element in the diet (less than 30 mcg/day) has low toxicity. However, its ability to accumulate and strong toxicological potential limit its use in pharmacology. And the ability to lower blood sugar levels forces people with hypoglycemia to carefully monitor the intake of the component, avoiding it in supplements and medications. [29]

### **Vanadium deficiency in the body and symptoms**

Signs of a lack of an element in humans have not yet been established. Researchers only speculate that a deficiency can raise cholesterol and blood sugar levels, lead to spinal degeneration and diabetes. In a study done on goats, its deficiency for three years caused irreversible bone deformity in the animals and some of them died.

### **Excess vanadium and symptoms**

The toxicity of a mineral depends on many factors, including food composition, type of compound (organic/inorganic), addition to complexes, valency. Equally important is the duration of exposure and individual sensitivity. It is believed that the element is dangerous in a dosage of more than 1.8 mg / day. However, large doses are used in the treatment of various diseases, which can cause unwanted side effects:

- abdominal discomfort, bloating;
- diarrhea
- nausea;
- green-black tongue;
- loss of appetite and energy;
- weight loss;
- problems with the nervous system.

The element is dangerous when used in large quantities for a long time. In this case, the risk of damage to the kidneys and other organs increases.

### **Interaction with drugs**

Taking the mineral along with diabetes medications can lead to too low blood sugar levels. The micronutrient can also slow blood clotting, and taking it with drugs that slow blood clotting increases the chance of bruising and bleeding.

### **Expert comment**

#### **Tatyana Eliseeva, nutritionist**

Vanadium is of interest to scientists and doctors due to its biological activity and wide spectrum of action. It improves glucose tolerance, inhibits cholesterol synthesis. The amount of research on its use in medicine is constantly growing, and it can be assumed that new drugs based on the mineral will soon be available for the treatment of many life-threatening diseases. In the meantime, you can get the substance from commonly available and inexpensive foods that are not superfoods.

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### **Vanadium (V) - importance to the body and health, where it is found**

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail*: eliseeva.t@edaplus.info

**Abstract.** The article discusses the basic properties of vanadium (V) and its effects on the human body. A systematic review of modern specialized literature and current scientific data is provided. The best natural sources of vanadium are indicated. The use of the mineral in various types of medicine and the effectiveness of its use in various diseases are considered. Potentially adverse effects of vanadium on the human body in certain medical conditions and diseases are analyzed separately.



## Sesame milk: 5 reasons to include it in your daily diet

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* tkacheva.n@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article discusses the main properties of sesame milk 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 drink are indicated, the use of sesame milk in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of sesame milk on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* sesame milk , useful properties, contraindications, composition, calorie content

Sesame milk is a delicious gluten-free drink made from sesame seeds. Its production is more environmentally friendly than the creation of analogues from almonds and oatmeal: less water is consumed, and the final product contains more macro- and microelements, which are important for digestion and immunity. It has practically no contraindications and can be drunk by vegetarians, allergy sufferers, children, the elderly. Would you like to know more about the benefits of the product? Read on - we tell the whole truth about the benefits and possible harm.

The calorie content of sesame milk depends on its concentration and ranges from 90–140 kcal. It's low in sodium and has 8 times more protein than traditional dairy drinks at 8g per glass. The composition contains [iron](#), potassium, calcium and vitamin D, which is difficult to obtain from plant foods. The product also contains prebiotic fibers that are beneficial for metabolism and immunity.

### Top 5 benefits of sesame milk for children, women and men

#### 1. Helps to lose weight

The drink contains about 8% fiber - an excellent food for beneficial intestinal bacteria. Dietary fiber is vital for weight loss as it improves digestion, reduces blood sugar spikes, and keeps you full for longer. Due to the low concentration of sodium, the drink prevents fluid retention in the body. It also promotes the production of liver enzymes and fat metabolism, and prevents the absorption of cholesterol. <sup>[one]</sup>

## **2. Boosts Immunity and Fights Cancer**

Products made from sesame seeds increase the antioxidant activity of the blood due to vitamin E and other constituent substances. They fight oxidative stress, a chemical reaction that can damage cells and increase the risk of many chronic diseases. This applies to both fungal infections and oncology (especially colon cancer). <sup>[2, 3]</sup>

## **3. Protects Against Cardiovascular Disease**

Regular consumption of sesame milk helps to reduce triglycerides and cholesterol levels due to the phytosterols and lignans contained in it. Studies have shown that they significantly reduce the risk of heart disease. This effect is enhanced by healthy fats, as well as sesamin, sesamol and sesamol. The complex of compounds strengthens the heart, cleanses the coronary arteries and improves the circulatory system, preventing high blood pressure. <sup>[4, 5, 6]</sup>

## **4. Regulates Blood Sugar**

The low amount of carbs, excellent concentration of healthy fats, and pinoresinol are what help sesame milk control blood sugar levels. Pinoresinol breaks down maltose, which is found in starchy and many other foods. Thanks to him, sugars are absorbed more slowly and their sharp jumps in the blood do not occur. <sup>[7, 8, 9]</sup>

## **5. Promotes the formation of red blood cells**

The drink contains the nutrients the body needs to produce red blood cells. Iron, copper, vitamin B6 stimulate the formation of red blood cells that contain hemoglobin and transport oxygen through the blood vessels. <sup>[10, 11]</sup>

## **Harm of sesame milk: contraindications and precautions**

Most studies have found that sesame seed products have little to no negative effects. Their excessive use can lead to some side effects:

- a strong decrease in blood pressure;
- abdominal pain and bloating;
- allergic reactions;
- exacerbation of gout symptoms.

The drink is contraindicated in people with urolithiasis, diarrhea, embolism, thrombosis and other blood diseases.

## **How much sesame milk can you drink every day?**

Drinking 1/2-1 glass of milk several times a week is enough to get the most benefit and protect against side effects. It can be drunk on its own, added to other drinks and used in cooking.

## **How to make sesame milk at home: cooking and eating hacks**

A refreshing drink is easy to prepare yourself at home:

- it is necessary to soak [sesame seeds](#) in a bowl of warm water for about 30 minutes to soften and improve the absorption of vitamins and minerals;
- drain all the water from the sesame seeds and smash the grains in a blender;
- add water to the mass - for one part of sesame seeds, 3-4 parts of ordinary or coconut water;
- add other optional ingredients for flavor - vanilla, sea salt, or pitted dates for sweetness (so you won't be tempted to add harmful sweeteners) and blend again on high speed for about 1 minute;
- strain the mixture through a special bag or gauze folded in several layers.

The result: Nutrient-rich, creamy sesame milk! It can be stored for 1-2 days in the refrigerator, added to teas, coffees, served cold with ice or hot with a little cinnamon, vanilla or maple syrup. This is a great option for lattes as it lathers easily and doesn't separate when added to hot liquids. It is worth considering that it does not go well with matcha tea due to natural bitterness.

The product is also added to cereals, smoothies, pastries. It gives them a richness that is rarely found in vegan alternatives. The pleasant taste of sesame seeds gives a spicy tinge to both cakes and spicy dishes.

### Expert comment

#### Tatyana Eliseeva, nutritionist

Nutritious sesame milk contains a variety of nutrients, phytonutrients, and antioxidants that provide the benefits listed above. To get them, it is important to properly prepare the seeds for making a milk drink. Follow our advice to cut out junk food and drink sesame milk to improve gut health and boost your immune system.

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### **Sesame milk: 5 reasons to include it in your daily diet**

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail: tkacheva.n@edaplus.info, eliseeva.t@edaplus.info*

**Abstract.** The article deals with the main properties of sesame milk and its effects on the human body. A systematic review of modern specialized literature and current scientific data is conducted. The chemical composition and nutritional value of the drink are indicated, the use of sesame milk in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of sesame milk on the human body in certain medical conditions and diseases are analyzed separately.



### **Arsenic (As) - a danger to the body and health, where it is contained**

*Anna Shelestun*, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail: shelestun.n@edaplus.info, eliseeva.t@edaplus.info*

**Abstract.** The article discusses the main properties of arsenic a ( As ) and its effect on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. The best natural sources of arsenic a are indicated. The use of the mineral in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of arsenic a on the human body under certain medical conditions and diseases.

*Keywords:* arsenic , As , arsenic, useful properties, contraindications, sources

Arsenic (As) is a hazardous chemical found in groundwater and is of concern to WHO. Water polluted by it threatens health not only if it is drunk, but even if crops are irrigated. Long-term exposure to high doses leads to cancer, diabetes, heart disease and even death. We tell you all about the toxin so that you can protect yourself and loved ones from deadly diseases.

### **The effect of arsenic on the body: where it is located, how it accumulates and is excreted**

The total content of the element in the body usually does not exceed 15 mg. Its main routes of entry are ingestion and inhalation (absorption through the skin is negligible). It is distributed by the blood throughout the body and mainly accumulates in the liver, lungs, and small intestine. <sup>[one]</sup>

Approximately 70% of the trace element is excreted through the kidneys with urine. Sometimes it is absorbed and excreted unchanged, but if it reacts with important biological molecules, then it disrupts their functions.

The level of harm done depends on four factors:

- amount;
- duration of exposure;
- the form;
- individual sensitivity. <sup>[2]</sup>

The less poison there is in the body, the better. A single low dose is excreted within a few days after ingestion. An exception is keratin-rich tissues such as hair and nails, so they are used for testing when arsenic poisoning is suspected. <sup>[3]</sup>

### **Sources of arsenic - what foods contain it?**

The toxin enters the body from contaminated food and water, which poses the greatest threat to health. Absorption through the skin is minimal, so bathing, handwashing, laundry is not a problem. Arsenic can also be found in pharmaceuticals, pesticides, and feed additives. People who smoke tobacco are at high risk of poisoning, as tobacco crops actively absorb the component from the soil, insecticides. <sup>[4, 5, 6]</sup>

### **Foods with arsenic - types, toxicity, risks**

An element can be organic or inorganic. The latter is one of the most common chemical contaminants of drinking water in the world and is recognized as a carcinogen. The organic form is less harmful to health.

Food sources of organic arsenic:

- cereals (especially [rice](#));
- dairy;

- meat and poultry;
- seafood.

In vegetables, fruits, rice and other grains, the component comes from the soil. [7, 8, 9]

### **Daily dose of arsenic - safe and lethal**

Some scientists rank the component among the vital ultramicroelements - they believe that it is necessary for a person in scanty concentrations, like chromium, vanadium, nickel, selenium. There are suggestions that arsenic plays a role in the metabolism of the essential amino acid methionine, inhibits the activity of certain genes. [ten]

Scientists have not yet been able to confirm the functions of arsenic for the body, since the need for it is extremely small, and the prevalence is very high. They found that under laboratory conditions in an ultraclean environment, 10–15 mcg/day is sufficient for an adult. However, in most countries, men and women consume 12–50 micrograms per day.

According to WHO recommendations, water can contain no more than 10 µg / l of the toxin. However, millions of people are exposed to higher concentrations of 100 µg/L and above. A dose of 50 mg can be lethal. [eleven]

### **Useful properties of arsenic for health**

Despite its potential toxicity, arsenic is found in some homeopathic remedies that are designed to combat depression, obsessive-compulsive disorder (OCD), insomnia, allergies, asthma, syphilis, psoriasis, rheumatism, cough, and other conditions. But science has proven its benefits only in the treatment of cancer of the blood and bone marrow. In other cases, there is no convincing scientific evidence to support its effectiveness.

### **Harmful properties of arsenic for children and adults**

1. **Provokes skin problems** - with severe chronic exposure, it causes focal hyperpigmentation, hyperkeratosis (thickening). [12, 13]
2. **Demonstrates carcinogenic activity** - provokes cancer of the skin, lungs, bladder (sometimes the liver, kidneys and other organs). [14, 15]
3. **Causes heart and circulation problems** - abnormal heartbeat, high blood pressure, circulatory system failure, gangrene. [16]
4. **Violates intrauterine development of the fetus** - leads to low birth weight, problems with the hormonal and nervous systems. [17]
5. **It impairs the mental abilities of children** - prolonged use of drinking water with a poison concentration of 50 µg / l impairs intellectual abilities. [eighteen]

### **Interaction of arsenic with minerals and vitamins in the body**

- [Selenium](#). The toxic substance blocks the useful anti-carcinogenic activity of selenium - it accelerates its excretion with bile, interferes with absorption. [19]
- Folic acid. With its deficiency, the processing of the poison and its removal from the body are disturbed.

## **Application in medicine**

The element trioxide is administered intravenously for the treatment of cancer of the bone marrow, blood (acute promyelocytic leukemia). The drug increases the death of cancer cells and helps to achieve remission. In dentistry, it is used to get rid of the dental nerve.

## **Scientific studies of the effect of arsenic on the body of men, women and children**

- Studies by American scientists have shown that dietary supplements based on algae can contain a lot of arsenic - 8 out of 9 samples contained more than the permissible level. Long-term use of such supplements leads to progressive alopecia, memory loss, rash, increased fatigue, nausea, and vomiting. After refusing them, the symptoms gradually disappear and blood counts return to normal. [twenty]
- In 2000, arsenic trioxide was approved in the US for the treatment of relapsed acute promyelocytic leukemia. The drug leads to complete remission in 70% of patients and causes few side effects. [21, 22]
- The susceptibility of arsenic by the body plays an important role in its toxicity. Scientists have found that the same concentrations affect people differently. In some men and women, hyperkeratosis of the soles and palms turns into malignant formations, while in others, precancerous forms do not worsen and remain so for life. [23, 24]

## **Arsenic poisoning - symptoms and signs of excess**

Acute poisoning occurs when a large dose is taken once or in a short period of time. The main symptoms of an overdose that can eventually lead to shock, convulsions and death are:

- red swollen skin;
- vomit;
- sore throat, stomach;
- diarrhea with blood;
- tingling of fingers;
- muscle spasms. [25, 26, 27, 28]

Such side effects are rare. More often, people suffer from chronic poisoning due to a minor overdose for several months, years. [29]

## **Treatment of arsenic poisoning, prevention and control of consumption**

There is no specific therapy for increased toxicity, so protection remains the best treatment. Full recovery can take from several weeks to months (depending on the severity of the symptoms). Since filtration of the poison and its disposal is not possible in some areas, scientists advise replacing contaminated groundwater with purified surface and rainwater. Cleaning technologies can also be used, from oxidation to membrane methods.

## **Expert comment**

### **Tatyana Eliseeva, nutritionist**

Currently, at least 140 million people in more than 30 countries consume water with a high concentration of arsenic. It can cause serious damage to many organs and systems, so you need to take extra precautions to protect yourself from the poison at home, and drink bottled water when traveling.

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### **Arsenic (As) - body and health hazards, where it is found**

*Shelestun Anna*, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail:* shelestun.a@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article deals with the basic properties of arsenic (As) and its effects on the human body. A systematic review of modern specialist literature and current scientific evidence is provided. The best natural sources of arsenic are indicated. The use of the mineral in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of arsenic on the human body in certain medical conditions and diseases are analyzed separately.



## Beetroot Juice – 10 Proven Health Benefits

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* eliseeva.t@edaplus.info

**Abstract.** The article discusses the main properties of beetroot juice 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 drink are indicated, the use of beetroot juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of beetroot juice on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* beetroot juice , useful properties, contraindications, composition, calorie content

Few people know about the benefits of beetroot juice, although [beets themselves](#) , as a root crop, are very popular. Everyone knows the sweet and delicate taste of beets, its rich ruby color, and also the fact that it is very useful for the intestines and digestion. However, when beets are cooked, a large amount of useful substances disappear. Therefore, in recent years, beetroot juice has been increasingly used for treatment and detoxification of the body. When drinking a drink, such useful substances as ascorbic acid, vitamin K, carotene, phytoestrogens, and folic acids enter the body much faster. As a result, immunity increases and the functioning of the cardiovascular system improves. Also, when drinking beetroot juice, the concentration of potassium increases several times, compared with the use of a root crop.

### Top 10 Health Benefits of Beet Juice

#### 1. Helps to achieve high results in sports.

Thanks to the use of beetroot juice, the blood is better saturated with oxygen, while its amount decreases in the muscles and they function better. Athletes become more enduring and energetic, and show better results in competitions.

This was especially evident in competitions related to height.

In 2014, there was an interesting publication in the journal *Medicine and Science in Sports and Exercise*. Athletes, cyclists who consumed beetroot juice rich in nitrates showed better results in races. In doing so, they used devices to simulate height.

In endurance training at high altitude, beetroot juice has also helped athletes achieve maximum performance. The subjects drank 70 ml of beetroot juice 3 hours before the test. They trained for 15 minutes with a maximum load of over 60%. <sup>[2]</sup>

## **2. Is the strongest antioxidant.**

Due to the pigment betalain, beetroot juice is a medicine for many terrible diseases - cancer, cardiovascular ailments or dementia.

Betalain has a pronounced antioxidant, anti-inflammatory and chemopreventive effect. It protects body cells from free radical damage.

In 2015, according to the results of a scientific study, it turned out that betalain, contained in large quantities in beets, fights the oxidative process in the body and neutralizes free radicals. Thus, DNA, lipids, and protein structures are protected because highly reactive radicals do not damage the membrane. <sup>[3]</sup>

## **3. Has a hypotensive effect.**

The presence of nitrates in beets is not at all a minus. The body chain produces nitric oxide from them. And it, in turn, helps to improve blood flow and lower blood pressure.

The following study was carried out in 2012. One group of people received beetroot juice, the second - water. During the day, the people of the first group recorded a significant decrease in both systolic and diastolic pressure. <sup>[four]</sup>

## **4. Promotes blood purification**

Beetroot juice is rich in fiber, which perfectly cleanses the entire digestive tract of toxins, the intestines are emptied regularly and without problems.

Glutathione is formed due to betalain, as a result, all harmful toxins become water-soluble and are easily excreted from the body with urine. Animal experiments have shown that beetroot juice perfectly cleanses and restores the liver. And since it is the main filtering organ of our body, this is extremely important.

Another advantage of beetroot juice, compared to the root crop, is that it is much easier to digest and digest, and also equalizes the pH balance in the body. <sup>[5]</sup>

## **5. Prevents aging**

It's no secret that in older people, blood circulates more slowly through the body, causing a lack of oxygen, and leading to ailments such as dementia and Alzheimer's disease. Beetroot juice contains nitrates, which are converted to nitrites in the mouth by bacteria. It is they who increase the flow of blood and oxygen to the brain and other difficult places. The effect of beetroot juice nitrates on the body of the elderly has been studied through research by Wake Forest of the Translational Center. For

trials, they chose elderly people in their 70s who followed a diet high in nitrates for 4 days, after which they underwent an MRI of the brain. It turned out that the subjects had improved blood flow to the white matter of the frontal lobes. But it is precisely the insufficient blood supply to these parts of the brain that leads to cognitive problems. It also found that the brain cells of older adults who regularly consumed beetroot juice became more neuroplastic and similar to the brain cells of younger people. <sup>[6]</sup>

## **6. Helps lower sugar levels in diabetes**

This is facilitated by alpha-lipoic acid found in beets. Its properties include: lowering glucose levels, antioxidant effect, increased sensitivity to insulin. According to a 2020 study, regular consumption of beetroot juice for diabetics helps keep sugar levels under control. Due to the high fiber content in beets, it absorbs toxins and the absorption of glucose slows down. At this time, the body has time to produce insulin for its processing. <sup>[7]</sup>

## **7. Provides the body with folic acid**

Folic acid is very important for the human body, because it is involved in the synthesis of DNA and the formation of new cells, with its deficiency, the cardiovascular, immune and circulatory systems suffer. This is especially true for pregnant women, without the proper amount of folic acid, a healthy pregnancy is impossible. One cup of beets (about 136 grams) contains 148 micrograms of folic acid. <sup>[eight]</sup>

## **8. Saturates the body with probiotics**

Everyone knows that probiotics are found in large quantities in fermented milk products and are extremely beneficial for the human digestive and immune systems. Not so long ago, an experiment was carried out with the fermentation of three types of juices, tomato, beet and carrot. During the fermentation, three bacterial strains of *Lactobacillus plantarum*, *Lactobacillus acidophilus* and *Lactobacillus delbrueckii* were grown. This was facilitated by the presence of betaxanthin in beetroot juice. Thus, consuming fermented beetroot juice can saturate the body with probiotics without consuming dairy products. This is especially valuable for those people who are lactose intolerant, as well as for adherents of dietary nutrition, because beetroot juice contains few calories and is rich in fiber. <sup>[9]</sup>

## **9. Promotes Collagen Production**

Exosome-like nanoparticles found in beet juice extract have become a real breakthrough in the field of cosmetology. Antiogenesis analysis was carried out with the aim of pro-angiogenic effect of beet juice on endothelial cells. But in the course of the study, in addition to the angiogenic effect, it was unexpectedly found also the production of collagen and the enzyme type 2 hyaluronan synthase. Therefore, beetroot juice can be used in cosmetology and therapy. <sup>[ten]</sup>

## **10. Prevents Endothelial Dysfunction**

Endothelial dysfunction is a vascular pathology and manifests itself after prolonged sitting. For a long time, doctors did not know how to correct her treatment with the help of nutrition. To study the effect of beetroot juice on people suffering from this disease, an experiment was conducted. It was attended by 11 women and men. They had to sit for three hours in one place. Before and after the experiment, they measured the dilatation of the popliteal artery and took blood samples. Some of them took a placebo before the test, others beetroot juice. It turned out that those subjects who took beetroot juice did not feel this syndrome, that is, he decompensated it. The thing is that beetroot juice increases the bioavailability of nitric oxide and prevents endothelial dysfunction. <sup>[eleven]</sup>

## Contraindications to the use of beet juice

Despite the enormous benefits of beetroot juice, it should be used with caution in the presence of kidney stones. Calcium is less absorbed by the body due to the oxalates present in beets, and it begins to be deposited in the form of kidney stones. If you suffer from such an ailment, you should be tested for the level of iron in the body, since such symptoms indirectly indicate this. <sup>[12]</sup>

## How to drink beetroot juice correctly

For increased performance and athletic performance, take a small amount of freshly squeezed beetroot juice two hours before your workout or competition. For a daily diet, it is recommended to use beetroot juice in between meals or along with the main meal. The taste of beetroot juice is quite specific, so it is recommended to add ginger, lemon or other vegetables to it to make it more interesting and tastier. When buying beets, opt for small root vegetables, they tend to be sweeter and tastier.

There is no specific dosage of beetroot juice, but since it greatly reduces blood pressure, 250 grams per day is the maximum norm, which is not recommended to be exceeded so that side effects do not occur. <sup>[13]</sup>

## Expert comment

### Tatyana Eliseeva, nutritionist

Beets and beetroot juice are a storehouse of useful substances: potassium, [folic acid](#), betaine. Juice improves immunity, helps in the fight against formidable diseases, rejuvenates the body and promotes detoxification and cleansing of all human organs and systems. Regular consumption of beet juice in combination with ginger, celery, or other vegetables will give you energy, vigor and make you healthier.

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### **Beetroot juice - 10 proven health benefits**

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail:* eliseeva.t@edaplus.info

**Abstract.** The article deals with the main properties of beetroot juice and its effects on the human body. A systematic review of modern specialized literature and up-to-date scientific data is conducted. The chemical composition and nutritional value of the drink are indicated, the use of beet juice in various types of medicine and the effectiveness of its use for various diseases are considered. The potential adverse effects of beetroot juice on the human body in certain medical conditions and diseases are analyzed separately.



## Apricot Juice - Top 10 Proven Health Benefits

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* tkacheva.n@edaplust.info, eliseeva.t@edaplust.info

**Abstract.** The article discusses the main properties of apricot juice 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 drink are indicated, the use of apricot juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of apricot juice on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* apricot juice , useful properties, contraindications, composition, calorie content

Who doesn't love ripe, juicy, sweet and fragrant apricots? Their pleasant taste is familiar to us since childhood. Since ancient times, apricot juice and [apricot fruits](#) have been highly valued for their beneficial properties and nutritional value. Apricot juice is rich in vitamin A, beta-carotene, iron and fiber. It promotes excellent digestion, but excessive consumption of fruits or juice can lead to intestinal upset.

### Top 10 Health Benefits of Apricot Juice

#### 1. Supports the cardiovascular system

Due to the accumulation of free radicals, plaques form on the walls of blood vessels, and they become difficult to pass. This can lead to thrombosis and blockage of blood vessels, which threatens with serious complications for the cardiovascular system. Apricot juice is rich in beta-carotene, which helps to lower the level of cholesterol (low-density lipoprotein) in the blood, as a result of which the vessels remain clean.

Apricot juice contains a large amount of vitamin C, which, together with beta-carotene, has a powerful antioxidant effect, improves the elasticity of blood vessels and artery walls. As a result, for normal blood circulation, the heart does not need to work hard <sup>[1,2,3]</sup>. Also, apricot juice is an excellent prevention of myocardial infarction.

## **2. Improves eye health**

Apricot juice contains a large amount of carotenoids lutein, phytoene and phytofluene, they help to avoid some eye diseases. They protect the nerve endings that run from the retina to the brain from free radicals and harmful ultraviolet radiation. Apricot juice also contains [vitamin A](#), which is good for vision. <sup>[4,5,6]</sup>

## **3. Supports the health of pregnant women**

Apricot juice is rich in iron and helps to raise the hemoglobin level in pregnant women, and a large amount of fiber helps to eliminate constipation and improve digestion, eliminate nausea and provide the expectant mother's body with vitamins, minerals and calcium. <sup>[7,8,9]</sup>

## **4. Useful for the work of internal organs**

Due to the high content of fiber, pectin and high nutritional value, apricot juice improves normal digestion and eliminates constipation. It does not contribute to the increase of acidity, on the contrary, it is alkaline. Moderate consumption of apricot juice will help eliminate flatulence and colic, help dissolve stones in the gallbladder. <sup>[ten]</sup>

## **5. Provides beauty to skin, hair and nails**

Apricot juice is rich in vitamin C, which improves skin tone and elasticity. Calcium and minerals promote good hair and nail growth. <sup>[eleven]</sup>

## **6. Strengthens bone tissue**

Apricot juice helps to increase the production of osteoblasts and the secretion of osteocalcin, which promotes the growth and renewal of bone tissue. This is especially important for people over the age of sixty, postmenopausal women, when calcium is poorly absorbed by the body and there is a high risk of osteoporosis of the bones.

The high content of magnesium and phosphorus in apricot juice ensures the normal functioning of the brain and the nervous system as a whole. <sup>[12]</sup>

## **7. Helps Raise Hemoglobin Levels**

Apricot juice is rich in iron, therefore it helps to increase hemoglobin. It is the carrier of oxygen in blood cells. It also promotes blood renewal. Therefore, by regularly drinking apricot juice, you will prevent anemia. <sup>[13]</sup>

## **8. Cancer Prevention**

Apricot juice is rich in lycopene and natural antioxidants, which are known for their ability to prevent cancer. It is best absorbed by the body during the heat treatment of fruits. This is exactly what happens when making juice. <sup>[fourteen]</sup>

## 9. Has a bacteriostatic effect on the body

As a result of a study with Japanese apricot juice concentrate, it was found that it is able to suppress staphylococci and E. coli and is itself a natural antibiotic for treating intestinal infections without harming the body. <sup>[fifteen]</sup>

## 10. Helps Fight Helicobacter pylori Bacteria

In many cases, the cause of gastritis and even stomach cancer is the bacterium Helicobacter pylori. To combat it, antibiotics and other aggressive drugs are used that have a detrimental effect on the body and cause dysbacteriosis. Apricot juice is able to suppress this bacterium and prevent the development of the disease. <sup>[16]</sup>

## Contraindications to the use of apricot juice

- People with food allergies should use apricot juice with caution, as it can provoke an attack of the disease. <sup>[17]</sup>
- Due to the large amount of pectin and fiber, you should not consume too much apricot juice, so as not to cause stomach and intestinal upset. <sup>[eighteen]</sup>
- Apricot juice contains a large amount of sugar, so it is not recommended to use it in large quantities in diabetes.

## Rules for the preparation and use of apricot juice

There are two methods for preparing apricot juice:

1. Rinse the fruits, dry, remove the seeds and pass through the juicer;
2. Rinse the fruits, remove the seeds and boil until soft. Pass through a filter with gauze, as a result, the juice will be without pulp and more transparent.

The first option is more beneficial for health, since it retains healthy fiber and all the vitamins, while cooking and straining removes most of the fiber, and the vitamins disappear. If you collect apricots at the peak of maturity, you can not add sugar, the juice will turn out delicious and sweet anyway. You can add a little water during cooking so that the juice is not so concentrated. It is best not to store apricot juice, but to drink it freshly squeezed, since many useful substances are destroyed during prolonged interaction with air. The recommended dosage is from one to those glasses of juice per day, no more. Do not drink apricot juice on an empty stomach or drink heavy meals with it.

## Expert comment

### Tatyana Eliseeva, nutritionist

Apricot juice is a storehouse of vitamins and fiber, contributes to the healing of the whole body, increases hemoglobin, prevents cardiovascular diseases and improves the condition of bone tissue. It is very useful for expectant mothers, besides it is very tasty, sweet and fragrant, it is a pleasure to drink it!

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### **Apricot juice - Top 10 proven health benefits**

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail*: tkacheva.n@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article deals with the main properties of apricot juice and its effects on the human body. A systematic review of modern specialized literature and up-to-date scientific data is carried out. The chemical composition and nutritive value of the drink are indicated, the use of apricot juice in various kinds of medicine and efficiency of its application at various diseases are considered. Potentially adverse effects of apricot juice on the human body in certain medical conditions and diseases are analyzed separately.



### **Peach Juice - 10 Key Health Benefits of the Drink**

*Anna Shelestun*, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail*: shelestun.n@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article discusses the main properties of peach juice 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 drink are indicated, the use of peach juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of peach juice on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* peach juice , useful properties, contraindications, composition, calorie content

Peach is a very tasty, juicy and healthy fruit that is loved by both young children and adults. It is fleshy and extracting juice in its pure form is quite problematic, so most often it is used to prepare nectar with pulp or mashed potatoes. Peach juice is used both separately and mixed with sauces, cocktails, marinades. The advantage of drinking juice is that it is more easily and quickly absorbed by the body, bringing huge health benefits.

[Peach](#) juice will help you become more beautiful, give vigor and energy, and help control your appetite. Peach juice is especially useful after training, in between meals. When preparing juice, the pulp is not separated, but whipped to a gel-like mass. In this form, fiber gently envelops the gastrointestinal tract, maintains a normal level of intestinal microflora, lowers cholesterol and strengthens the immune system.

## **Top 10 Health Benefits of Peach Juice**

### **1. Helps to lose weight**

Peach juice is high in fiber, vitamin E, beta-carotene, low in calories, and contains sorbitol. It helps to quickly remove toxins from the body, eliminates constipation. After drinking a glass of peach juice after a workout, you will deceive your body - it will get enough, but you will not get better. Also, peach juice contains a large amount of polyphenols, which help fight obesity. <sup>[12]</sup>

### **2. Helps with gastrointestinal problems**

Peach juice is rich in fiber and pectins, and they are in a gel form, gently envelop the intestines, remove toxins, improve peristalsis and provide normal stools, peach juice also improves intestinal microflora and is a good prevention of dysbacteriosis. <sup>[3]</sup>

### **3. Is a powerful antioxidant**

Various chronic diseases, such as atherosclerosis, rheumatoid arthritis, lead to the oxidation of the body. Scientists conducted a study where 10 participants consumed various juices, including peach. Juices were freshly squeezed. During the test, it turned out that juices absorb harmful radicals and are powerful antioxidants, purifying human blood plasma. <sup>[four]</sup>

### **4. Promote body rejuvenation**

Peach juice is rich in vitamin E and has been found by the Baltimore Longitudinal Study on Aging (BLSA) to be a source of flavonoids, which are known to contribute to the maintenance of youth and beauty in the human body. The effect was noticeable in subjects aged 50+. By drinking peach juice regularly, you will look young and attractive for many years to come. <sup>[5]</sup>

### **5. Beneficial effect on eye health**

As a result of the optimization of dispersion-liquid microextraction, it was found that the representative carotenoid  $\beta$ -carotene is present in peach juice in large quantities. It is a prophylactic against vision loss and the development of cataracts. Also, according to the results of a study in which older African American women with glaucoma participated, it was found that the use of juices, including peach juice, is a protective agent against this disease. <sup>[6, 7]</sup>

## **6. Suitable for feeding young children**

Peach juice rarely causes allergies, is perfectly absorbed and digested by the children's body, so it is often recommended to introduce even small children into the diet. In addition, studies of the comparative characteristics of the antioxidant effect of juice, milk and cereals in the body of young children showed that peach juice has a high antioxidant capacity. Therefore, the child will benefit greatly from its use. <sup>[eight]</sup>

## **7. Suitable for consumption even for people with type 2 diabetes**

To study the dynamics of glycemia after eating, 21 patients with type 2 diabetes were selected. In the second phase of the study, people were given peach nectar, it turned out that when measuring glucose levels after a 14-hour fast after drinking it, the glycemic response was very low. So even with such a formidable ailment, peach juice can be consumed in small quantities. <sup>[9]</sup>

## **8. Peach Juice Retains Antioxidant Properties in Cooking**

An interesting experiment was carried out to confirm this fact. We baked three types of cookies. The first is with peach puree, the second is based on fat and the third is with sucrose. It turned out that the addition of peach puree changed the profile of polyferols and significantly increased the antioxidant properties. Part of the polyferols was perfectly absorbed by the small intestine, benefiting the body. This is good news for those with a sweet tooth, because you can indulge in starchy foods while taking care of your health. <sup>[ten]</sup>

## **9. Very healthy and tasty wine and vinegar are obtained from peach juice.**

It turns out that peach juice can be used to make wine and vinegar. During fermentation, the TPC content and ORAC value of peach vinegar were higher than those of peach juice, this was proved by a study. Thus, the antioxidant properties increase significantly, and the benefits for the body only increase. This is a good alternative how to use peach juice with a short shelf life or if there is a surplus of it. <sup>[eleven]</sup>

## **10. Facilitates recovery from chronic diseases**

Peach juice contains ellagic acid. It is a natural phenol with [antioxidant](#) and anti-inflammatory effects. So people with weakened immune systems and chronic diseases need to include peach juice in their diet. <sup>[12]</sup>

## **Contraindications for use**

Peach juice has such a soft and enveloping effect on the body that there are no direct contraindications to its use. Do not exceed the dosage of peach juice in such cases:

- if you suffer from food allergies;
- if you have diabetes;
- if you introduce juice into complementary foods for a small child. <sup>[13, 14]</sup>

## How to drink peach juice

The maximum benefit, of course, will bring freshly squeezed peach juice. The pulp is not separated, as this is problematic, but beaten with a blender until it becomes a gel-like structure. Peach nectar is perceived by the body as food, not drink, so drink it at least half an hour before a meal or replace one of your meals with it. By itself, peach juice is quite sweet, tasty and fragrant, you should not sweeten it additionally. The recommended dosage of peach juice is 200 ml per day.

## Expert comment

### Tatyana Eliseeva, nutritionist

As you can see, in addition to the fact that peach juice is very fragrant, sweet and tasty, it is also very healthy, as it contains a lot of fiber in suspension. It envelops the intestines and removes toxins and toxins. Peach juice can be safely given to young children and pregnant women, as it is gentle on the body, bringing health benefits.

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### **Peach juice - 10 key facts about its health benefits**

*Shelestun Anna*, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail*: shelestun.a@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article deals with the main properties of peach juice and its effects on the human body. A systematic review of modern specialized literature and current scientific data has been conducted. The chemical composition and nutritional value of the drink are indicated, the use of peach juice in various types of medicine and effectiveness of its use for various diseases are considered. Potentially adverse effects of peach juice on the human body in certain medical conditions and diseases are analyzed separately.



## Pomegranate juice - 15 reasons to add it to your diet

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* eliseeva.t@edaplust.info

**Abstract.** The article discusses the main properties of pomegranate juice 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 drink are indicated, the use of pomegranate juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of pomegranate juice on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* pomegranate juice, useful properties, contraindications, composition, calorie content

Pomegranate has been considered one of the healthiest fruits since ancient times. Pomegranate juice contains an antioxidant that can help prevent various diseases, provide the body with beneficial elements, and improve the functioning of the gastrointestinal tract. The drink serves to prevent cancer, cardiovascular disease and improve immunity. <sup>[one]</sup>

### Composition and calories

The calorie content of pomegranate juice is low - 54 kcal per 100 grams of product. The drink is rich in vitamins and minerals. Pomegranate is a good source of vitamin E, which is a powerful antioxidant, vitamin K, which is essential for blood clotting, magnesium, which helps maintain normal glucose levels and blood pressure, and other beneficial components. <sup>[12, 13]</sup>

### Top 15 Health Benefits of Pomegranate Juice

#### 1. Antioxidant effect

Pomegranate contains powerful antioxidants that help reduce the levels of reactive oxygen species (such as free radicals) in the body. The body produces oxygen during various life processes. Exposure to toxins such as tobacco smoke can also increase reactive oxygen species levels.

A high level of ROS can lead to the development of various inflammatory processes. Oxidative stress can contribute to metabolic disease, cancer, and other health problems. Antioxidants help remove ROS from the body and protect it from damage. [4, 5, 10, 11, 15]

## **2. Low calorie**

The pomegranate contains few calories, so this fruit, like the drink made from it, can be consumed with various diets. [12]

## **3. Prevention of cancer**

The National Institutes of Health (NIH) lists pomegranate as a natural remedy that may help treat or prevent prostate cancer. Pomegranate fruits reduce the level of prostate specific antigen, thereby preventing tumor growth.

Pomegranate ingredients may also prevent the development of breast, lung, and skin cancers. According to the department, additional studies are currently being conducted by the American Cancer Society. [13]

## **4. Alzheimer's disease**

The ingredients in pomegranate juice may help prevent the development of Alzheimer's disease. Pomegranate helps to restore the activity of certain enzymes that play a role in the treatment of this disease. [fifteen]

## **5. Digestion**

Numerous studies have repeatedly proven the benefits of pomegranate juice for people who suffer from bowel diseases.

However, it is worth noting that some people have experienced signs of diarrhea and symptoms of intestinal disease after eating pomegranate. [9]

## **6. Inflammatory conditions**

Polyphenols have anti-inflammatory and antioxidant properties. As a source of polyphenols, pomegranate is suitable for the treatment of various inflammatory conditions.

Rodent studies have shown that pomegranate extract may be beneficial for people with conditions such as:

- rheumatoid arthritis;
- intestinal diseases;
- metabolic and cardiovascular disorders. [four]

## **7. Arthritis**

Substances that contain pomegranate extract can prevent the development of osteoarthritis.

In 2016, scientists conducted clinical trials involving 38 people with osteoarthritis of the knee. Some used pomegranate juice, others did not. The test was carried out for 6 weeks. The results showed that pomegranate juice helped reduce cartilage breakdown. Participants who used it reported better performance and less stiffness than those who didn't.

Pomegranate extract may benefit people with rheumatoid arthritis due to its anti-inflammatory and antioxidant properties. <sup>[5]</sup>

## 8. Heart disease

Pomegranate juice can help lower blood pressure levels and protect the heart and arteries. It also reduces the level of oxidative stress in the cardiovascular system and reduces the risk of:

- formation of cholesterol;
- accumulation of unhealthy fats or oxidized lipids in blood vessels;
- development of atherosclerosis. <sup>[one]</sup>

## 9. Blood pressure

It has been scientifically proven that drinking pomegranate juice daily can help lower blood pressure. <sup>[fifteen]</sup>

## 10. Antimicrobial activity

People have used pomegranate for centuries due to its antimicrobial properties. Scientists have found evidence that pomegranate has antibacterial and antiviral effects, likely due to its ellagic acid content and some tannins. <sup>[6]</sup>

Based on these findings, scientists believe it could play a big role in food preservation, including preventing Salmonella contamination. It should be noted that there is currently insufficient evidence that pomegranate can fight pathogens in humans. However, in 2021, some scientists suggested that compounds found in pomegranate seeds could help fight a mosquito-borne virus known as the Mayaro virus. <sup>[eight]</sup>

## 11. Memory

If you drink this drink every day, memory improves significantly. Scientists conducted a study in which one group of people consumed pomegranate juice, and the other did not. After 4 weeks, those who consumed the pomegranate performed better on memory tests. <sup>[3]</sup>

## 12. Sexual activity

Historically, people have associated the [pomegranate](#) with fertility and abundance. The components contained in this drink can help maintain sexual desire. Earlier studies suggest that a lack of these components can lead to sperm dysfunction in men and a decrease in libido in women.

A 2014 study showed that drinking pomegranate juice can improve sperm quality and motility. <sup>[12]</sup>

## 13. Endurance and sports results.

The compounds present in pomegranate may help improve physical performance and aid in post-workout recovery. In 2019, scientists conducted a study that found that cyclists who consumed pomegranate took significantly longer to reach the point of exhaustion than those who did not. [6]

#### **14. Diabetes**

In the Middle East, pomegranate is believed to be a medicinal herb and treatment for diabetes, and some evidence supports this. The antioxidant activity of pomegranate may benefit people with type 2 diabetes. In particular, there has been evidence that the compounds found in pomegranate can help lower fasting blood glucose levels.

One pomegranate contains about 39 grams of sugar. If a person with diabetes wants to consume pomegranate juice, they should do so while maintaining their glucose levels within the range agreed with their doctor. [2,7]

#### **15. Wound healing**

Scientists have used pomegranate flowers and extract to heal wounds, noting a significant reduction in the size of wounds treated in this way. They also noticed that the structure of the new skin was well formed and there were few inflammatory cells in this area. [fourteen]

#### **Contraindications and possible harm of pomegranate juice**

Despite the large number of positive properties, pomegranate juice has contraindications:

- the presence of gastritis, gastric and duodenal ulcers, pancreatitis in the acute period and chronic diseases; [16]
- tendency to constipation;
- pregnancy and lactation.

#### **Recommended daily allowance**

Adults can drink pomegranate juice every day. To cleanse the body of toxins, this drink is recommended to be consumed three times a week diluted with water one to one. It should be given to children diluted in a ratio of 1:3 with water. Babies under 6 months of age should not consume this drink. [17]

#### **Making pomegranate juice**

Pomegranate juice is low in calories, so it is suitable for those who are on a diet. And in the composition with beetroot or carrot juice, it turns into a vitamin cocktail.

Pomegranate juice can be prepared using a juicer. But if you don't have it, no problem. Take a grenade, press it against the table and roll it. After that, make a small hole with a knife, insert a straw, turn it over a glass, and the juice will flow directly into the container. [12]

#### **Expert comment**

**Tatyana Eliseeva, nutritionist**

Pomegranate and juice from it has undeniable benefits for the body. Its antioxidant properties may improve overall health and reduce the risk of certain diseases. But, in the presence of chronic diseases, before adding this drink to your diet, you should consult your doctor.

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## **Pomegranate juice - 15 reasons to add it to your diet**

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail*: eliseeva.t@edaplus.info

**Abstract.** The article deals with the main properties of pomegranate juice and its effects on the human body. A systematic review of modern specialized literature and current scientific data is conducted. The chemical composition and nutritional value of the drink are indicated, the use of pomegranate juice in various types of medicine and effectiveness of its application at various diseases are considered. The potential adverse effects of pomegranate juice on the human body in certain medical conditions and diseases are analyzed separately.



## **Apple juice is a natural source of youth and longevity**

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail*: tkacheva.n@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article discusses the main properties of apple juice 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 drink are indicated, the use of apple juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of apple juice on the human body under certain medical conditions and diseases are analyzed separately.

*Keywords:* apple juice , useful properties, contraindications, composition, calorie content

Apple juice is one of the most widely used in the world. The popularity of the drink is due to its excellent taste properties, as well as the high content of various vitamins and minerals. According to Irish belief, this particular fruit is a symbol of eternal life and immortality, which is not at all surprising, given the benefits its tasty and healing juice gives to the human body.

### **Composition and calories**

The energy value of the finished product depends on the variety of [apples](#) from which it is made. For example, 100 grams of the fruit of the famous green variety "Granny Smith" (translated as "Granny Smith") contains only 59 kcal. The drink squeezed from them is considered to be quite low-calorie, which allows it to be included in various diet menus and healthy eating systems. <sup>[one]</sup>

Note! The sweeter the variety of fruit, the higher the nutritional value of the drink squeezed from them. For example, the calorie content of red gourmet apples is already 62 kcal per 100 grams of product. <sup>[2]</sup>

The chemical composition of apples of different varieties may vary slightly. Also, the final content of nutrients in fruits is affected by the conditions of their growth and ripening, the degree of irrigation of the land in the garden, etc.

### **Top 10 Health Benefits of Apple Juice**

Apple juice is considered one of the most beneficial for the human body - a freshly squeezed drink has numerous healing properties.

#### **1. Prevents dehydration**

Apple juice contains a large amount of water (about 88%), which makes it an excellent alternative to eliminate dehydration, dehydration, the body due to previous diseases. <sup>[4, 5]</sup> This is especially true in the treatment of children who do not like the taste of conventional medicinal drinks. But it should be borne in mind that only juice diluted with water can be used for medicinal purposes. Otherwise, due to the high sugar content, the drink can provoke additional retraction of fluid from the intestines - leading to aggravation of diarrhea. <sup>[6]</sup>

#### **2. Replenishes iron stores, helps in the treatment of anemia**

The systematic consumption of apple juice promotes improved absorption of iron into the body, which helps in the treatment and prevention of the development of such a very common disease in the modern world as iron deficiency anemia. <sup>[7]</sup>

#### **3. Reduces blood cholesterol levels**

Studies have shown that apple juice has a healing effect on blood vessels, reduces the risk of atherosclerosis and cardiovascular disease by reducing blood levels of bad cholesterol. <sup>[8,9,10]</sup>

#### **4. Is a Powerful Antioxidant**

Antioxidants act as a kind of shield for the body: they help slow down the aging process (including maintaining brain clarity - suppressing the first signs of Alzheimer's disease<sup>[11]</sup>), prevent the development of asthma and various types of cancer<sup>[12]</sup>, protect eye health, etc. In one apple such useful substances (vitamin C, niacin, flavonoids, quercetin, catechin, etc.) are contained in more than three oranges or eight bananas.<sup>[13, 14]</sup>

#### **5. Helps Strengthen Bones**

The fruit contains such useful minerals as calcium, phloridzin flavonoid, [boron](#) - they contribute to the compaction of the bone structure and prevent the development of osteoporosis, a systemic disease associated with calcium leaching from the bones of the skeleton. It is especially common in women during menopause.<sup>[15, 16]</sup>

#### **6. Reduces symptoms of PMS**

Due to the presence of vitamin C in the composition, it has a slight analgesic effect, improves mood.<sup>[17]</sup> A glass of tasty, refreshing apple juice is a much healthier and more enjoyable alternative to standard pharmacological pills.

#### **7. Improves intestinal peristalsis**

The drink contains pectin, soluble fiber, and sorbitol - acts as a natural laxative, helps to improve bowel function and prevent constipation.<sup>[18]</sup> That is why gynecologists recommend that patients drink natural apple juice during pregnancy.

#### **8. Reduces inflammation in the urinary system**

Apple juice has an anti-inflammatory effect, in particular, it helps to reduce inflammation of the kidneys and bladder, accelerates tissue regeneration processes, and protects against toxins.<sup>[19]</sup>

#### **9. Normalizes sleep**

Apples are a natural source of melatonin, a hormone responsible for normalizing sleep. Moreover, most of it is contained in the skin of the fetus. Just a few glasses of freshly squeezed apple juice, regularly drunk throughout the day, will help get rid of insomnia and get enough sleep during the night.<sup>[twenty]</sup>

#### **10. Affects the health of future babies**

Based on a number of studies, Scottish experts concluded that the children of women who systematically consumed fresh fruits and juices during pregnancy, in particular apple juice, are much less likely to suffer from asthma, respiratory diseases, manifestations of atopic dermatitis, etc.<sup>[21]</sup>

In addition, green apple juice is considered hypoallergenic. It is he who is recommended by pediatricians as the introduction of the first complementary foods into the diet of babies, but not in a pure form, but additionally diluted with water.

#### **Contraindications and harm of apple juice**

Like any other product, apple juice has certain contraindications and application features. In particular, lovers of a delicious drink should remember that after tasting, more thorough care of the oral cavity should be carried out. This is explained by the fact that the acid contained in the apple has a pH below 5.5, which leads to the gradual destruction of tooth enamel and the formation of caries. [22] It is recommended to drink juice through a straw or additionally rinse the teeth after contact with sweet and sour liquid.

In addition, the consumption of a delicious natural drink is recommended to be limited to people:

- suffering from pancreatitis, hyperacidity, peptic ulcers of the stomach and intestines; [23]
- having individual intolerance to the product;
- with exacerbation of food allergies.

In case of poisoning and infectious disorders of the intestine, drinking juice is undesirable - it can worsen the patient's condition. Diabetics should also be careful about the drink, do not exceed the norm recommended by a specialist, drink drinks from apples, mostly sour varieties.

of a drink rich in fructose can provoke such unpleasant phenomena in the body as flatulence, nausea, etc. [24] quantities.

### **Daily Value of Apple Juice for Children and Adults**

Initial acquaintance with juice, feeding babies, you need to start with ½-1 teaspoon of liquid at a time. If everything is in order, there is no allergy and digestion is not disturbed, you can gradually increase the portion.

**Note!** Sometimes the use of fruit juices, in particular apple juice, can provoke the occurrence of non-specific diarrhea in infants. [25] If suspicious symptoms are detected, the introduction of a new product should be stopped immediately and a pediatrician should be consulted.

If the body reacts normally to the product, then to fully saturate it with the necessary amount of natural vitamins and minerals, experts recommend consuming the following amount of apple juice daily:

- Babies under the age of 2 years - about 25-30 grams.
- Children 2-7 years old - about half a glass.
- Children and adolescents under 16 years old - up to 2 glasses.
- Adults - up to 800 ml.

Toddlers and adults with gastrointestinal problems should dilute the juice with water in proportions of 1:1, 1:2. It is recommended to drink juice between meals, at least 40 minutes before a meal, do not drink a drink before going to bed and do not exceed the allowable consumption rates.

### **Recommendations for the preparation and storage of the drink**

It is possible to produce juice at home from any apples (most often, the Macintosh variety is used in industrial production). But it should be borne in mind that a drink made from green fruits is more hypoallergenic and less high-calorie, but at the same time, red-fleshed apples contain more antioxidants. [26]

To prepare juice, apples need to be washed (if there is a wax film, it must first be removed by lowering the fruit for a few seconds in hot water with the addition of vinegar), cleaned from the core and wormholes. The skin should not be peeled - it contains a large amount of nutrients and pectin. Pieces

ready for processing can be passed through a juicer, interrupted with a blender or grated. In the last two options, the thick apple mass must be additionally squeezed through gauze, a clean cloth or a fine sieve. From the cake remaining after pressing, you can make a delicious marshmallow (if all the seeds have been carefully removed from the product) - in this way, the process of producing apple juice will be waste-free. In addition, it is in the cake that the largest amount of pectin remains.

When processing fruits through a juicer, pulp often forms. This juice is the most useful. But, if necessary, it can also be further filtered.

Keep in mind that a freshly squeezed drink in contact with air for more than half an hour begins to oxidize and loses most of its nutrients. Therefore, in order to get the maximum benefit, experts advise using only freshly squeezed juice without the addition of sugar and other preservatives (it is recommended to avoid iron accessories during cooking to prevent product oxidation) or immediately pasteurize it for subsequent safe storage.

You can not add sugar for storage - the juice contains a sufficient amount of tannins, which are an excellent natural preservative. But in order to preserve the product for a long time and prevent the development of pathogenic microbes in it, it must be further processed. Heat treatment, pasteurization is best in this case. The juice must be heated over low heat until foam ceases to form (do not allow boiling), remove it and pour the liquid into pre-heated jars. You can store the juice in a cool, dark place for up to 1 year.

### **Expert comment**

#### **Tatyana Eliseeva, nutritionist**

Natural apple juice is a great analogue of expensive vitamin complexes, created by nature itself. Drinking several glasses of a delicious drink every day, you have the opportunity to saturate the body with useful microelements, and also eliminate or prevent the development of many health problems without the use of additional medications. That is why we recommend including healthy and tasty apple juice in the daily diet of both adults and kids.

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### **Apple juice - a natural source of youth and longevity**

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail*: tkacheva.n@edaplust.info, eliseeva.t@edaplust.info

**Abstract.** The article deals with the basic properties of apple juice and its effects on the human body. A systematic review of modern specialized literature and up-to-date scientific data is given. The chemical composition and nutritional value of the drink are indicated, the use of apple juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potential adverse effects of apple juice on the human organism in certain medical conditions and diseases are analyzed separately.



### **Pear juice - a natural elixir of health and beauty**

*Anna Shelestun*, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail*: shelestun.n@edaplust.info, eliseeva.t@edaplust.info

**Abstract.** The article discusses the main properties of pear juice 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 drink are indicated, the use of pear juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of pear juice on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* pear juice , useful properties, contraindications, composition, calorie content

The benefits and healing properties of delicious and fragrant pear juice have been known to mankind since ancient times. Even the ancient physician Galen, who healed the Roman nobility almost 2000 years ago, used this drink as an effective medicine to relieve the symptoms of fever, and in ancient China, pear tree fruits were considered a symbol of longevity. A pear drink is no less popular among modern admirers of traditional medicine.

### **Composition and calories**

Despite the sweet taste, pear juice is considered quite low in calories. For example, 100 grams of fresh fruit of the Bartlett pear (named after its creator, the famous American breeder Enoch Bartlett) contains only 63 kcal. <sup>[1]</sup> In addition, the characteristic sweetness of pears comes from the [fructose they contain](#). For its processing and assimilation, the body does not need to release insulin into the blood - even people with thyroid problems can drink such juice without risk to health.

And the fruit is also rich in healthy vitamins and amino acids: lutein and zeaxanthin (strengthens the retina), beta-carotene (is a powerful antioxidant - reduces the risk of developing cataracts, improves brain function <sup>[2]</sup>, helps in tissue repair and healing), folates, folic acid, (prevention of anemia) <sup>[3]</sup>, aspartic acid (normalization of the immune system), etc. Most researchers agree that most of the nutrients are concentrated in the skin of the fetus. <sup>[4]</sup> Therefore, for the preparation of fresh, it is recommended to use whole pears without removing the skin from them.

### **Top 7 Health Benefits of Pear Juice**

Freshly squeezed fresh pear juice is a natural healing potion that fully replaces numerous medications.

#### **1. Restores the functioning of the cardiovascular system**

Pears are rich in [vitamin C](#), potassium, and other useful trace elements, including flavonoids, and antioxidants. Studies confirm that the systematic consumption of freshly squeezed pear juice has a positive effect on the body of the subjects. They clear blood vessels, lower blood pressure, improve overall well-being. <sup>[5]</sup>

#### **2. Helps normalize bowel function**

Pear juice, in comparison with all other fruit juices, contains the largest amount of sorbitol <sup>[6]</sup>, which has an excellent choleric and laxative effect. Recommended in the treatment and prevention of constipation.

#### **3. Cleanses the body of toxins and toxins**

Pear juice has a powerful antioxidant effect <sup>[7, 8]</sup>. Helps protect cells from damage and destruction - prevents aging of the body, cleanses it of accumulations of toxins, toxins, promotes the removal of salts of heavy metals, improves immunity.

#### **4. Improves the condition of the skin and hair**

The fruit contains biotin, vitamin B7, also called the beauty vitamin. In addition to the fact that the microelement normalizes the functioning of the nervous system and intestinal microflora, it also helps to improve the structure of the skin, the growth of healthy nails and hair. <sup>[9]</sup> Drinking several glasses of fragrant and tasty pear juice every day, you can save a lot on expensive trips to beauticians.

#### **5. Reduces hangover severity**

According to scientists' studies, pear juice, in particular, fresh, obtained from the fruits of the Korean pear, significantly reduces the symptoms of a hangover and alcohol detoxification of the body. But keep in mind that to achieve such an amazing effect, drinking a saving drink is recommended not after a libation, but before the start of the feast, before drinking alcohol. <sup>[ten]</sup>

#### **6. Has an antibacterial and anti-inflammatory effect**

The fruits of the pear, especially in its skin, contain such a unique natural component as arbutin. <sup>[11]</sup> The substance has powerful anti-inflammatory, antiseptic and antibacterial properties. Experts recommend drinking pear juice from unripe pears (they have the maximum antimicrobial activity <sup>[12]</sup>) for the prevention and treatment of gastritis, urinary system, including exacerbation of cystitis or inflammation of the kidneys.

#### **7. Relieves the effects of stress, improves mood**

Delicious fruits contain many useful trace elements, including glycine, an amino acid that stabilizes the central nervous system. <sup>[1]</sup> The drink reduces nervous tension, as well as increases mental performance and improves sleep - an excellent replacement for medical sedatives.

#### **Contraindications and harm of pear juice**

Like many other products, pear fresh has a number of contraindications and features of use. For example, it is not recommended to drink it on an empty stomach, unless you are pursuing certain medical purposes. This is due to the fact that pear juice drunk on an empty stomach has an immediate laxative effect (contains a large amount of fructose and fiber). <sup>[13]</sup>

It is also recommended to treat this drink with caution to persons suffering from irritable bowel syndrome <sup>[14]</sup> and individual intolerance to the product.

#### **Recommended intake for adults and children**

The fruit is hypoallergenic. Therefore, pediatricians recommend that the juice obtained from it be included in the menu of babies from the age of 6 months as an initial complementary food. The first acquaintance of crumbs with a delicious fragrant drink should begin with a few drops (it is better to dilute the concentrated natural juice by half with water). If there are no unpleasant consequences in the form of allergies or digestive disorders, you can gradually increase the dose.

To achieve the proper preventive and therapeutic effect, nutritionists and phytotherapists advise adult patients to drink at least 600 ml of a healthy drink daily.

#### **Recommendations for the preparation and storage of the drink**

To get the maximum benefit, it is recommended not to use store-bought juice, but freshly squeezed. Moreover, it should be drunk immediately after preparation, avoiding oxidation. With prolonged contact with air, the concentration of nutrients in the drink is significantly reduced. In order to keep them as long as possible and prevent the development of pathogenic bacteria in the juice, it is recommended to thermally process it - quickly heat it up to 75-80 degrees Celsius, and then pour it into containers and cool it. You can store the canned drink away from direct sunlight at temperatures from 0°C to +20°C for a year.

## Expert comment

### Tatyana Eliseeva, nutritionist

Pear juice is a real storehouse of useful vitamins and microelements, which will help you get rid of numerous ailments and health problems without the use of expensive medicines. That is why I recommend adding this delicious and fragrant dessert to the daily menu of all members of your family!

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## Pear juice - a natural elixir of health and beauty

*Shelestun Anna*, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail*: shelestun.a@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article deals with the main properties of pear juice and its effects on the human body. A systematic review of modern specialized literature and up-to-date scientific data is conducted. The chemical composition and nutritional value of the drink are indicated, the use of pear juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potential adverse effects of pear juice on the human body in certain medical conditions and diseases are analyzed separately.



## Plum Juice - 10 Scientifically Proven Health Benefits

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail*: eliseeva.t@edaplus.info

**Abstract.** The article discusses the main properties of plum juice 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 drink are indicated, the use of plum juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of plum juice on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* plum juice , useful properties, contraindications, composition, calorie content

Plum juice, despite its pleasant taste and aroma, is not as popular as fresh fruit juices. And absolutely in vain! It is known that every morning the Queen of England begins with two plums, which she eats before breakfast. Perhaps this is precisely the secret of the longevity of the famous august person. This is not at all surprising, because the fleshy fragrant fruit contains many useful vitamins and minerals.

### **Composition and calories**

Plum juice has a fairly low calorie content (100 grams of fresh plums contains only 46 kcal). It contains a lot of water (87.2%), a minimum of fat (0.28%) and a small amount of carbohydrates (11.4%). <sup>[1]</sup> This unique composition allows people who strictly monitor their weight to consume the drink, as well as include it in healthy nutrition systems and a variety of diet menus.

Fresh [plums](#) are rich in numerous vitamins and microelements. In addition to the standard vitamin C, calcium and iron, it contains a large amount of:

- beta-carotene - a powerful antioxidant responsible for the health of the skin and eyes;
- potassium - contributes to the stabilization of the nervous system and blood pressure, stabilizes the amount of sugar in the blood, removes excess water and salt from the body; <sup>[2]</sup>
- phosphorus - ensures the full growth of bone tissue <sup>[3]</sup>, stabilizes the work of muscles and the central nervous system;
- lutein and zeaxanthin - natural organic pigments, antioxidants responsible for visual acuity and preventing the development of various eye diseases. <sup>[four]</sup>

The pulp and peel of plums of dark varieties are especially rich in useful substances. This fact must be taken into account when selecting fruits for the independent production of a future aromatic drink.

### **Top 7 Health Benefits of Plum Juice**

Numerous studies have proven that regular consumption of natural plum juice helps to solve many health problems without the additional use of pharmacological agents.

#### **1. Reduces blood pressure**

Anthocyanins, natural pigments found in fresh plum juice, help to relax the walls of blood vessels and prevent the formation of cholesterol plaques in them. Drinking only one glass of natural fresh plums daily, you can significantly reduce blood pressure without resorting to medications. <sup>[5]</sup>

#### **2. Prevents kidney stones**

Plum juice has antibacterial properties, slows down growth and prevents the formation of struvite crystals, which subsequently form sand and stones in the urinary system. The systematic use of fresh plums is an excellent prevention of urolithiasis. <sup>[6]</sup>

### **3. Slows down the manifestation of cognitive impairment**

The product is rich in antioxidants, substances that protect cells from damage, and the body from premature aging. Plum juice helps prevent the development of age-related diseases such as Parkinson's and Alzheimer's diseases, improves memory and brain function in general. <sup>[7]</sup>

### **4. Boosts Metabolism, Helps Lose Weight**

Plums contain a large amount (3 times more than peach) of powerful antioxidants, polyphenols. Studies show that the systematic consumption of delicious plum fresh helps to speed up metabolism, and, accordingly, prevents weight gain. <sup>[eight]</sup>

### **5. Strengthens bone tissue**

A drink squeezed from the pulp of the fruit helps to strengthen bone tissue and even restores bone density. It is recommended as a prophylactic for incipient osteoporosis. <sup>[9]</sup>

### **6. Has an antiviral effect**

Scientists have proven that Japanese plum juice concentrate is an excellent antiviral agent - drinking a delicious sweet and sour drink allows you to easily survive the cold season and even prevent infection of the body with the dangerous influenza A virus. <sup>[10]</sup>

### **7. Helps improve intestinal motility**

The fruit contains a large amount of fiber and sorbitol - act as a natural laxative. Drinking several glasses of delicious sweet and sour fresh every day, you can easily get rid of constipation, improve the smooth functioning of the intestines and lose weight without any problems. <sup>[eleven]</sup>

### **Contraindications and features of the use of plum juice**

Despite the numerous useful properties, plum juice has some contraindications and features of use. In particular, the drink is prohibited for people with individual intolerance to the product. Also, while enjoying another portion of a delicious smoothie, you should remember that it provokes manifestations of flatulence. <sup>[12]</sup> To avoid unpleasant consequences for the body, experts advise adhering to the recommended intake of the drink and avoiding its intake on an empty stomach.

### **Recommended intake of plum juice for babies and adults**

Introducing a new product, in particular plum juice, into the diet of babies should be done with caution, starting with a few drops diluted with water. If there is no negative reaction from the gastrointestinal tract and skin, you can gradually increase the dose, bringing it gradually to 25-30 grams.

To provide the body with a maximum of useful substances and vitamins, children under the age of 7 are recommended to drink about 100 grams of a delicious smoothie daily, teenagers under 16 years old - up to two glasses, adults - about half a liter.

### **Recommendations for the preparation and storage of a healthy drink**

In addition to the fact that many doctors recommend adding healthy fresh plums to the daily diet of kids and adults as a drink that helps eliminate and prevent many health problems, it is also often used

in cooking. A variety of sauces for meat and salad dressings, various desserts, etc. are prepared on the basis of fragrant plum juice with an original sweet and sour taste. This fresh juice also serves as an excellent base for making nourishing restorative masks for skin and hair.

Making natural plum juice at home is very simple. It is necessary to take ripe plums, rinse them thoroughly, separate the pulp from the seeds and pass it through a juicer. It is not necessary to remove the skin from the fruit. It contains a large amount of [anthocyanins](#), flavonoids, which give the drink an intense color and help reduce intestinal inflammation. <sup>[13]</sup>

The cake remaining after squeezing is diluted with water, brought to a boil, after cooling, squeezed through gauze or a colander, and the squeezed liquid is combined with juice. If the drink is too concentrated, it is recommended to further dilute it with water in a ratio of 1:1 before drinking. Freshly squeezed juice can be stored in the refrigerator for several days. But in order to preserve the maximum of useful substances and prevent the development of pathogenic bacteria in the drink, it is recommended to subject it immediately after pressing to gentle heat treatment, pasteurization.

The technique involves rapid heating of the juice, preventing it from boiling, pouring into sterile jars, followed by their pasteurization in a water bath for a third of an hour at a temperature of 90 degrees Celsius. Then the container with liquid is hermetically rolled up with lids and can be stored in a cool dark place for up to 1 year.

## Expert comment

### Tatyana Eliseeva, nutritionist

Natural plum juice is not only a delicious dessert, but also a real storehouse of useful trace elements. Introduce a fragrant sweet and sour smoothie from plums into your family's daily diet and make sure that you can get rid of numerous health problems without using expensive and not always harmless pharmacy products!

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### **Plum juice - 10 scientifically proven health benefits**

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail: eliseeva.t@edaplus.info*

**Abstract.** The article deals with the basic properties of prune juice and its effects on the human body. A systematic review of modern specialized literature and current scientific data is carried out. Chemical composition and nutritive value of the drink is indicated, use of plum juice in different kinds of medicine and effectiveness of its application at various diseases are considered. Potentially adverse effects of prune juice on the human organism under certain medical conditions and diseases are analyzed separately.



## Grape Juice: 7 Proven Health Benefits

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the EdaPlus.info project

*E-mail:* tkacheva.n@edaplust.info, eliseeva.t@edaplust.info

**Abstract.** The article discusses the main properties of grape juice 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 drink are indicated, the use of grape juice in various types of medicine and the effectiveness of its use in various diseases are considered. The potentially adverse effects of grape juice on the human body under certain medical conditions and diseases are analyzed separately.

*Key words:* grape juice , useful properties, contraindications, composition, calorie content

Mankind has known since ancient times that delicious and fragrant fresh grape juice not only quenches thirst, but is also a very effective cure for many diseases. There is even such a thing as “ampelotherapy” (from the Greek “ampelos” is translated as grapes, and “therapy” means treatment), that is, getting rid of ailments with the help of grapes and grape juice. This method of treatment is very popular today.

### Composition and calories

Grape juice contains a large amount of water (84.5%) <sup>[1]</sup>, as well as many biologically active substances. The drink fully saturates the body with moisture, all the necessary vitamins and minerals.

In particular, the composition of the fresh includes:

- Potassium - strengthens bones, contributes to the normalization of blood pressure, significantly reduces the risk of strokes. <sup>[2]</sup>

- Phosphorus - helps the absorption of calcium in the body, strengthening the bone skeleton and teeth. <sup>[3]</sup>
- **B vitamins** : thiamine (improves brain function <sup>[4]</sup>), riboflavin (reduces the toxic effect of drugs, reduces the risk of oncological processes <sup>[5]</sup>), niacin, nicotinic acid, or vitamin PP, (reduces cholesterol, promotes vasodilation and lowering blood pressure, is used in the treatment of depression <sup>[6]</sup>).

The calorie content of freshly squeezed juice is quite low - it is only 60 kcal per 100 grams of product, which allows it to be consumed by people who strictly monitor weight. And fresh white grapes are even recommended by nutritionists as a fight against obesity. <sup>[7, 8]</sup>

## **Top 7 Health Benefits of Grape Juice**

### **1. Helps to achieve a slim figure**

Despite the fairly large presence of fructose and glucose, grape juice also contains an antioxidant that is not found in almost any other fresh juice - [tartaric acid](#). <sup>[9]</sup> A unique nutritional supplement that improves digestion, speeds up metabolism and raises the vitality of the body. Drinking several glasses of natural grape juice every day, you can significantly speed up the process of losing weight <sup>[10]</sup> and find a great mood!

### **2. Slows down the aging process**

Grapes contain polyphenols, powerful antioxidants, the function of which is to protect plants from external influences of negative factors: diseases, ultraviolet radiation, etc. Studies show that these protective properties are also transferred to people whose diet contains grape juice. In particular, the polyphenols present in the aromatic drink protect the cells of the body from damage, oxidation and natural aging, and also help reduce the manifestations of various inflammatory processes. <sup>[11, 12]</sup>

### **3. Improves vision**

Grape juice contains a large amount of beta-carotene and vision-beneficial carotenoids, lutein and zeaxanthin. Studies have shown that drinking several glasses of freshly squeezed grape juice daily helps protect the lens and retina from the harmful effects of light flux, and also prevents diseases such as cataracts and diabetic retinopathy. <sup>[13, 14]</sup>

### **4. Prevents the formation of thrombosis**

The presence of a large amount of polyphenols in purple-hued grape juice (much more than in citrus fresh juices) prevents the formation of platelets in the blood, and, as a result, reduces the risk of thrombosis. As an effective prevention of strokes and heart attacks, it is recommended to drink at least a few glasses of red grape juice daily. <sup>[15]</sup> A very tasty and safe alternative to standard medications!

### **5. Stabilizes sleep**

Grapes and products derived from them, in particular fresh grape juice, contain natural melatonin, a hormone that improves sleep quality. <sup>[16]</sup> Drinking a glass of delicious refreshing drink in the evening, you not only saturate the body with essential vitamins and minerals, but also help it fall asleep easier.

### **6. Protects the kidneys and liver**

The use of grape juice rich in antioxidants prevents the degeneration of liver and kidney tissues, promotes their natural cleaning and reliable protection from heavy metal damage. <sup>[17, 18]</sup>

## **7. Strengthens the immune system**

It has been proven that regular intake of grape juice, in particular, fresh juices from dark berries, for example, Concord varieties, significantly improves the immune system and well-being of a person, helps to survive the cold season safely and without risk to health. <sup>[19]</sup>

Also, grape juice rich in useful substances is often used in cosmetology - it is used to produce moisturizing, brightening and rejuvenating masks and creams for the face and body, cosmetics that activate the hair follicles and promote the growth of healthy thick hair, etc.

## **Contraindications and harm of grape juice**

With many positive properties, grape juice has a number of contraindications and application features. In particular, grape juice is recommended to use with caution:

- persons with a predisposition to type 2 diabetes <sup>[20]</sup> ;
- people with food allergies and individual intolerance to the product.

Lovers of a delicious drink should also be aware that grape juice corrodes tooth enamel, which can lead to cavities and tooth decay. <sup>[21]</sup> Therefore, it is recommended to use fresh juice through a straw or rinse your teeth with warm clean water immediately after contact with the liquid.

## **Recommended consumption rates for grape juice**

During ampelotherapy, treatment with grape juice, it is recommended to drink a fresh drink, independently squeezed from ripe whole berries, in an amount of about half a liter per day. To reduce concentration and better assimilation, nutritionists advise additionally diluting freshly squeezed fresh juice with clean digested water in a 1: 1 ratio.

Also, experts advise not to drink juices on an empty stomach and immediately after eating. To avoid unpleasant consequences for the body, drink a drink between meals.

## **How to make grape juice at home**

For a healing effect, it is recommended to use a freshly squeezed drink, and not an industrial analogue containing preservatives that are unsafe for the body. For juice extraction, you can use grapes of any variety, but it is better to choose moderately sweet, with a low content of acids, for example, Chardonnay, Phoenix, Aligote, Orion, etc. It should also be borne in mind that dark grape varieties contain more flavonoids and antioxidants, substances that have anti-inflammatory and antitumor properties.

To prepare the juice, beautiful clusters with whole berries are selected, carefully separated from the branches and squeezed through cheesecloth using a press.

**Note!** In order to convey a dark color to the drink, for the maximum transition of coloring pigments, the berries must first be blanched - dipped in boiling water for several minutes, and then proceed to the extraction.

Drinking the drink is recommended within half an hour after preparation. This is due to the fact that over time it oxidizes from contact with oxygen and loses most of the nutrients. For long-term and safe storage of freshly squeezed juice, maximum preservation of vitamins and microelements, it is recommended to conserve it immediately after extraction using the pasteurization method. Pasteurized juice can be stored in a cool place without direct sunlight for several years.

## Expert comment

### Tatyana Eliseeva, nutritionist

Grape juice is a real elixir of youth, beauty, longevity and excellent health. I recommend including it in your daily diet and make sure from your own experience that you can get rid of many health problems without the use of medications, but with the help of natural and familiar products donated by nature itself!

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### **Grape juice: 7 proven benefits for the body**

*Tkacheva Natalia*, phytotherapist, nutritionist

*Eliseeva Tatyana*, editor-in-chief of the project EdaPlus.info

*E-mail*: tkacheva.n@edaplus.info, eliseeva.t@edaplus.info

**Abstract.** The article deals with the main properties of grape juice and its effects on the human body. A systematic review of modern specialized literature and up-to-date scientific data is conducted. The chemical composition and nutritional value of the drink are indicated, the use of grape juice in various types of medicine and the effectiveness of its use in various diseases are considered. Potentially adverse effects of grape juice on the human body in certain medical conditions and diseases are analyzed separately.