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In issue:

Useful and dangerous
properties of juices:

- Barberry
- Hawthorn
- Goji berries
- Irga
- Cowberry
- Schisandra
- Sea buckthorn



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Barberry Juice: 10 Scientifically Proven Health Benefits

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Abstract. Few people know that berries, the taste of which most of us have known since childhood thanks to the famous barberry lollipops, are also widely used in modern cooking, cosmetology and even folk medicine.

A variety of jams, compotes and marmalades are made from the fruits of barberry, or as it is also called the candy tree. The oblong, sour, wine-red berries are very popular in Caucasian and Asian cuisines - they are used as an original seasoning when preparing pilaf and risotto. They also squeeze healthy juice out of barberry pulp. The drink not only tastes good, but also helps to cope with many problems of the body. Natural barberry juice is practically not widely available, but you can prepare it yourself.

Key words: barberry , barberry juice , beneficial properties, contraindications, composition, calorie content

Composition and calorie content

Fresh barberry berries are low in calories - they contain only 29 kcal. But you need to take into account that when dried, their calorie content increases significantly - up to 150 kcal. In addition, they contain practically no fat and protein, and they contain relatively few carbohydrates - 7.9%. But barberry juice contains beneficial microelements and vitamins in abundance. ^[1]

For example, he is rich:

- Vitamin C (213% of the required daily dose in 100 grams of natural drink) is a water-soluble antioxidant that helps the body fight viruses and colds, prevents the development of scurvy ^[2] and periodontal disease. ^[3] It is noteworthy that smokers' bodies require a larger daily dose of ascorbic acid (140 mg versus 100 mg) for full functioning. ^[4]
- Vitamin E, or alpha-tocopherol, (28% of the daily value) - has antioxidant properties ^[5], provides prevention of cardiovascular diseases ^[6], strengthens the immune system and improves the functioning of the nervous system, supports the reproductive functions of women - improves the menstrual cycle and alleviates the symptoms of menopause.
- Iron (145%) - helps transport oxygen to the body's cells and avoid the risk of developing iron deficiency anemia ^[7], accelerates metabolism and weight loss processes.

Also, barberry, including its berries, contains a large amount of organic acids (except for the aforementioned ascorbic acid, these are malic, tartaric, citric) and one of the most powerful and beneficial plant alkaloids for humans, berberine. ^[8] The substance exhibits antioxidant and geroprotective properties (slows down the aging process of the body) - it is successfully used to treat inflammation, viral and infectious diseases, osteochondrosis, Alzheimer's disease, etc. ^[9]

Top 10 beneficial properties of barberry juice

1. Used in the prevention and treatment of diabetes

It is known that taking traditional pharmaceutical drugs aimed at preventing and treating diabetes causes side effects in many patients. In addition, in most cases they are very expensive. Barberry juice, rich in the alkaloid berberine, is an excellent alternative to standard medications and is quite affordable - you can prepare it yourself from berries collected or purchased on the market. The drink shows good results in the prevention and treatment of endocrine diseases, including the treatment of diabetes - it helps lower blood sugar levels and, as experts hope, will soon play a decisive role in the discovery of new effective antidiabetic drugs. ^[10]

2. Good for cardiovascular health

Numerous studies show that systematic consumption of barberry juice, rich in beneficial microelements, has a positive effect on the cardiovascular system. The drink helps reduce blood pressure, stabilizes blood lipid levels and improves vascular health ^[11], has antiarrhythmic properties, and prevents the risks of coronary heart disease ^[12] and other cardiovascular diseases.

3. Promotes weight loss process

Barberry juice contains the isoquinoline alkaloid berberine. The substance accelerates the metabolic process ^[13] and also dulls appetite, which helps to lose weight in a relatively short time and avoid the risk of developing obesity. Do you want to reduce the volume of your figure without extra effort? Add delicious fresh barberry to your diet menu!

4. Removes toxins from the body

It is known that berberine, which is part of the barberry pulp, in addition to having numerous beneficial properties, is also considered an effective antidote, antidote - it promotes the rapid removal of natural and chemical toxins from all organs of the body: heart, brain, kidneys, liver, etc. d. ^[14]

5. Good for the kidneys

Barberry juice has long been used as an effective homeopathic remedy for relieving kidney pain, as well as dissolving kidney and liver stones. ^[15] Add the drink to your diet to see from your own experience its effectiveness and get rid of dangerous “neighbors” without surgical intervention.

6. Effective in treating diarrhea

Due to the antimicrobial properties of the alkaloid berberine, barberry juice shows good effectiveness in the treatment of diarrhea, including viral ones, even in the late stages of the disease. ^[16]

7. Has an analgesic effect

It has been proven that berberine, which is part of the fresh juice, effectively suppresses inflammatory markers and has excellent analgesic properties. ^[17] Try replacing standard pharmacy painkillers with a natural, tasty analogue, barberry juice, at the next attack of headache or any other pain.

8. Boosts immunity

Barberry belongs to the category of immunomodulatory plants - daily consumption of juice squeezed from elongated sour berries provides the body with almost all the vitamins and microelements necessary for proper functioning and strengthens the immune system. ^[18]

9. Shows good results in cancer therapy

Medical experiments prove that berberine, as one of the main components of barberry juice, has a wide pharmacological spectrum, including a powerful inhibitory effect on several types of cancer. ^[19] The alkaloid induces tumor apoptosis, suppresses metastasis, and even makes tumor cells more sensitive to drugs and treatments used. ^[20]

10. Restores digestive tract health

The same miraculous berberine cures almost all diseases of the digestive system: it neutralizes toxins and harmful bacteria, in particular *Helicobacter pylori*, which causes the development of diseases such as gastritis, stomach and duodenal ulcers, etc. ^[21], protects the intestinal epithelium from damage, has hepatoprotective properties - improves the condition of the liver in non-alcoholic fatty disease. ^[22]

Features of use and contraindications of barberry juice

In its pure form, barberry juice is quite sour (in cooking it is even used as a substitute for vinegar or lemon). To improve the taste, it is recommended to dilute the drink with water or combine it with sweeter fresh juices: grape, pineapple, strawberry, peach, etc.

Also, when tasting or treating, it is not recommended to exceed the recommended dose of the drink. Excessive amounts of berberine, consumed at one time or in a short period of time, can negatively

affect health, including intoxication of the body. For the same reason, it is not recommended to drink barberry juice for children under 12 years of age, nursing mothers and pregnant women. ^[23] Moreover, it is strictly contraindicated for the latter, as it promotes contraction of the uterine muscles, which can lead to the risk of premature birth.

Recommendations for the preparation and storage of juice made from barberry fruits

To prepare the drink, it is necessary to select fully ripe whole berries (unripe fruits contain too many alkaloids - consuming them or products derived from them, including juice, can cause an undesirable reaction of the body, including poisoning).

After washing the berries, they need to be filled with water and boiled for a few minutes to soften, then discarded in a colander and pressed through a press. The remaining pomace can be additionally poured with hot boiled water (60°C) and after half an hour squeezed again. The resulting liquid can be consumed immediately in pure or diluted form (between meals for better absorption of nutrients). The remaining juice can be sent for long-term storage by pasteurizing it and then preserving it, or by freezing it in special containers or zip bags.

Expert commentary

Tatyana Eliseeva, nutritionist, nutritionist

Barberry juice is a unique drink that allows you to solve many problems of the body without the use of expensive and not always safe pharmaceutical products. In particular, with the help of refreshing fresh juice, you can protect yourself from viruses and colds, improve the functioning of the gastrointestinal tract and cardiovascular system, get rid of pain of various types and even prevent the development of oncology. And you can verify the veracity of this statement from your own experience by including delicious barberry juice in your diet!

Literature

1. Rahimi-Madiseh, M., Lorigoini, Z., Zamani-Gharaghoshi, H., & Rafieian-Kopaei, M. (2017). *Berberis vulgaris*: specifications and traditional uses. *Iranian Journal of Basic Medical Sciences*, 20(5), 569. DOI: 10.22038/IJBMS.2017.8690
2. Eliseeva, T., & Mironenko, A. (2018). Vitamin C (ascorbic acid) description, benefits and where it is contained. *Journal of Healthy Nutrition and Dietetics*, 2(4), 33-44.
3. Tada, A., & Miura, H. (2019). The relationship between vitamin C and periodontal diseases: a systematic review. *International journal of environmental research and public health*, 16(14), 2472. DOI: 10.3390/ijerph16142472
4. Gerster, H. (1987). Human vitamin C requirements. *Zeitschrift für Ernährungswissenschaft*, 26, 125-137. DOI: 10.1007/BF02019608
5. Eliseeva, T., & Mironenko, A. (2018). Vitamin E description, benefits, effect on the body and the best sources. *Journal of Healthy Nutrition and Dietetics*, 4(6).
6. Sozen, E., Demirel, T., & Ozer, N. K. (2019). Vitamin E: Regulatory role in the cardiovascular system. *Iubmb Life*, 71(4), 507-515. DOI: 10.1002/iub.2020
7. Eliseeva, T. (2021). Iron (Fe) for the body – 30 best sources and importance for health. *Journal of Healthy Eating and Dietetics*, 4(18), 66-75.

8. Imanshahidi, M., & Hosseinzadeh, H. (2008). Pharmacological and therapeutic effects of *Berberis vulgaris* and its active constituent, berberine. *Phytotherapy research*, 22(8), 999-1012. DOI: 10.1002/ptr.2399
9. Imenshahidi, M., & Hosseinzadeh, H. (2016). *Berberis vulgaris* and berberine: an update review. *Phytotherapy research*, 30(11), 1745-1764. DOI: 10.1002/ptr.5693
10. Ajebli, M., Khan, H., & Eddouks, M. (2021). Natural alkaloids and diabetes mellitus: A review. *Endocrine, Metabolic & Immune Disorders-Drug Targets (Formerly Current Drug Targets-Immune, Endocrine & Metabolic Disorders)*, 21(1), 111-130. DOI: 10.2174/1871530320666200821124817
11. Cicero, A. F., & Baggioni, A. (2016). Berberine and its role in chronic disease. *Anti-inflammatory Nutraceuticals and Chronic Diseases*, 27-45. DOI: 10.1007/978-3-319-41334-1_2.
12. Abushouk, A. I., Salem, A. M. A., & Abdel-Daim, M. M. (2017). *Berberis vulgaris* for cardiovascular disorders: a scoping literature review. *Iranian Journal of Basic Medical Sciences*, 20(5), 503. DOI: 10.22038/IJBMS.2017.8674
13. Firouzi, S., Malekhamadi, M., Ghayour-Mobarhan, M., Ferns, G., & Rahimi, H. R. (2018). Barberry in the treatment of obesity and metabolic syndrome: possible mechanisms of action. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, 699-705. DOI: 10.2147/DMSO.S181572
14. Mohammadzadeh, N., Mehri, S., & Hosseinzadeh, H. (2017). *Berberis vulgaris* and its constituent berberine as antidotes and protective agents against natural or chemical toxicities. *Iranian journal of basic medical sciences*, 20(5), 538. DOI: 10.22038/IJBMS.2017.8678
15. Arayne, M. S., Sultana, N., & Bahadur, S. S. (2007). The berberis story: *Berberis vulgaris* in therapeutics. *Pakistan journal of pharmaceutical sciences*, 20(1), 83-92. PMID: 17337435
16. Wang, J., Yang, G., Zhang, L., Zhang, J., Wang, J., Zou, Y., & Wang, J. (2022). Berbamine hydrochloride inhibits bovine viral diarrhea virus replication via interfering in late-stage autophagy. *Virus Research*, 321, 198905. DOI: 10.1016/j.virusres.2022.198905
17. Hashemzaei, M., & Rezaee, R. (2021). A review on pain-relieving activity of berberine. *Phytotherapy Research*, 35(6), 2846-2853. DOI: 10.1002/ptr.6984
18. Kalmarzi, R. N., Naleini, S. N., Ashtary-Larky, D., Peluso, I., Jouybari, L., Rafi, A., ... & Kooti, W. (2019). Anti-inflammatory and immunomodulatory effects of barberry (*Berberis vulgaris*) and its main compounds. *Oxidative medicine and cellular longevity*, 2019. DOI: 10.1155/2019/6183965
19. Samadi, P., Sarvarian, P., Gholipour, E., Asenjan, K. S., Aghebati-Maleki, L., Motavalli, R., ... & Yousefi, M. (2020). Berberine: A novel therapeutic strategy for cancer. *IUBMB life*, 72(10), 2065-2079. DOI: 10.1002/iub.2350
20. Devarajan, N., Nathan, J., Mathangi, R., Mahendra, J., & Ganesan, S. K. (2023). Pharmacotherapeutic values of berberine: A Chinese herbal medicine for the human cancer management. *Journal of Biochemical and Molecular Toxicology*, 37(3), e23278. DOI: 10.1002/jbt.23278
21. Sabbagh, P., Javanian, M., Koppolu, V., Vasigala, V. R., & Ebrahimpour, S. (2019). *Helicobacter pylori* infection in children: an overview of diagnostic methods. *European journal of clinical microbiology & infectious diseases*, 38, 1035-1045. DOI: 10.1007/s10096-019-03502-5
22. Song, D., Hao, J., & Fan, D. (2020). Biological properties and clinical applications of berberine. *Frontiers of Medicine*, 14, 564-582. DOI: 10.1007/s11684-019-0724-6
23. Rad, S. Z. K., Rameshrad, M., & Hosseinzadeh, H. (2017). Toxicology effects of *Berberis vulgaris* (barberry) and its active constituent, berberine: a review. *Iranian journal of basic medical sciences*, 20(5), 516. DOI: 10.22038/IJBMS.2017.8676

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Barberry juice: 10 scientifically proven health benefits for better health

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Abstract . Barberry juice is a unique drink that allows you to solve many problems of the body without the use of expensive and not always safe for health pharmacy remedies. In particular, with the help of a refreshing fraiche can be protected from viruses and colds, adjust the gastrointestinal tract and cardiovascular system, get rid of pain of various types and even prevent the development of cancer. And you can make sure of the truth of this statement on your own experience by including in your diet delicious barberry juice!



Hawthorn juice: benefits and harms of the drink for the body , recommendations for use

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Abstract. Hawthorn, popularly called “boyarka” or “lady”, as well as “thorn” for its prickly branches, is an excellent honey plant, as well as one of the most useful plants. Flowers, bark and, of course, the

fruits of the bush are widely used in folk medicine. Decoctions, tinctures, teas are prepared from red sweet and sour berries, and tasty and healing fresh fruit is also squeezed out, which helps get rid of many health problems.

Key words: hawthorn, hawthorn juice , beneficial properties, contraindications, composition, calorie content

Composition and calorie content

Hawthorn berries are low in calories - 100 grams of pulp contain 52 kcal. They contain no fat, little protein (0.8%) and a small amount of carbohydrates (14%). But there are plenty of vitamins and useful microelements.

In particular, hawthorn juice is a rich source of the following nutrients:

- Vitamin C. There is almost 3 times more ascorbic acid in hawthorn berries than in lemon! ^[1] Ascorbic acid improves the body's production of its own collagen, which has a positive effect on the health of cartilage and muscles, as well as the beauty of the skin, increases immunity and resistance to viruses and microbes ^[2], prevents the development of scurvy, helps reduce the risk of periodontal disease ^[3] and even helps fight cancer.
- Beta carotene. The yellow-orange plant pigment saturates the body with vitamin A, known for its high antioxidant properties, prevents skin aging, accelerates its regeneration in case of damage, improves vision, and reduces the risk of osteoporosis ^[4] and coronary heart disease. ^[5]
- Potassium. The element regulates the water-salt balance in the body, maintains kidney health ^[6], improves muscle function, including the heart, stabilizes heart rhythm, and regulates blood pressure. ^[7]
- Iron. The trace element is an integral part of hemoglobin - it prevents the development of iron deficiency anemia ^[8], maintains the immune system in tone, and helps the body fight infections.
- Molybdenum. The trace element normalizes sexual function and prevents the development of impotence, helps to avoid motor nervous disorders ^[9], promotes fluoride retention and strengthens tooth enamel. ^[10]

Hawthorn juice also contains fiber and sorbitol - they activate the flow of bile, improve the functioning of the gastrointestinal tract, provide a natural laxative effect and can be used as a substitute for pharmaceutical drugs against constipation ^[11]. Interestingly, the laxative effect of sorbitol is observed only in patients with normal and low stomach acidity. In people with high acidity, only a choleretic effect is observed.

Saturated with hawthorn berries and tannins, which give the juice a slight astringent effect. Pre-freezing the fruits or picking them after the first frost helps to get rid of astringency.

Top 9 beneficial properties of hawthorn juice

1. Improves heart function

Systematic consumption of the drink has a positive effect on the functioning of the cardiovascular system: it increases blood supply to the coronary arteries of the heart and blood vessels of the brain, normalizes blood pressure, and reduces symptoms of mild to moderate heart failure. ^[12]

2. Has hepatoprotective properties

Research shows that hawthorn juice has a positive effect not only on the cardiovascular system, but also on the liver - it helps reduce the accumulation of lipids, reduces the manifestation of fibrosis and inflammation, prevents the development of oncological processes, and is successfully used for the treatment of toxic hepatitis, non-alcoholic fatty liver disease, hepatocellular carcinomas. ^[13]

3. Reduces “bad” cholesterol levels

The high content of flavonoids and pectins in the juice helps normalize cholesterol in the blood, which helps avoid the risk of blockage of blood vessels, the development of atherosclerosis, and, as a consequence, the occurrence of such dangerous diseases as stroke and heart attack. ^[14]

4. Normalizes digestion

Hawthorn juice contains fiber and sorbitol. They improve the flow of bile and speed up the passage of products through the intestinal tract. The berries also contain compounds that enhance the production of digestive enzymes necessary for digesting fatty and protein-rich foods. It has been proven that drinking juice squeezed from hawthorn fruits improves gastrointestinal motility and improves digestion processes. ^[15]

5. Prolongs youthful skin

Hawthorn juice, rich in polyphenols, has an antioxidant and anti-inflammatory effect on the body, including the epidermis - protects the skin from the harmful effects of ultraviolet radiation, promotes accelerated tissue regeneration in case of damage, restores youth and elasticity of the skin. ^[16] Masks with hawthorn juice well moisturize and rejuvenate the skin, smooth out fine wrinkles and creases.

6. Has a calming effect

Scientists note that fresh hawthorn fruit is indispensable for stress. No worse than pharmaceutical drugs, it calms the nervous system, reduces heart rate, and helps get rid of the effects of stress, insomnia and depression. ^[17]

7. Promotes weight loss

Hawthorn berries contain chlorogenic acid ^[18], which prevents the formation of fat cells. It is a proven fact that drinking hawthorn juice helps speed up metabolism - reduces the risks of obesity and diabetes, and accelerates weight loss processes. ^[19]

8. Helps reduce complications from COVID-19

Even a mild course of coronavirus affects neurology - many patients who have suffered from the disease experience complications such as depression, anxiety, which negatively affects respiratory function and heart function and can even lead to the development of dementia. Research shows that the use of herbal medicine, in particular the introduction of hawthorn juice, rich in beneficial compounds, into the diet helps reduce neurological, cardiovascular, and respiratory complications of COVID-19. ^[20]

9. Has an antibacterial effect

It has been proven that juice squeezed from hawthorn fruits has a high antibacterial effect - it suppresses the development of various bacilli and bacteria, including microorganisms dangerous to humans such as E. coli, diphtheria corynebacterium, streptococcal infection, etc. ^[21]

Contraindications and features of drinking hawthorn juice

Despite its numerous beneficial properties, hawthorn juice has a number of contraindications. As a rule, the drink can harm the body, excessively reduce the heart rate or lead to other heart problems if consumed in too large portions. Therefore, exceeding the recommended dose (25 ml of fresh juice twice a day half an hour before meals) is not recommended.

Also, fresh hawthorn should be tasted with caution by people suffering from food allergies. True, in the course of numerous medical experiments, scientists came to the conclusion that the toxicity of this plant and its fruits is insignificant ^[22]. But still, when you first get acquainted with berries or the juice obtained from them, it is recommended to be careful - monitor the body's reaction (it can manifest itself in the form of a rash and itching) in order to take timely measures to neutralize the consequences.

Hawthorn juice should be excluded from the diet of children under 12 years of age, women during pregnancy and breastfeeding, as well as hypotensive patients.

Note! Hawthorn juice enhances the effect of medications, in particular, drugs for thinning blood, lowering blood pressure, etc. Therefore, using them together with pharmaceutical drugs is not recommended.

How to prepare and store hawthorn juice: basic recommendations

To prepare juice, you should select whole ripe fruits of bright orange or red color without signs of spoilage or rot. Before processing, the berries must be thoroughly washed, filled with clean water (100 ml of liquid per half kilogram of fruit) and boiled for several minutes until softened, and then rubbed through a sieve. It is recommended to drink the resulting fresh juice before meals twice a day (morning and evening), starting with a dose of a tablespoon and gradually increasing it to 25 ml.

For long-term storage, it is recommended to freeze or preserve the juice.

Expert commentary

Tatyana Eliseeva, nutritionist, nutritionist

Hawthorn juice has long been known for its excellent cardiological properties. But, as practice shows, it also copes well with other problems of the body: it helps to start metabolism and normalize digestive processes, reduce cholesterol levels and improve the liver, and get rid of complex bacterial infections. Supplement your family's diet with this delicious natural supplement and see for yourself its benefits and effectiveness!

Literature

1. Eliseeva, T. (2022). Lemon juice-unique drink for recovery and body support. *Journal of Healthy Nutrition and Dietetics*, (22), 17-22. DOI: 10.59316/.vi22.207
2. Wintergerst, E. S., Maggini, S., & Hornig, D. H. (2006). Immune-enhancing role of vitamin C and zinc and effect on clinical conditions. *Annals of Nutrition and Metabolism*, 50(2), 85-94. DOI: 10.1159/000090495
3. Eliseeva, T., & Mironenko, A. (2018). Vitamin C (ascorbic acid) description, benefits and where it is contained. *Journal of Healthy Nutrition and Dietetics*, 2(4), 33-44. DOI:10.59316/.vi4.19
4. Gao, S. S., & Zhao, Y. (2023). The effects of β -carotene on osteoporosis: a systematic review and meta-analysis of observational studies. *Osteoporosis International*, 34(4), 627-639. DOI: 10.1007/s00198-022-06593-7
5. Tavani, A., & La Vecchia, C. (1999). β -Carotene and risk of coronary heart disease. A review of observational and intervention studies. *Biomedicine & pharmacotherapy*, 53(9), 409-416. DOI: 10.1016/S0753-3322(99)80120-6
6. Wieërs, M. L., Mulder, J., Rotmans, J. I., & Hoorn, E. J. (2022). Potassium and the kidney: a reciprocal relationship with clinical relevance. *Pediatric Nephrology*, 37(10), 2245-2254. DOI: 10.1007/s00467-022-05494-5
7. Mironenko, A., & Eliseeva, T. (2020). Potassium (K, potassium)-description, effects on the body, best sources. *Journal of Healthy Nutrition and Dietetics*, (13), 59-69. DOI: 10.59316/.vi13.84
8. Eliseeva, T. (2021). Iron (Fe) for the body-30 best sources and importance for health. *Journal of Healthy Nutrition and Dietetics*, 4(18), 66-75. DOI: 10.59316/.vi18.148
9. Bourke, C. A. (2016). Molybdenum deficiency produces motor nervous effects that are consistent with amyotrophic lateral sclerosis. *Frontiers in neurology*, 7, 28. DOI: 10.3389/fneur.2016.00028
10. Eliseeva, T. (2022). Molybdenum (Mo)-importance for the body and health, where contained. *Journal of Health Nutrition and Dietetics*, 2(20), 54-62. DOI: 10.59316/.vi20.178
11. Lederle, F. A., Busch, D. L., Mattox, K. M., West, M. J., & Aske, D. M. (1990). Cost-effective treatment of constipation in the elderly: a randomized double-blind comparison of sorbitol and lactulose. *The American journal of medicine*, 89(5), 597-601. DOI: 10.1016/0002-9343(90)90177-f
12. Fong, H. H., & Bauman, J. L. (2002). Hawthorn. *Journal of Cardiovascular Nursing*, 16(4), 1-8. DOI: 10.1097/00005082-200207000-00002
13. Kim, E., Jang, E., & Lee, J. H. (2022). Potential roles and key mechanisms of hawthorn extract against various liver diseases. *Nutrients*, 14(4), 867. DOI: 10.3390/nu14040867
14. Zhang, Y., Zhang, L., Geng, Y., & Geng, Y. (2014). Hawthorn fruit attenuates atherosclerosis by improving the hypolipidemic and antioxidant activities in apolipoprotein e-deficient mice. *Journal of atherosclerosis and thrombosis*, 21(2), 119-128. DOI: 10.5551/jat.19174
15. Wang, K., Luo, L., Xu, X., Chen, X., He, Q., Zou, Z., ... & Liang, S. (2021). LC–MS-based plasma metabolomics study of the intervention effect of different polar parts of hawthorn on gastrointestinal motility disorder rats. *Biomedical Chromatography*, 35(6), e5076. DOI: 10.1002/bmc.5076
16. Liu, S., Sui, Q., Zou, J., Zhao, Y., & Chang, X. (2019). Protective effects of hawthorn (*Crataegus pinnatifida*) polyphenol extract against UVB-induced skin damage by modulating the p53 mitochondrial pathway in vitro and in vivo. *Journal of food biochemistry*, 43(2), e12708. DOI: 10.1111/jfbc.12708
17. Shahrajabian, M. H. (2022). Powerful Stress Relieving Medicinal Plants for Anger, Anxiety, Depression, and Stress During Global Pandemic. *Recent patents on biotechnology*, 16(4), 284-310. DOI: 10.2174/1872208316666220321102216

18. Zhang, J., Chai, X., Zhao, F., Hou, G., & Meng, Q. (2022). Food applications and potential health benefits of hawthorn. *Foods*, 11(18), 2861. DOI: 10.3390/foods11182861
19. Pimpley, V., Patil, S., Srinivasan, K., Desai, N., & Murthy, P. S. (2020). The chemistry of chlorogenic acid from green coffee and its role in attenuation of obesity and diabetes. *Preparative biochemistry & biotechnology*, 50(10), 969-978. DOI: 10.1080/10826068.2020.1786699
20. Wang, Y. X., Yang, Z., Wang, W. X., Huang, Y. X., Zhang, Q., Li, J. J., ... & Yue, S. J. (2022). Methodology of network pharmacology for research on Chinese herbal medicine against COVID-19: A review. *Journal of Integrative Medicine*. DOI: 10.1016/j.joim.2022.09.004
21. Wu, J., Peng, W., Qin, R., & Zhou, H. (2014). *Crataegus pinnatifida*: chemical constituents, pharmacology, and potential applications. *Molecules*, 19(2), 1685-1712. DOI: 10.3390/molecules19021685.
22. Nabavi, S. F., Habtemariam, S., Ahmed, T., Sureda, A., Daglia, M., Sobarzo-Sánchez, E., & Nabavi, S. M. (2015). Polyphenolic composition of *Crataegus monogyna* Jacq.: from chemistry to medical applications. *Nutrients*, 7(9), 7708-7728. DOI: 10.3390/nu7095361

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Goji Berry Juice : 10+ Superfood Benefits for the Body

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Abstract. Goji berries, known among modern nutritionists as an effective means for losing weight and gaining a slim figure, have been successfully used in traditional Chinese medicine for more than 2000 years. The small bright red fruits of the *common wolfberry plant* , or *Lycium Barbarum* , have been used by Asian healers for many centuries to strengthen the immune system and get rid of many diseases. A variety of desserts, medicinal teas and tinctures are prepared from goji berries, and they are added to various dishes. They also squeeze out tasty and healthy juice.

Key words: goji berries, goji juice , beneficial properties, contraindications, composition, calorie content

Composition and calorie content

Goji berries are champions in protein content - almost 12 grams per 100 grams of pulp. At the same time, they contain quite a few carbohydrates (18.8%) and a minimum of fat - 0.4%. The calorie content of fresh fruits is also quite acceptable - 68-70 kcal.

The main advantage of the famous longevity berries, as goji berries are also called, is their unique and very rich composition. ^[1]

They contain:

- various microelements: iron, calcium, sodium, magnesium, zinc;
- a large number of vitamins: A, E, C, B1 and others;
- fiber (about 4 grams) - dietary fiber normalizes intestinal function and helps maintain healthy microflora, helps cleanse the body of toxins and waste ^[2];
- 4 polysaccharides (LBP-1, LBP-2, LBP-3, LBP-4) - the most important active substances of goji pulp ^[3] - have antioxidant, antiviral, antitumor and antidiabetic properties ^[4, 5].

Also, wolfberry berries, and, accordingly, juice contain 18 unique amino acids (more than in the royal pollen of bees), including arginine (strengthens the immune system ^[6], accelerates wound healing ^[7]), valine (supports health and muscle tone ^[8], helps remove toxins from the body), leucine (stabilizes blood glucose levels ^[9] - helps curb appetite and reduces the risk of diabetes), as well as tryptophan, tyrosine, etc.

Top 13 Health Benefits of Goji Berry Juice

1. Protects skin from UV damage

Research shows that drinking goji juice has a positive effect on the skin - protecting it from photodamage caused by ultraviolet radiation. That is why drinking juice squeezed from bright red wolfberry fruits is recommended for people with sensitive skin, especially during periods of increased sun activity. ^[10]

2. Boosts immunity

Goji berries are a natural antioxidant ^[11] - they protect cells from damage and premature aging, improve immunity and the body's resistance to viruses and infections. ^[12] Prepare for the coming season of viruses and colds by first drinking a course of a natural immunostimulant in the form of delicious and healthy goji juice!

3. Prevents Liver Damage

It is known that alcohol abuse has a negative impact on health, and first of all, the liver suffers from close exposure to strong drinks. Studies have shown that daily intake of goji juice for 14 days has a positive effect on the intestinal microbiota and relieves acute organ damage, as evidenced by a decrease in the content of lipopolysaccharides and pro-inflammatory cytokines in liver tissue. ^[13]

4. Prevents the development of inflammatory bowel diseases

Inflammatory bowel diseases (IBD), such as ulcerative colitis or Crohn's disease, can trigger the development of cancer. That is why experts do not recommend turning a blind eye to the presence of these problems in the body. It has been proven that goji juice has high prebiotic properties - it effectively restores the intestinal microbiota, prevents dysbiosis associated with IBD ^[14], the development and progression of acute colitis. ^[15]

5. Improves vision

Age-related macular degeneration (AMD) is an ophthalmological disease accompanied by damage to the central part of the retina (macula) and leading to loss of visual acuity. It is one of the main causes of age-related blindness. ^[16] Studies have shown that regular consumption of goji berries and their

derivative products, including juice, is much better than the consumption of lutein and zeaxanthin in increasing the optical density of macular pigment, carotenoids, and helps prevent or delay the development of AMD. ^[17]

6. Effective in the treatment of cancer

The fruits of the common wolfberry contain a unique trace element, germanium. It is the lack of this important element in the body that can cause the development of oncological processes. ^[18] Drinking goji juice has a positive effect on health - it shows good results in the treatment of cancer of the liver, prostate, colon, breast and other organs. ^[19]

7. Stabilizes cholesterol levels

The polysaccharide contained in the pulp of goji berries promotes accelerated lipid metabolism. Patients who drink the drink obtained from these fruits experience a decrease in the level of bad cholesterol. Which helps prevent the development of cardiovascular diseases (heart attacks, strokes), and also has a positive effect on weight loss. ^[20]

8. Helps combat obesity

Polysaccharides contained in the pulp of Lycium Barbarum promote the breakdown of fats - help cope with obesity and speed up the process of losing weight. ^[21]

9. Has neuroprotective properties

Neurodegenerative diseases that affect the nervous system and lead to the progressive death of brain neurons (Parkinson's disease, Alzheimer's disease, etc.) are becoming increasingly common in the modern world. Scientists have discovered that goji juice has powerful neuroprotective properties and can be used as an effective therapy in the treatment and prevention of these types of diseases. ^[22], ^[23]

10. Improves neurological and psychological indicators

During an experiment in which one group of patients systematically consumed goji juice for 14 days, and the second - a placebo, it was found that after two weeks, people who drank fresh juice obtained from the pulp of cattail fruits significantly improved their neuropsychological indicators. Their mental acuity increased, they began to sleep better and fall asleep faster, and got rid of anxiety. As an added bonus, their gastrointestinal tract function stabilized. ^[24]

11. Improves the effectiveness of flu vaccinations

It is known that the influenza vaccine has a weaker effect on older people and does not provide them with strong enough protection against viruses. During the experiment, it was possible to establish that if a daily dose of goji juice is introduced into the patient's diet a month before the planned vaccination, he will have higher titers of antibodies to influenza and milder symptoms of the disease. ^[25]

12. Stimulates reproductive function

Goji fruit juice affects the hormonal profile and reproductive functions, improves sperm quality. Can be used as a natural aphrodisiac. ^[26]

13. Relieves symptoms of atopic dermatitis

Research shows that consuming fresh juice from wolfberry fruits has a calming effect on inflamed and irritated skin during exacerbations of chronic skin diseases, in particular atopic dermatitis. ^[27]

Contraindications and features of drinking goji berry juice

Note! People taking blood thinners, in particular warfarin, should not consume goji berries or their juice. They can increase the effect of medications, leading to bleeding. ^[28, 29]

Pregnant women should also use the drink with caution - it can cause contractions of the uterine walls and cause miscarriage or premature birth. People with food allergies may also experience a reaction to contact with goji berries ^[30], including anaphylactic shock. It is also unsafe for children under 3 years of age to try this fresh juice due to the lack of sufficient research on the effect of goji juice on the children's body.

It is recommended to drink wolfberry juice between meals, two tablespoons twice a day (you should start with minimal doses, carefully monitoring the body's reaction).

How to prepare and store goji berry juice

Goji berries are easily traumatic and have a short shelf life ^[31] - the slightest damage to the skin leads to its darkening, the development of spoilage and the loss of the fruit's presentation. Immediately after harvesting, goji berries are carefully transported to the processing site, where they are sent for drying or juice extraction. Fresh fruits of wolfberry are almost never found on sale. Therefore, you can taste the juice only in the form of a concentrate, which is available in some specialized outlets. Or you can make it yourself from dried fruits.

The berries should be washed, poured with a small amount of water and boiled for a few minutes. Then the liquid with the swollen fruits must be placed in a blender and blended. Goji juice is ready - enjoy tasting!

Goji berry smoothies are also very popular among healthy eating enthusiasts. Two dozen berries are added to 250 ml of kefir, and then the mixture is whipped in a blender. You can also add other fruits or berries to the drink to vary the taste: strawberries, currants, cherries, etc.

Expert commentary

Tatyana Eliseeva, nutritionist, nutritionist

Goji berry juice is a unique drink that has proven its benefits for the body over more than 2000 years of presence in traditional Chinese medicine. Since ancient times, Asian peoples have successfully used it to treat a wide variety of diseases - skin, inflammatory and oncological diseases, and stimulate reproductive function. You can verify the effectiveness and benefits of delicious fresh juice from your own experience by adding it to your diet!

Literature

1. Teixeira, F., Silva, A. M., Delerue-Matos, C., & Rodrigues, F. (2023). *Lycium barbarum* Berries (Solanaceae) as Source of Bioactive Compounds for Healthy Purposes: A Review. *International Journal of Molecular Sciences*, 24(5), 4777. DOI: 10.3390/ijms24054777
2. Gill, S. K., Rossi, M., Bajka, B., & Whelan, K. (2021). Dietary fiber in gastrointestinal health and disease. *Nature Reviews Gastroenterology & Hepatology*, 18(2), 101-116. DOI: 10.1038/s41575-020-00375-4
3. Zhou, S., Md Atikur, R., Li, J., Wu, D., Wei, C., Chen, J., ... & Chen, S. (2020). Extraction Methods Affect the Structure and Bioactivity of Goji (*Lycium barbarum*) Polysaccharides. *Rensselaer Polytechnic Institute, Troy, NY*. DOI: 10.3390/molecules25040936
4. Masci, A., Carradori, S., Casadei, M. A., Paolicelli, P., Petralito, S., Ragno, R., & Cesa, S. (2018). *Lycium barbarum* polysaccharides: Extraction, purification, structural characterization and evidence about hypoglycaemic and hypolipidaemic effects. A review. *Food chemistry*, 254, 377-389. DOI: 10.1016/j.foodchem.2018.01.176
5. Tian, X., Liang, T., Liu, Y., Ding, G., Zhang, F., & Ma, Z. (2019). Extraction, structural characterization, and biological functions of *Lycium barbarum* polysaccharides: A review. *Biomolecules*, 9(9), 389. DOI: 10.3390/biom9090389.
6. Popovic, P. J., Zeh III, H. J., & Ochoa, J. B. (2007). Arginine and immunity. *The Journal of nutrition*, 137(6), 1681S-1686S. DOI: 10.1093/jn/137.6.1681S
7. Stechmiller, J. K., Childress, B., & Cowan, L. (2005). Arginine supplementation and wound healing. *Nutrition in Clinical Practice*, 20(1), 52-61. DOI: 10.1177/011542650502000152
8. Tkacheva, N., & Eliseeva, T. (2021). Food for muscles – Top 10 healthy foods. *Journal of Healthy Eating and Dietetics*, 3(17), 58-62. DOI: 10.59316/vi17.124
9. Kalogeropoulou, D., LaFave, L., Schweim, K., Gannon, M. C., & Nuttall, F. Q. (2008). Leucine, when ingested with glucose, synergistically stimulates insulin secretion and lowers blood glucose. *Metabolism*, 57(12), 1747-1752. DOI: 10.1016/j.metabol.2008.09.001.
10. Reeve, V. E., Allanson, M., Arun, S. J., Domanski, D., & Painter, N. (2010). Mice drinking goji berry juice (*Lycium barbarum*) are protected from UV radiation-induced skin damage via antioxidant pathways. *Photochemical & Photobiological Sciences*, 9, 601-607. DOI: 10.1039/b9pp00177h
11. Vidović, B. B., Milinčić, D. D., Marčetić, M. D., Djuriš, J. D., Ilić, T. D., Kostić, A. Ž., & Pešić, M. B. (2022). Health benefits and applications of goji berries in functional food products development: A review. *Antioxidants*, 11(2), 248. DOI: 10.3390/antiox11020248
12. Mao, C., & Xiao, W. (2018). On this page. *Complexity*, 2, 3. DOI: 10.1155/2019/2437397
13. Guo, L., Guan, Q., Duan, W., Ren, Y., Zhang, X. J., Xu, H. Y., ... & Geng, Y. (2022). Dietary goji shapes the gut microbiota to prevent the liver injury induced by acute alcohol intake. *Frontiers in Nutrition*, 9, 929776. DOI: 10.3389/fnut.2022.929776
14. Sun, Q., Du, M., Kang, Y., & Zhu, M. J. (2023). Prebiotic effects of goji berry in protection against inflammatory bowel disease. *Critical Reviews in Food Science and Nutrition*, 63(21), 5206-5230. DOI: 10.1080/10408398.2021.2015680
15. Huang, Y., Zheng, Y., Yang, F., Feng, Y., Xu, K., Wu, J., ... & So, K. F. (2022). *Lycium barbarum* Glycopeptide prevents the development and progression of acute colitis by regulating the composition and diversity of the gut microbiota in mice. *Frontiers in Cellular and Infection Microbiology*, 12, 921075. DOI: 10.3389/fcimb.2022.921075
16. Thomas, C. J., Mirza, R. G., & Gill, M. K. (2021). Age-related macular degeneration. *Medical Clinics*, 105(3), 473-491. DOI: 10.1016/j.mcna.2021.01.003
17. Li, X., Holt, R. R., Keen, C. L., Morse, L. S., Yiu, G., & Hackman, R. M. (2021). Goji Berry Intake Increases Macular Pigment Optical Density in Healthy Adults: A Randomized Pilot Trial. *Nutrients* 2021, 13, 4409. DOI: 10.3390/nu13124409

18. Menchikov, L. G., & Popov, A. V. (2023). Physiological Activity of Trace Element Germanium Including Anticancer Properties. *Biomedicines*, 11(6), 1535. DOI: 10.3390/biomedicines11061535
19. Sanghavi, A., Srivatsa, A., Adiga, D., Chopra, A., Lobo, R., Kabekkodu, S. P., ... & Shah, A. (2022). Goji berry (*Lycium barbarum*) inhibits the proliferation, adhesion, and migration of oral cancer cells by inhibiting the ERK, AKT, and CyclinD cell signaling pathways: an in-vitro study. *F1000Research*, 11. DOI: 10.12688/f1000research.129250.3
20. Xia, H., Zhou, B., Sui, J., Ma, W., Wang, S., Yang, L., & Sun, G. (2022). *Lycium barbarum* Polysaccharide Regulates the Lipid Metabolism and Alters Gut Microbiota in High-Fat Diet Induced Obese Mice. *International Journal of Environmental Research and Public Health*, 19(19), 12093. DOI: 10.3390/ijerph191912093
21. Yang, Y., Chang, Y., Wu, Y., Liu, H., Liu, Q., Kang, Z., ... & Duan, J. (2021). A homogeneous polysaccharide from *Lycium barbarum*: Structural characterizations, anti-obesity effects and impacts on gut microbiota. *International journal of biological macromolecules*, 183, 2074-2087. DOI: 10.1016/j.ijbiomac.2021.05.209
22. Xing, X., Liu, F., Xiao, J., & So, K. F. (2016). Neuro-protective mechanisms of *Lycium barbarum*. *Neuromolecular medicine*, 18, 253-263. DOI: 10.1007/s12017-016-8393-y
23. Amro, M. S., Teoh, S. L., Norzana, A. G., & Srijit, D. J. L. C. (2018). The potential role of herbal products in the treatment of Parkinson's disease. *La Clinica Terapeutica*, 169(1), e23-e33. DOI: 10.7417/T.2018.2050
24. Amagase, H., & Nance, D. M. (2008). A randomized, double-blind, placebo-controlled, clinical study of the general effects of a standardized *Lycium barbarum* (Goji) juice, GoChi™. *The Journal of Alternative and Complementary Medicine*, 14(4), 403-412. DOI: 10.1089/acm.2008.0004
25. Du, X., Wang, J., Niu, X., Smith, D., Wu, D., & Meydani, S. N. (2014). Dietary wolfberry supplementation enhances the protective effect of flu vaccine against influenza challenge in aged mice. *The Journal of nutrition*, 144(2), 224-229. DOI: 10.3945/jn.113.183566
26. Andoni, E., Curone, G., Agradi, S., Barbato, O., Menchetti, L., Vigo, D., ... & Brecchia, G. (2021). Effect of goji berry (*Lycium barbarum*) supplementation on reproductive performance of rabbit does. *Animals*, 11(6), 1672. DOI: 10.3390/ani11061672
27. Bak, S.G., Lim, H.J., Won, Y.S., Lee, S., Cheong, S.H., Lee, S.J., ... & Rho, M.C. On this page. DOI: 10.1155/2022/2475699.
28. Potterat, O. (2010). Goji (*Lycium barbarum* and *L. chinense*): phytochemistry, pharmacology and safety in the perspective of traditional uses and recent popularity. *Planta medica*, 76(01), 7-19. DOI: 10.1055/s-0029-1186218
29. Rivera, C. A., Ferro, C. L., Bursua, A. J., & Gerber, B. S. (2012). Probable interaction between *Lycium barbarum* (goji) and warfarin. *Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy*, 32(3), e50-e53. DOI: 10.1002/j.1875-9114.2012.01018.x
30. Larramendi, C. H., García-Abujeta, J. L., Vicario, S., García-Endrino, A., López-Matas, M. A., García-Sedeño, M. D., & Carnés, J. (2012). 4 Goji berries (*Lycium barbarum*): risk of allergic reactions in individuals with food allergy. *Journal of Investigational Allergology and Clinical Immunology*, 22(5), 345. PMID: 23101309
31. Fatchurrahman, D., Amodio, M. L., & Colelli, G. (2022). Quality of goji berry fruit (*Lycium barbarum* L.) stored at different temperatures. *Foods*, 11(22), 3700. DOI: 10.3390/foods11223700

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Goji berry juice: 10+ positive properties of the superfood for the body

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Abstract . Juice from goji berries is a unique drink that has proven its benefits for the body for more than 2000 years of its presence in traditional medicine in China. Since ancient times, Asian peoples have been successfully treating a variety of diseases with its help - skin, inflammatory and oncological diseases, stimulating reproductive function. You can convince yourself of the effectiveness and benefits of this tasty fresh fruit by introducing it into your diet!



Serviceberry juice: scientific facts about the benefits, features of preparation and use

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Abstract. Serviceberry berries, similar in shape and color to blueberries, for which they are often confused, have not yet gained such popularity among us. And completely in vain! In addition to the fact that the plant itself is less demanding on soil and planting conditions, is frost-resistant and has a higher yield, its fruits contain much more vitamins and beneficial microelements than the same blueberries. By the way, from a botanical point of view, the serviceberry fruit is not a berry at all, but a fruit. After all, it belongs to the apple subfamily.

Ripe irgi fruits have an original sweetish nutty flavor (some varieties even have an almond flavor). Therefore, they are widely used in cooking - they are eaten fresh, and they are also used to prepare a variety of compotes, jams, marshmallows, marmalades, and jelly. The healing juice from serviceberry is especially valued among admirers of traditional medicine.

Key words: serviceberry, serviceberry juice , beneficial properties, contraindications, composition, calorie content

Composition and calorie content

Serviceberry berries are not very juicy - their pulp contains only 80% water. In addition, they contain neither proteins nor fats. Carbohydrates are present in an amount of approximately 12 grams per 100 grams of pulp. But at the same time, the calorie content of the serviceberry fruit, and, accordingly, the juice, is quite low (45 kcal), which allows you to include fresh serviceberry fruit in a variety of dietary menus.

In addition, serviceberry berries are a valuable source of numerous health-promoting nutrients. In particular, they contain:

- Vitamin C. Ascorbic acid is a powerful antioxidant ^[1] - it protects cells from damage by free radicals and stops the aging process, improves immunity ^[2] and helps the body fight viruses and colds.
- Vitamin P, or rutin. Strengthens blood vessels and capillaries - prevents bleeding, normalizes blood pressure, including intraocular, has a powerful anti-allergic effect ^[3] - reduces the risks of developing food allergies and bronchial asthma.
- Carotene. The carotenoid helps protect the skin from the harmful effects of UV radiation and phytoaging, accelerates wound healing, prevents vision health and improves cognitive abilities. ^[4]

Also, serviceberry berries contain a high content of anthocyanins (much more than in strawberries, raspberries and sea buckthorn) ^[5] - they have antioxidant, anti-inflammatory, antidiabetic properties, improve the condition of cardiovascular and neurodegenerative diseases. ^[6] The pulp of the serviceberry also contains the valuable plant phytosterol beta-sitosterol - lowers the level of “bad” cholesterol in the blood and prevents the development of atherosclerosis, strengthens the immune system and helps the body fight viruses and colds, blocks the production of dihydrotestosterone, thereby preventing the growth of prostate cells and reducing the development of inflammatory processes in it. ^[7]

Top 7 beneficial properties of serviceberry juice

1. Helpful in treating and preventing diabetes

Research shows that traditional pharmaceutical drugs used to lower blood sugar and treat diabetes often have a number of side effects. Serviceberry juice, rich in anthocyanins, flavanols, and proanthocyanins, has a powerful antidiabetic effect and can be considered as an effective and safe natural analogue of medicines. ^[8]

2. Helps lower cholesterol levels

Saskatoon juice, rich in flavonoids, helps reduce the amount of lipids in the blood - it shows good results in the treatment and prevention of dyslipidemia, which helps prevent the development of atherosclerotic plaques and, as a consequence, cardiovascular diseases (heart attacks, strokes, etc.).^[9]

3. Promotes weight loss

During the experiment, scientists found that long-term intake of serviceberry juice, rich in anthocyanins and flavonols, helps normalize weight and helps avoid obesity.^[10]

4. Has positive dynamics in the treatment of liver steatosis

Steatosis, or non-alcoholic fatty liver disease, can lead to the development of fibrosis and then cirrhosis. Research shows that drinking juice from serviceberry berries improves the condition of the organ and can be used as an adjuvant therapy in the treatment of this disease.^[eleven]

5. Improves the functioning of the gastrointestinal tract

Serviceberry berries are rich in fiber and also contain tannins. Dietary fiber helps create healthy intestinal microflora, improves bowel movements, and gently and effectively cleanses the body of toxins and waste.^[12]

6. Has antimicrobial properties

Serviceberry juice has antimicrobial properties and can be used in the treatment of stomatitis, tonsillitis, periodontal disease, and other diseases of the throat and oral cavity.^[13]

7. Helps eliminate bleeding

Weakened vessels and capillaries can cause bleeding gums, nosebleeds and anal bleeding in hemorrhoidal diseases. Supplementing your diet with vitamin P, or rutin, also found in serviceberry juice, helps effectively prevent this problem.^[14]

Contraindications and features of using irgi juice

Irga, as well as all its derivatives, are not classified as allergens. An allergic reaction can only occur if there is individual intolerance. Therefore, like any new product, fresh serviceberry should be introduced into the diet, especially of children, carefully, starting with minimal portions, carefully monitoring the body's reaction. If there are no negative reactions from the gastrointestinal tract, skin manifestations, etc., then you can gradually increase the dose to the standard one. The recommended daily serving of irgi juice is 50-100 ml of the drink three times a day between meals.

Considering that the serviceberry is not too juicy, in order to get the maximum amount of juice from it, it is recommended to give the berries a little "rest" before processing. After harvesting, they need to be thoroughly washed, sorted and scattered on a flat surface for 3-6 hours.

You can squeeze the juice from serviceberry berries manually by slightly steaming the fruits and then rubbing them through a sieve using a juicer or juicer. Irga has a sweet taste, to diversify it and give the drink additional sourness, you can add a little lemon juice, cherry, cranberry, red or black currant, and other sour fruits and berries.

The juice from serviceberry can be consumed immediately after preparation, or canned or frozen for long-term storage (the beneficial properties are preserved). For canning, freshly squeezed juice is pasteurized, then poured into pre-sterilized jars and sealed. Store in a cool, dark place. For freezing, the drink is poured into special containers or zip bags and placed in the freezer, where it can be stored without the risk of losing its beneficial properties throughout the year.

Expert commentary

Tatyana Eliseeva, nutritionist, nutritionist

Serviceberry juice is not only tasty, but also a very healthy drink, which should definitely be included in the family diet in the fall. To replenish the lack of vitamins and microminerals in the body, reduce the amount of cholesterol in the blood and thereby prevent the development of cardiovascular diseases, lose weight and get rid of frequent nosebleeds - all this can be done with a delicious fresh serviceberry berry, which you can easily prepare yourself!

Literature

1. Carr, A. C., & Maggini, S. (2017). Vitamin C and immune function. *Nutrients*, 9(11), 1211. DOI: 10.3390/nu9111211
2. Eliseeva, T., & Mironenko, A. (2018). Vitamin C (ascorbic acid) description, benefits and where it is found. *Journal of Healthy Eating and Dietetics*, 2(4), 33-44.
3. Martini, G. A., & Engelkamp, H. (1952). Kapillarschäden durch Dysproteinämie und ihre Behandlung durch Rutin. *DMW-Deutsche Medizinische Wochenschrift*, 77(26), 833-837. DOI: 10.1055/s-0028-1116106
4. Chen, P., Li, L., Gao, Y., Xie, Z., Zhang, Y., Pan, Z., ... & Xin, X. (2019). β -carotene provides neuroprotection after experimental traumatic brain injury via the Nrf2-ARE pathway. *Journal of Integrative Neuroscience*, 18(2), 153-161. DOI: 10.31083/j.jin.2019.02.120
5. Hosseinian, F. S., & Beta, T. (2007). Saskatoon and wild blueberries have higher anthocyanin contents than other Manitoba berries. *Journal of agricultural and food chemistry*, 55(26), 10832-10838. DOI: 10.1021/jf072529m
6. Mattioli, R., Francioso, A., Mosca, L., & Silva, P. (2020). Anthocyanins: A comprehensive review of their chemical properties and health effects on cardiovascular and neurodegenerative diseases. *Molecules*, 25(17), 3809. DOI: 10.3390/molecules25173809
7. Eliseeva, T., & Yampolsky, A. (2021). Food against inflammation. *Journal of Healthy Eating and Dietetics*, 2(16), 25-30.
8. Zhao, L., Huang, F., Hui, A. L., & Shen, G. X. (2020). Bioactive components and health benefits of Saskatoon berry. *Journal of Diabetes Research*, 2020. DOI: 10.1155/2020/3901636
9. Kopceková, J., & Mrázová, J. (2022). Phytonutrients of bilberry fruit and saskatoon berry in the prevention and treatment of dyslipidemia. *Roczniki Państwowego Zakładu Higieny*, 73(3). DOI: 10.32394/rpzh.2022.0216
10. Du Preez, R., Wanyonyi, S., Mouatt, P., Panchal, S. K., & Brown, L. (2020). Saskatoon berry *Amelanchier alnifolia* regulates glucose metabolism and improves cardiovascular and liver signs of diet-induced metabolic syndrome in rats. *Nutrients*, 12(4), 931. DOI: 10.3390/nu12040931
11. Zhao, R., Xiang, B., Dolinsky, V. W., Xia, M., & Shen, G. X. (2021). Saskatoon berry powder reduces hepatic steatosis and insulin resistance in high fat-high sucrose diet-induced obese mice. *The Journal of Nutritional Biochemistry*, 95, 108778. DOI: 10.1016/j.jnutbio.2021.108778

12. Slavin, J. L., & Lloyd, B. (2012). Health benefits of fruits and vegetables. *Advances in nutrition*, 3(4), 506-516. DOI: 10.3945/an.112.002154
13. Lachowicz, S., Wiśniewski, R., Ochmian, I., Drzymała, K., & Pluta, S. (2019). Anti-microbiological, anti-hyperglycemic and anti-obesity potency of natural antioxidants in fruit fractions of Saskatoon berry. *Antioxidants*, 8(9), 397. DOI: 10.3390/antiox8090397
14. Corsale, I., Carrieri, P., Martellucci, J., Piccolomini, A., Verre, L., Rigutini, M., & Panicucci, S. (2018). Flavonoid mixture (diosmin, troxerutin, rutin, hesperidin, quercetin) in the treatment of I–III degree hemorrhoidal disease: a double-blind multicenter prospective comparative study. *International Journal of Colorectal Disease*, 33, 1595-1600. DOI: 10.1007/s00384-018-3102-y

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Birch juice: scientific facts about the benefits, features of preparation and use

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Abstract . Birch juice is not only tasty, but also a very useful drink, which is certainly worth including in the family diet in the fall period. To replenish the lack of vitamins and trace minerals in the body, to reduce the amount of cholesterol in the blood and thereby prevent the development of cardiovascular diseases, to reduce weight and get rid of frequent nosebleeds - all this is possible with a tasty juice made of berries from figs, which you can easily prepare yourself!



Lingonberry juice is a natural cure for many diseases

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Abstract. Lingonberry, popularly called the berry of immortality for its numerous beneficial properties, is widely used both in cooking and in folk medicine. Lingonberry fruits are used to prepare a variety of jams, marmalades, and pie fillings. Sweet and sour fresh juice is also squeezed out of them, which is not only a delicious dessert, but also an effective medicine for many diseases. And you can make lingonberry juice yourself in your own kitchen.

Key words: lingonberry, lingonberry juice, beneficial properties, contraindications, composition, calorie content

Composition and calorie content

Lingonberries belong to the category of low-calorie products - 100 grams of berry pulp contains only 43 kcal. It contains a minimum of fats and proteins (0.5% and 0.7%) and very few carbohydrates - about 10%. The glycemic index of lingonberries is also quite low (25 units), which allows the consumption of berries and products derived from them, including freshly squeezed juice, even for people with diabetes or on a strict diet.

Lingonberry juice is a rich source of various vitamins, microelements and unique amino acids. Here are just some of the nutrients it contains:

- Potassium. Regulates water balance in the body, helps normalize blood pressure ^[1] and kidney function, and reduces the intensity of allergic manifestations.
- Calcium. Maintains healthy teeth and bones, prevents the development of osteoporosis and reduces the risk of fractures in middle-aged and older people ^[2], participates in the processes of muscle tissue contraction and eliminates cramps.
- Magnesium. Normalizes heart rate and lowers blood pressure, reduces pain in the joints and eliminates cramps, when paired with calcium, it increases bone density and accelerates tissue regeneration. A lack of a chemical element in the body can lead to the development of a number of chronic diseases: Alzheimer's disease, migraines, as well as cerebrovascular accidents, which carries a risk of stroke. ^[3]
- Vitamin C. Ascorbic acid strengthens the immune system ^[4], participates in collagen synthesis ^[5], prevents the development of scurvy ^[6], and is successfully used in oncology therapy. ^[7]

Also, the pulp of lingonberries contains many organic acids: citric, salicylic, malic, etc. Benzoic acid is especially valuable ^[8] (the amount depends on the degree of ripeness of the fruit) - its unique feature is that it blocks the growth of mold and various bacteria, which explains its long-term preservation freshness of berries.

Top 15 beneficial properties of lingonberry juice

1. Is the strongest antioxidant

Lingonberries belong to the category of superfoods and have long been highly valued in folk medicine due to the richest antioxidant content among berries. ^[9] Do you want to slow down the aging process and boost your immunity? Include delicious and very healthy lingonberry juice in your diet!

2. Has a powerful anti-cancer effect

Research shows that lingonberries, rich in polyphenols, inhibit the growth of cancer cells and have antitumor properties. ^[10]

3. Improves lipid metabolism in the liver

The anthocyanin-rich berries of lingonberries have lipid-lowering properties and help prevent the development of non-alcoholic fatty liver disease, a disease that can subsequently transform into fibrosis and then cirrhosis. ^[eleven]

4. Has antiviral and antimicrobial properties

It has been proven that lingonberry polyphenols reduce the viral and microbial load in the oral cavity, which, in turn, has a positive effect on the condition of the respiratory tract. Lingonberry juice also helps the body recover after Covid. ^[12]

5. Protects against cardiovascular disease

Lingonberries contain a large amount of anthocyanins and other polyphenols - freshly squeezed lingonberry juice protects myocardial tissue from ischemia-reperfusion injury, reducing the risk of cardiovascular disease and mortality ^[13], and also has the ability to lower blood pressure.

6. Successfully fights oral diseases

Research shows that lingonberries are one of the most effective remedies in the fight against bacteria that cause tooth decay and candidiasis. ^[14] The effect of lingonberry juice on the oral cavity for 30 seconds every day for six months has very positive results - the inflammatory processes of the oral mucosa and periodontitis tissues are reduced. ^[15]

7. Reduces symptoms of xerostomia

About 20% of older people complain of dry mouth and xerostomia caused by decreased function of the salivary glands. Research shows that gargling with lingonberry juice for 30 seconds daily for 6 months increases salivary flow and relieves symptoms of dry mouth. ^[16]

8. Prevents urinary tract infections

Lingonberry juice, especially when mixed with cranberry juice, changes the composition of the urine microbiome, which shows good results in the fight against urinary tract infections ^[17] and cystitis.

9. Improves skin condition

A drink rich in vitamin C stimulates the tissues to launch their own collagen and has a healing and rejuvenating effect on the skin. With daily consumption of 50 ml of lingonberry juice for 12 weeks, the epidermis is dramatically transformed - it becomes smoother, firmer and more elastic. ^[18]

10. Restores kidney function

Anthocyanins contained in lingonberry pulp have a powerful anti-inflammatory effect. Scientific research shows that daily consumption of lingonberry juice effectively protects the kidneys from acute damage caused by ischemia-reperfusion injury, ^[19] and also prevents the development of chronic diseases of the organ due to consumption of high-fat diets. ^[20]

11. Has antidiabetic activity

Lingonberries are widely known in folk medicine for their antidiabetic properties, which is confirmed by numerous scientific studies. Daily supplementation of lingonberry juice for 8 weeks in patients suffering from type 2 diabetes has shown excellent results in reducing blood glucose. ^[21]

12. Improves cognitive function

Research confirms that systematic consumption of lingonberry juice has a positive effect on memory and cognitive abilities, depressed by stress, due to increased antioxidant abilities of tissues. ^[22]

13. Protects against radiation damage

Standard anti-radiation drugs have a number of serious side effects. It has been proven that natural lingonberry juice, rich in anthocyanins, is no less effective against immunosuppression caused by radiation, but does not cause additional harm to the human body. ^[23]

14. Improves vision

In the course of scientific experiments, scientists have found that lingonberry juice is also effective in eliminating ophthalmological problems - when consumed systematically, it protects the retina from damage by ultraviolet radiation. ^[24]

15. Counteracts obesity

Obesity is becoming one of the main problems of humanity. And, as research shows, it is berries, including lingonberries, that are one of the most effective means for combating excess weight and obesity. They perfectly suppress appetite, reduce the synthesis and storage of lipids, modulate and heal the intestinal microbiota. ^[25]

Contraindications and features of consuming lingonberry juice

Despite the enormous benefits for the body, lingonberry juice also has a number of contraindications. In particular, it is not recommended for hypotensive people or people with low blood pressure. Also, experts do not advise exceeding the recommended dose, since excess benzoic acid can cause intoxication of the body.

Lingonberries belong to the category of low-allergenic berries, but even to them an unexpected reaction of the body may occur. ^[26] Therefore, for the first time, you should start trying lingonberry fruits or juice with minimal doses, a few berries or a few drops of juice, gradually increasing the amount to the recommended amount - 50-70 ml per day for children under 12 years of age, 250 ml for adults.

It is recommended to drink lingonberry juice between meals so that it brings maximum benefits to the body.

Recommendations for preparing and storing lingonberry juice

Juice is prepared from lingonberries using a juicer or juicer. The remaining cake after squeezing can be filled with a small amount of water and pressed again through a sieve.

The drink can be consumed immediately or stored for future use. For long-term storage, it is recommended to use the option of freezing or preservation by pre-pasteurization.

Expert commentary

Tatyana Eliseeva, nutritionist, nutritionist

Lingonberry juice is a unique drink that is not only a delicious dessert, but also a very effective natural medicine. Systematic consumption of fresh lingonberries helps to lose weight and improve skin condition, get rid of cystitis and diabetes, prevent the development of caries, improve vision and cognitive functions. Add this healthy drink to your diet to see its benefits and effectiveness from your own experience!

Literature

1. Stone, M. S., Martyn, L., & Weaver, C. M. (2016). Potassium intake, bioavailability, hypertension, and glucose control. *Nutrients*, 8(7), 444. DOI: 10.3390/nu8070444
2. Weaver, C. M., Alexander, D. D., Boushey, C. J., Dawson-Hughes, B., Lappe, J. M., LeBoff, M. S., ... & Wang, D. D. (2016). Calcium plus vitamin D supplementation and risk of fractures: an updated meta-analysis from the National Osteoporosis Foundation. *Osteoporosis International*, 27, 367-376. DOI: 10.1007/s00198-015-3386-5
3. Volpe, S. L. (2013). Magnesium in disease prevention and overall health. *Advances in nutrition*, 4(3), 378S-383S. DOI: 10.3945/an.112.003483
4. Ströhle, A., & Hahn, A. (2009). Vitamin C and immune function. *Medizinische Monatsschrift für Pharmazeuten*, 32(2), 49-54. PMID: 19263912
5. Gref, R., Deloménie, C., Maksimenko, A., Gouadon, E., Percoco, G., Lati, E., ... & Couvreur, P. (2020). Vitamin C-squalene bioconjugate promotes epidermal thickening and collagen production in human skin. *Scientific reports*, 10(1), 16883. DOI: 10.1038/s41598-020-72704-1
6. Valdés, F. (2006). Vitamina C. *Actas dermo-sifiliográficas*, 97(9), 557-568. DOI: 10.1016/s0001-7310(06)73466-4
7. Klimant, E., Wright, H., Rubin, D., Seely, D., & Markman, M. (2018). Intravenous vitamin C in the supportive care of cancer patients: a review and rational approach. *Current oncology*, 25(2), 139-148. DOI: 10.3747/co.25.3790

8. Bujor, O. C., Ginies, C., Popa, V. I., & Dufour, C. (2018). Phenolic compounds and antioxidant activity of lingonberry (*Vaccinium vitis-idaea* L.) leaf, stem and fruit at different harvest periods. *Food chemistry*, 252, 356-365. DOI: 10.1016/j.foodchem.2018.01.052
9. Kowalska, K. (2021). Lingonberry (*Vaccinium vitis-idaea* L.) fruit as a source of bioactive compounds with health-promoting effects—A review. *International Journal of Molecular Sciences*, 22(10), 5126. DOI: 10.3390/ijms22105126
10. Onali, T., Kivimäki, A., Mauramo, M., Salo, T., & Korpela, R. (2021). Anticancer effects of lingonberry and bilberry on digestive tract cancers. *Antioxidants*, 10(6), 850. DOI: 10.3390/antiox10060850
11. Madduma Hewage, S., Au-Yeung, K. K., Prashar, S., Wijerathne, C. U., O, K., & Siow, Y. L. (2022). Lingonberry improves hepatic lipid metabolism by targeting Notch1 signaling. *Antioxidants*, 11(3), 472. DOI: 10.3390/antiox11030472
12. Pärnänen, P., Lähteenmäki, H., Räisänen, I., Tervahartiala, T., & Sorsa, T. (2021). Lingonberry polyphenols: Potential SARS-CoV-2 inhibitors as nutraceutical tools?. *Physiological Reports*, 9(3). DOI: 10.14814/phy2.14741
13. Isaak, C. K., Petkau, J. C., Blewett, H., O, K., & Siow, Y. L. (2017). Lingonberry anthocyanins protect cardiac cells from oxidative-stress-induced apoptosis. *Canadian journal of physiology and pharmacology*, 95(8), 904-910. DOI: 10.1139/cjpp-2016-0667.
14. Vainionpää, A., Tuomi, J., Kantola, S., & Anttonen, V. (2019). Neonatal thrush of newborns: Oral candidiasis?. *Clinical and Experimental Dental Research*, 5(5), 580-582. DOI: 10.1002/cre2.213
15. Pärnänen, P., Lomu, S., Räisänen, I.T., Tervahartiala, T., & Sorsa, T. (2023). Antimicrobial and Anti-Inflammatory Oral Effects of Fermented Lingonberry Juice—A One-Year Prospective Human Intervention Study. *European Journal of Dentistry*. DOI: 10.1055/s-0042-1759619
16. Pärnänen, P., Lomu, S., Räisänen, I. T., Tervahartiala, T., & Sorsa, T. (2022). Effects of Fermented Lingonberry Juice Mouthwash on Salivary Parameters—A One-Year Prospective Human Intervention Study. *Dentistry Journal*, 10(4), 69. DOI: 10.3390/dj10040069
17. Hakkola, M., Vehviläinen, P., Muotka, J., Tejesvi, M. V., Pokka, T., Vähäsarja, P., ... & Tapiainen, T. (2023). Cranberry-lingonberry juice affects the gut and urinary microbiome in children—a randomized controlled trial. *APMIS*, 131(3), 112-124. DOI: 10.1111/apm.13292
18. Uchiyama, T., Tsunenaga, M., Miyanaga, M., Ueda, O., & Ogo, M. (2019). Oral intake of lingonberry and amla fruit extract improves skin conditions in healthy female subjects: A randomized, double-blind, placebo-controlled clinical trial. *Biotechnology and applied biochemistry*, 66(5), 870-879. DOI: 10.1002/bab.1800
19. Isaak, C. K., Wang, P., Prashar, S., O, K., Brown, D. C., Debnath, S. C., & Siow, Y. L. (2017). Supplementing diet with Manitoba lingonberry juice reduces kidney ischemia-reperfusion injury. *Journal of the Science of Food and Agriculture*, 97(9), 3065-3076. DOI: 10.1002/jsfa.8200
20. Madduma Hewage, S., Prashar, S., Debnath, S. C., O, K., & Siow, Y. L. (2020). Inhibition of inflammatory cytokine expression prevents high-fat diet-induced kidney injury: Role of lingonberry supplementation. *Frontiers in medicine*, 7, 80. DOI: 10.3389/fmed.2020.00080
21. Eid, H. M., Ouchfoun, M., Brault, A., Vallerand, D., Musallam, L., Arnason, J. T., & Haddad, P. S. (2014). Lingonberry (*Vaccinium vitis-idaea* L.) exhibits antidiabetic activities in a mouse model of diet-induced obesity. *Evidence-Based Complementary and Alternative Medicine*, 2014. DOI: 10.1155/2014/645812
22. Zuo, C., Li, W., Wang, L., Zhu, J., & Wang, Z. (2015). Effects of lingonberry extraction on the mice cognitive function damaged by chronic stress. *Wei Sheng yan jiu= Journal of Hygiene Research*, 44(6), 943-948. PMID: 26738388

23. Fan, Z. L., Wang, Z. Y., Zuo, L. L., & Tian, S. Q. (2012). Protective effect of anthocyanins from lingonberry on radiation-induced damages. *International journal of environmental research and public health*, 9(12), 4732-4743. DOI: 10.3390/ijerph9124732
24. Ogawa, K., Tsuruma, K., Tanaka, J., Kakino, M., Kobayashi, S., Shimazawa, M., & Hara, H. (2013). The protective effects of bilberry and lingonberry extracts against UV light-induced retinal photoreceptor cell damage in vitro. *Journal of agricultural and food chemistry*, 61(43), 10345-10353. DOI: 10.1021/jf402772h
25. Jiang, H., Zhang, W., Li, X., Xu, Y., Cao, J., & Jiang, W. (2021). The anti-obesogenic effects of dietary berry fruits: A review. *Food Research International*, 147, 110539. DOI: 10.1016/j.foodres.2021.110539
26. Matheu, V., Baeza, M. L., Zubeldia, J. M., & Barrios, Y. (2004). Allergy to lingonberry: A case report. *Clinical and Molecular Allergy*, 2(1), 1-3. DOI: 10.1186/1476-7961-2-2

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Lingonberry juice is a natural cure for a multitude of diseases

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Abstract . Lingonberry juice is a unique drink that is not only a delicious dessert, but also a very effective natural medicine. Systematic use of lingonberry juice helps to reduce weight and improve skin condition, get rid of cystitis and diabetes, prevent tooth decay, improve vision and cognitive function. Add this healthy drink to your diet to experience its benefits and effectiveness!



Schisandra juice : beneficial properties and features of consuming a unique drink

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Abstract. Chinese lemongrass, or schizandra, is a kind of vine that grows up to 15 meters long. The plant has nothing in common with citrus fruits, but received its name for the characteristic aroma emanating from its leaves. It is often used in landscape design to effectively decorate vertical surfaces and is considered one of the most beneficial for the body - it takes an honorable second place after ginseng.

All parts of Schisandra, from roots to seeds, have medicinal properties, but the most popular among admirers of healthy lifestyle and traditional medicine are its fruits, popularly called berries of five flavors for their original multifaceted taste. Healing tinctures and teas are prepared from them, and delicious and very healthy fresh juice is also squeezed out. Schisandra juice can be purchased at specialized retail outlets or prepared independently from fresh berries.

Key words: lemongrass, lemongrass juice, schizandra, schizandra juice, useful properties, contraindications, composition, calories

Composition and calorie content

Schisandra berries are a product with a record low calorie content - 100 grams of pulp contains only 11 kcal. They contain no fat, virtually no proteins and carbohydrates (1% and 1.9%, respectively), and the glycemic index is at the level of 10 units. Such indicators allow you to safely drink lemongrass juice even for people who are overweight and have diabetes.

In addition, lemongrass juice has a rich composition of various vitamins, microelements and other useful substances. In particular, it contains:

- Such powerful antioxidants as vitamins C ^[1] and E ^[2,3] protect cells from damage by free radicals and premature death (suppress the aging process of the body), and show good results in the treatment of endometriosis. ^[4] Ascorbic acid additionally helps improve immunity and protects against the development of scurvy. Vitamin E improves vascular elasticity and prevents the formation of cholesterol plaques, stabilizes the reproductive system, prevents the development of Alzheimer's disease, exhibits powerful apoptotic activity against a wide range of types of cancer cells and can be used as an effective adjuvant in oncology therapy. ^[5]
- Microelements: zinc (cleanses blood vessels of cholesterol, minimizes the level of cortisol, the stress hormone, improves the functioning of the cardiovascular system, helps fight weight loss, problems with healing ulcers ^[6] and wounds ^[7]), iron (is a component of hemoglobin - delivers oxygen to the body's cells and prevents the development of anemia ^[8]), builds immunity and improves the functioning of the thyroid gland), magnesium (lowers blood pressure, reduces pain in the joints, regulates blood sugar levels, eliminates muscle cramps ^[9]), etc.

Schisandra juice also contains tannins, which provide an antidiarrheal and hemostatic effect, as well as unique polyphenolic compounds, lignans (found in the seeds and fruits of the plant).^[10] The latter slow down the aging process of the skin, provide antitumor, antifibrotic and anticancer effects.^[eleven]

Top 8 beneficial properties of lemongrass juice

1. Provides hepatoprotective effect

Schisandra, widely used in traditional Chinese medicine as a remedy for many diseases, is also an effective hepatoprotector. It has been proven that the supplement in the form of lemongrass juice provides rapid restoration of the liver damaged by medications^[12], as well as oxidative stress caused by ethanol.^[13] As a result of experiments, scientists were able to establish that the lignan schisandrin, contained in schizandra juice, effectively fights liver steatosis caused by non-alcoholic fatty disease.^[14]

2. Effective in treating heart failure

Research shows that schizandra juice, especially in combination with coenzyme Q10, helps reduce the area of myocardial fibrosis in patients with heart failure, improves heart function^[15] and protects against the development of cardiovascular diseases.^[16]

3. Is an effective herbal adaptogen

Substances that help the body adapt to certain conditions, increase its resistance to various harmful environmental influences, as well as resistance to physical stress without increasing oxygen consumption are called adaptogens. Powerful natural adaptogens include plants such as ginseng, ginger, sea buckthorn, and Schisandra chinensis. It has been proven that consuming juice squeezed from the pulp of Schisandra berries promotes accelerated recovery of the body after illness, memory impairment and cognitive function, and other problems.^[17]

4. Useful in the treatment and prevention of respiratory viral infections

Plant adaptogens, which include Schisandra fruits, show excellent potential in the treatment and prevention of respiratory infections. It has been proven that drinking lemongrass juice, especially in combination with melatonin, promotes accelerated recovery of the body after illnesses.^[18]

5. Helps restore cognitive processes

Chemotherapy used to treat cancer can have a negative impact on cognitive function. Taking herbal adaptogens, in particular lemongrass juice, helps to avoid and/or reduce the negative effects of medications.^[19]

6. Suppresses the manifestations of dermatitis

Scientists have concluded that Schisandra chinensis, used in oriental medicine as an effective remedy for many diseases, also shows good results in the treatment of dermatological problems, in particular atopic dermatitis.^[20]

7. Has a tonic effect

Schisandra juice is an excellent alternative to coffee. The drink has a good invigorating effect - it increases a person's performance without having a negative effect on the body and without depleting nerve cells (unlike other popular tonics). The period of invigorating effects also lasts much longer than from coffee or tea - up to 6 hours.

8. Positively affects potency

Research shows that Schisandra chinensis also shows good results in the treatment of male diseases. In particular, in the treatment of impotence and benign prostatic hyperplasia. ^[21]

Contraindications, features of consuming lemongrass juice

When planning to include lemongrass juice in your diet, remember that you should drink it in small quantities and it is better not in pure, but in diluted form - a teaspoon of liquid in a glass of water or any other juice (apple, grape, carrot, etc.)

Please also note that despite all its positive properties, the drink has some limitations. In particular, it should not be used by hypertensive patients due to increased blood pressure and increased heart rate, as well as people suffering from insomnia, pregnant women, and children under 12 years of age.

Note! Schisandra berry juice is not recommended to be taken simultaneously with antidepressants, as such a "cocktail" can negatively affect your health. In particular, experts warn that drinking Schisandra juice together with bupropion (an atypical antidepressant used to treat depression and nicotine addiction) can cause consequences such as arthralgia (joint pain) and thrombocytopenia (a pathological decrease in the number of platelets in the blood). Taking schizandra juice together with amitriptyline can lead to delirium (mental disorders), and combination with fluoxetine can lead to dysuria (impaired urination). ^[22]

Recommendations for preparing and storing lemongrass juice

Making juice from lemongrass fruits yourself is quite simple. Sort through the berries, separating the debris, spoiled and unripe fruits, rinse thoroughly, and drain in a colander. After this, mash the fruits with a wooden masher in a glass bowl and squeeze out the resulting pulp through cheesecloth.

The resulting liquid can be frozen for long-term storage, poured into special containers or zip bags, or canned by pre-pasteurizing it.

Expert commentary

Tatyana Eliseeva, nutritionist, nutritionist

Schisandra juice is a unique drink that has been widely used for many centuries in Eastern medicine. With its help, you can improve your well-being, increase the tone and performance of the body, cleanse and protect the liver from damage by drugs and alcoholic beverages, as well as quickly and fully recover from colds and viral diseases. Add this super fresh juice to your diet to see its benefits and effectiveness from your own experience!

Literature

1. Eliseeva, T., & Mironenko, A. (2018). Vitamin C (ascorbic acid) description, benefits and where it is contained. *Journal of Healthy Nutrition and Dietetics*, 2(4), 33-44. DOI: 10.59316/.vi4.19
2. Rabkin, B., Tirosh, O., & Kanner, J. (2022). Reactivity of Vitamin E as an Antioxidant in Red Meat and the Stomach Medium. *Journal of Agricultural and Food Chemistry*, 70(38), 12172-12179. DOI: 10.1021/acs.jafc.2c03674
3. Eliseeva, T., & Mironenko, A. (2018). Vitamin E description, benefits, effect on the body and the best sources. *Journal of Healthy Nutrition and Dietetics*, 4(6). DOI: 10.59316/.vi6.33
4. Amini, L., Chekini, R., Nateghi, M.R., Haghani, H., Jamialahmadi, T., Sathyapalan, T., & Sahebkar, A. (2021). The effect of combined vitamin C and vitamin E supplementation on oxidative stress markers in women with endometriosis: a randomized, triple-blind placebo-controlled clinical trial. *Pain Research and Management*, 2021, 1-6. DOI: 10.1155/2021/5529741
5. Sylvester, P. W. (2007). Vitamin E and apoptosis. *Vitamins & Hormones*, 76, 329-356. DOI: 10.1016/S0083-6729(07)76012-0
6. Muhamed, P. K., & Vadstrup, S. (2014). Zinc is the most important trace element. *Ugeskrift for laeger*, 176(5), V11120654-V11120654. PMID: 25096007
7. Lansdown, A. B., Mirastschijski, U., Stubbs, N., Scanlon, E., & Ågren, M. S. (2007). Zinc in wound healing: theoretical, experimental, and clinical aspects. *Wound repair and regeneration*, 15(1), 2-16. DOI: 10.1111/j.1524-475X.2006.00179.x
8. Eliseeva, T. (2021). Iron (Fe) for the body-30 best sources and importance for health. *Journal of Healthy Nutrition and Dietetics*, 4(18), 66-75. DOI: 10.59316/.vi18.148
9. Gröber, U., Schmidt, J., & Kisters, K. (2015). Magnesium in prevention and therapy. *Nutrients*, 7(9), 8199-8226. DOI: 10.3390/nu7095388
10. Slanina, J., Táborová, E., & Lojková, L. (1997). Lignans in the seeds and fruits of *Schisandra chinensis* cultured in Europe. *Planta medica*, 63(03), 277-280. DOI: 10.1055/s-2006-957676
11. Zhou, Y., Men, L., Sun, Y., Wei, M., & Fan, X. (2021). Pharmacodynamic effects and molecular mechanisms of lignans from *Schisandra chinensis* Turcz.(Baill.), a current review. *European Journal of Pharmacology*, 892, 173796. DOI: 10.1016/j.ejphar.2020.173796
12. Zhu, P., Li, J., Fu, X., & Yu, Z. (2019). *Schisandra* fruits for the management of drug-induced liver injury in China: A review. *Phytomedicine*, 59, 152760. DOI: 10.1016/j.phymed.2018.11.020
13. Yuan, R., Tao, X., Liang, S., Pan, Y., He, L., Sun, J., ... & Wang, C. (2018). Protective effect of acidic polysaccharide from *Schisandra chinensis* on acute ethanol-induced liver injury through reducing CYP2E1-dependent oxidative stress. *Biomedicine & Pharmacotherapy*, 99, 537-542. DOI: 10.1016/j.biopha.2018.01.079
14. Yan, L. S., Zhang, S. F., Luo, G., Cheng, B. C. Y., Zhang, C., Wang, Y. W., ... & Zhang, Y. (2022). Schisandrin B mitigates hepatic steatosis and promotes fatty acid oxidation by inducing autophagy through AMPK/mTOR signaling pathway. *Metabolism*, 131, 155200. DOI: 10.1016/j.metabol.2022.155200.
15. Wen, S., Yang, K., Bai, Y., Wu, Y., Liu, D., Wu, X., ... & Sun, J. (2023). Investigating the Mechanism of Action of *Schisandra chinensis* Combined with Coenzyme Q10 in the Treatment of Heart Failure Based on PI3K-AKT Pathway. *Drug Design, Development and Therapy*, 939-957. DOI: 10.2147/DDDT.S393995
16. Zhang, M. Y., Wu, H. W., Xu, L. P., & Yang, H. J. (2018). Pharmacological effect of *Schisandrae Chinensis* Fructus and relative active components on cardiovascular and cerebrovascular diseases. *Zhongguo Zhong yao za zhi= Zhongguo Zhongyao Zazhi= China Journal of Chinese Materia Medica*, 43(8), 1536-1546. DOI: 10.19540/j.cnki.cjcmm.20180205.001

17. Todorova, V., Ivanov, K., Delattre, C., Nalbantova, V., Karcheva-Bahchevanska, D., & Ivanova, S. (2021). Plant adaptogens—History and future perspectives. *Nutrients*, 13(8), 2861. DOI: 10.3390/nu13082861
18. Panossian, A., & Brendler, T. (2020). The role of adaptogens in prophylaxis and treatment of viral respiratory infections. *Pharmaceuticals*, 13(9), 236. DOI: 10.3390/ph13090236
19. Seo, E. J., Klauck, S. M., Efferth, T., & Panossian, A. (2019). Adaptogens in chemobrain (Part I): Plant extracts attenuate cancer chemotherapy-induced cognitive impairment—Transcriptome-wide microarray profiles of neuroglia cells. *Phytomedicine*, 55, 80-91. DOI: 10.1016/j.phymed.2018.10.022.
20. Kang, Y. H., & Shin, H. M. (2012). Inhibitory effects of Schizandra chinensis extract on atopic dermatitis in NC/Nga mice. *Immunopharmacology and Immunotoxicology*, 34(2), 292-298. DOI: 10.3109/08923973.2011.602689.
21. Choo, S.H., Sung, H.H., Chae, M.R., Kang, S.J., Han, D.H., Park, J.K., ... & Lee, S.W. (2014). Effects of Schisandra chinensis extract on the relaxation of isolated human prostate tissue and smooth muscle cell. *Journal of ethnopharmacology*, 156, 271-276. DOI: 10.1016/j.jep.2014.08.025
22. Siwek, M., Woron, J., Wrzosek, A., Gupało, J., & Chrobak, A. A. (2023). Harder, better, faster, stronger? Retrospective review chart of adverse events of interactions between adaptogens and antidepressant drugs. *Frontiers in Pharmacology*, 14. DOI: 10.3389/fphar.2023.1271776

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Lemongrass juice: useful properties and peculiarities of drinking a unique drink

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Abstract . Lemongrass juice is a unique drink widely used for many centuries in Oriental medicine. With its help, you can improve your health, increase the tone and efficiency of the body, cleanse and protect the liver from damage by drugs and alcoholic beverages, as well as quickly and fully recover from colds and viral diseases. Add this superfresh to your diet to experience its benefits and

effectiveness!



Sea buckthorn juice: 10+ beneficial properties of a delicious medicine

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Abstract. The bright yellow berries of sea buckthorn, as if clinging to the thorny branches of the bush on all sides, for which the plant got its name, have a pleasant sweet and sour taste and a peculiar aroma, vaguely reminiscent of pineapple. It was this taste similarity that gave the fruit another original name - *Siberian pineapple*. It is also one of the richest plants in vitamins and microelements since time immemorial and has been widely used in Chinese and Tibetan medicine to this day. After all, literally everything in it is healing - from roots to seeds. For example, the bark is a rich source of serotonin ^[1], the happiness hormone. ^[2] According to scientists, there is 1000 times more of it than in bananas or chocolate! But the fruits of the plant are no less valuable. Healthy and very tasty juice is squeezed out of them, and healing sea buckthorn oil is prepared from the cakes.

You can also find sea buckthorn juice on the shelves of modern supermarkets. But most often, such a drink contains sugar and other preservatives, which reduces its health value. Therefore, to obtain the most healthy fresh juice, it is recommended to prepare it yourself from fresh berries.

Key words: sea buckthorn, sea buckthorn juice, beneficial properties, contraindications, composition, calorie content

Composition and calorie content

Sea buckthorn fruits, and, accordingly, juice, do not have too many calories (84 kcal), up to 6% carbohydrates, almost the same amount of fat and less than 1% protein. But at the same time, the product has a unique chemical composition - the bright sunny berries contain almost all the nutrients found in nature, for which nutritionists even nicknamed sea buckthorn the “vitamin bomb”. And there is a reason! In particular, sea buckthorn juice is rich in the following vitamins and microelements:

- Vitamin C ^[3], which is 10 times more in sea buckthorn fruits than in lemons (about 400 mg per 100 grams of product ^[4])! It is noteworthy that the concentration of the vitamin does not decrease even after the process of freezing berries or products derived from them, in particular juice. Ascorbic acid, a powerful antioxidant, stops the aging process, triggers the body's production of its own collagen and improves the condition of the epidermis ^[5]. Ascorbic acid also improves immunity ^[6], prevents the development of scurvy and periodontal disease, and, as research shows, is very effectively used in the prevention of cancer. ^[7]
- B vitamins. For example, niacin, or nicotinic acid, which is rarely found in nature, normalizes cerebral circulation and improves cognitive functions, is successfully used in the treatment of Parkinson's disease and Alzheimer's disease, multiple sclerosis ^[8], stabilizes cholesterol levels in the blood and reduces the risk of developing atherosclerosis (can even be used as a substitute for statins in patients intolerant to the latter ^[9]), shows good results in the treatment of erectile dysfunction.
- Vitamin E, or tocopherol. This antioxidant, beneficial for the human body and responsible for beauty and reproductive properties, is practically not found in products of animal origin. It is usually found in fruits and vegetables. ^[10] Sea buckthorn is especially rich in vitamin E. Beneficial fat-soluble microelements, such as tocopherol, prevent the development of cholesterol plaques, which reduces the risk of strokes and heart attacks, regulates the production of sex hormones and normalizes reproductive health - stabilizes the menstrual cycle, ensures normal formation of the placenta and fetus during pregnancy, and maintains health in men prostate gland, improves sperm motility, which increases the chances of fertilization. Numerous studies show that vitamin E is successfully used in the prevention and treatment of Alzheimer's disease and other neurological diseases. ^[eleven]
- Also, in the composition of sea buckthorn fruits you can find many useful micro- and macroelements (sodium, magnesium, calcium, manganese, silicon, etc.), various organic acids (quinic, malic, oxalic, tartaric, citric, succinic, etc. ^[12]).

Sea buckthorn juice also contains tannins (providing antimicrobial, anticarcinogenic ^[13], anti-inflammatory effect, reduce the severity of COVID-19, in particular, the pneumonia caused by it ^[14]), carotenoids (counteract oxidative stress and promote healthy aging and longevity ^[15], increase “good” cholesterol, which prevents the development of heart disease -vascular diseases), coumarins (pain relievers, help reduce fever, have antibacterial activity, almost on par with antibiotics ^[16], prevent excessive blood thickening), etc.

Top 11 beneficial properties of sea buckthorn juice

1. Improves cardiovascular health

Possessing high antioxidant properties, sea buckthorn juice helps reduce cholesterol levels in the blood, which has a beneficial effect on the condition of the heart and blood vessels - the risk of developing such dangerous diseases as heart attack, stroke, etc. is reduced ^[17]

2. Has antidiabetic activity

It has been proven that systematic consumption of natural, without added sugar, sea buckthorn juice helps to quickly reduce blood glucose levels, which has a positive effect on the health of patients suffering from type 2 diabetes. ^[18,19]

3. Helps reduce weight

Sea buckthorn is a rich source of unique flavonoids , particularly isorhamnetin . Experiments show that with the systematic use of products containing this active ingredient, you can prevent the risks of developing obesity and quickly remove extra pounds. ^[20]

4. Has antimicrobial properties

In the course of scientific research, it was possible to establish that sea buckthorn is a berry with high antimicrobial activity. ^[21] That is why healing sea buckthorn juice is often included in special wound-healing and anti-inflammatory ointments. It helps in the treatment of ulcers, burns, various wounds and eczema, accelerates the healing of damaged tissue, heals and smoothes the skin.

5. Helps fight helminths

It is known that some juices, in particular fresh juice pressed from sea buckthorn berries, have good anthelmintic activity (effective in the fight against gastrointestinal nematodes and roundworms). ^[22] This unique feature of this tasty drink allows for systematic antiparasitic prevention for the whole family, without the use of chemical (not always safe for health) pharmaceutical products.

6. Has anti-carcinogenic properties

Sea buckthorn, which contains in abundance a wide variety of nutrients and biologically active substances (vitamins, carotenoids , flavonoids , amino acids, etc.), has high antitumor properties - it helps to prevent and stop the development of oncological processes. ^[23] Sea buckthorn juice is also recommended to be consumed during the treatment of oncology in order to alleviate and eliminate the symptoms of mucositis ^[24] - acute inflammation of the oral mucosa resulting from radiation or chemotherapy.

7. Restores natural intestinal microflora

Sea buckthorn juice, rich in polyphenols, has a beneficial effect on the intestinal microflora, saturating it with beneficial bacteria and microorganisms ^[25] , which improves the functioning of the gastrointestinal tract.

8. Shows hepatoprotector properties

Scientific research shows that sea buckthorn is also successfully used for the prevention and treatment of liver diseases ^[26] - it improves metabolic processes, normalizes the production of enzymes, improves the excretion of bile, protects against harmful factors, cleanses from toxins and waste, and also shows good results in therapy non-alcoholic fatty liver disease. ^[27]

9. Good for women's health

Flavonoids contained in sea buckthorn berries, in particular myricetin , apigenin and luteolin , are powerful antioxidants and, as experiments show, have a beneficial effect on the female body. With the systematic consumption of sea buckthorn juice, the risk of developing ovarian cancer is reduced, the symptoms of vulvovaginal atrophy, which often develops during menopause, endometriosis , inflammation of the uterus, etc. are alleviated ^[28]

10. Can be used in the treatment of Aujeszky's disease

Aujeszky's disease , also called pseudorabies , or infectious meningoencephalitis , is a viral infection that mainly affects warm-blooded animals, but can also manifest itself in humans in the form of itching and fever. During medical experiments, scientists were able to find out that systematic consumption of sea buckthorn juice at different periods of the virus's life cycle reduces the likelihood of its penetration into cells. That is, sea buckthorn juice in this case acts as a natural, but at the same time very effective antiviral drug. ^[29]

11. Effectively used in dentistry

Due to its unique antimicrobial properties, rich in flavanoids , in particular isorhamnetin , sea buckthorn juice is often prescribed by dentists for the treatment and prevention of various inflammatory processes in the oral cavity: stomatitis, gingivitis, periodontitis , bleeding gums, etc. ^[30]

Contraindications and features of consuming sea buckthorn juice

Despite all the benefits of sea buckthorn juice, it also has a number of contraindications. In particular, an excess of a drink rich in microelements can cause an allergic reaction in the body. The recommended daily dose is 100 ml of juice twice a day between meals. It also cannot be ruled out that a person who has not previously consumed sea buckthorn or products derived from it may have an individual intolerance. Therefore, for the first time you should try sea buckthorn berries or fresh juice from them carefully, in small doses, carefully monitoring the body's reaction.

You can drink sea buckthorn juice either pure or diluted. The latter option is often used in children's menus. Nutritionists do not recommend that children drink concentrated natural fresh sea buckthorn , but recommend diluting it with water and other drinks before tasting: compotes, fruit drinks, vegetable or fruit juices, etc. Sea buckthorn juice can also be used in the food industry to diversify the usual palette of flavors and enrich products with additional biologically active compounds. For example, wheat beer enriched with 5% fresh sea buckthorn , according to experts, promises to become a new trend in the brewing industry in the near future. ^[31]

It is recommended to limit the consumption of sea buckthorn juice in case of urolithiasis, acute cholecystitis and pancreatitis. It is also worth considering that sea buckthorn thins the blood. Therefore, this juice should not be consumed after injuries and operations to avoid the risk of bleeding.

Recommendations for preparing and storing sea buckthorn juice

Before processing, it is recommended to carefully sort the berries, clear them of debris and small leaves, rinse and dry. To extract juice, you can use a juicer or juicer, or, after slightly boiling the fruits, throw them in a colander and squeeze out the healing liquid using gauze. The pomace remaining after spinning should not be thrown away. They can be used to prepare healthy sea buckthorn oil, rich in

unique unsaturated fatty acids, which is often used in cosmetology to prepare cosmetic products that improve the condition of dry, flaky and aging skin. ^[32]

The prepared juice can be stored in the refrigerator (no more than a few days). For longer storage, it is recommended to freeze the product (when frozen, it does not lose its beneficial substances) or canned, having previously pasteurized it.

Expert commentary

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Sea buckthorn juice is a tasty, refreshing and very healthy drink. With its help, you can get rid of many health problems, improve the condition of the liver and gastrointestinal tract, lose weight, strengthen the cardiovascular system, and cleanse the body of toxins and parasites. Add this healing drink to your family's diet and see its benefits and effectiveness from your own experience!

Literature

1. Galitsyn , G., Lomovskiy , I., & Podgorbunskikh , E. (2023). Seasonal and Geographic Variation in Serotonin Content in Sea Buckthorn. *Plant Foods for Human Nutrition* , 78(1), 186-192. DOI: 10.1007/s11130-022-01038-2
2. MacLean, M. R., Fanburg , B., Hill, N., Lazarus, H. M., Pack, T. F., Palacios, M., ... & Wring, S. A. (2011). Serotonin and pulmonary hypertension; sex and drugs and ROCK and Rho. *Comprehensive Physiology* , 12(4), 4103-4118. DOI: 10.1002/cphy.c220004
3. Eliseeva , T., & Mironenko , A. (2018). Vitamin C (ascorbic acid) description, benefits and where it is contained. *Journal of healthy nutrition and dietetics* , 2(4), 33-44. DOI: 10.59316/.vi4.19.
4. Gutzeit , D., Baleanu , G., Winterhalter , P., & Jerz , G. (2008). Vitamin C content in sea buckthorn berries (*Hippophae rhamnoides* L. ssp. *rhamnoides*) and related products: A kinetic study on storage stability and the determination of processing effects. *Journal of food science* , 73(9), C615-C620. DOI: 10.1111/j.1750-3841.2008.00957.x
5. Pullar , J. M., Carr , A. C., & Vissers , M. (2017). The roles of vitamin C in skin health. *Nutrients* , 9(8), 866. DOI: 10.3390/nu9080866
6. Neethu , R. S., Reddy, M. J., Batra , S., Srivastava, S. K., & Syal , K. (2022). Vitamin C and its therapeutic potential in the management of COVID19. *Clinical Nutrition ESPEN*, 50, 8-14. DOI: 10.1016/j.clnesp.2022.05.026
7. Granger, M., & Eck, P. (2018). Dietary vitamin C in human health. *Advances in food and nutrition research* , 83, 281-310. DOI: 10.1016/bs.afnr.2017.11.006
8. Wuerch , E., Urgoiti , G. R., & Yong, V. W. (2023). The Promise of Niacin in Neurology. *Neurotherapeutics* , 1-18. DOI: 10.1007/s13311-023-01376-2
9. Julius, U. (2015). Niacin as an antidyslipidemic drug. *Canadian journal of physiology and pharmacology*, 93(12), 1043-1054. DOI: 10.1139/cjpp-2014-0478
10. Eliseeva , T., & Mironenko , A. (2018). Vitamin E - description, benefits, effect on the body and the best sources. *Journal of healthy nutrition and dietetics* , 4(6). DOI: 10.59316/.vi6.33.
11. Berman, K., & Brodaty , H. (2004). Tocopherol (vitamin E) in Alzheimer's disease and other neurodegenerative disorders. *CNS drugs* , 18, 807-825. DOI: 10.2165/00023210-200418120-00005
12. Yampolsky , A., & Eliseeva , T. (2020). Sea buckthorn (Latin: *Hippophaë*). *Journal of healthy eating and dietetics* , (14), 2-14. DOI: 10.59316/.vi14.86.

13. Chung, K. T., Wong, T. Y., Wei, C. I., Huang, Y. W., & Lin, Y. (1998). Tannins and human health: a review. *Critical reviews in food science and nutrition*, 38(6), 421-464. DOI: 10.1080/10408699891274273
14. Furukawa, R., Kitabatake, M., Oujji-Sageshima, N., Suzuki, Y., Nakano, A., Matsumura, Y., ... & Ito, T. (2021). Persimmon-derived tannin has antiviral effects and reduces the severity of infection and transmission of SARS-CoV-2 in a Syrian hamster model. *Scientific reports*, 11(1), 23695. DOI: 10.1038/s41598-021-03149-3
15. Tan, B. L., & Norhaizan, M. E. (2019). Carotenoids: How effective are they to prevent age-related diseases?. *Molecules*, 24(9), 1801. DOI: 10.3390/molecules24091801
16. Tkacheva, N., & Eliseeva, T. (2020). Antibiotic food. *Journal of healthy nutrition and dietetics*, (11). DOI: 10.59316/j.edpl.2020.11.16
17. Olas, B. (2016). Sea buckthorn as a source of important bioactive compounds in cardiovascular diseases. *Food and Chemical Toxicology*, 97, 199-204. DOI: 10.1016/j.fct.2016.09.008
18. Wang, K., Xu, Z., & Liao, X. (2022). Bioactive compounds, health benefits and functional food products of sea buckthorn: A review. *Critical Reviews in Food Science and Nutrition*, 62(24), 6761-6782. DOI: 10.1080/10408398.2021.1905605
19. Dupak, R., Hrnkova, J., Simonova, N., Kovac, J., Ivanisova, E., Kalafova, A., ... & Capcarova, M. (2022). The consumption of sea buckthorn (*Hippophae rhamnoides* L.) effectively alleviates type 2 diabetes symptoms in spontaneous diabetic rats. *Research in Veterinary Science*, 152, 261-269. DOI: 10.1016/j.rvsc.2022.08.022
20. Gong, G., Guan, Y. Y., Zhang, Z. L., Rahman, K., Wang, S. J., Zhou, S., ... & Zhang, H. (2020). Isorhamnetin: A review of pharmacological effects. *Biomedicine & Pharmacotherapy*, 128, 110301. DOI: 10.1016/j.biopha.2020.110301
21. Nowak, D., Gośliński, M., & Kłębukowska, L. (2022). Antioxidant and antimicrobial properties of selected fruit juices. *Plant Foods for Human Nutrition*, 77(3), 427-435. DOI: 10.1007/s11130-022-00983-2
22. Eliseeva, T., & Tkacheva, N. (2020). Food against parasites. *Journal of Healthy Eating and Dietetics*, (11). DOI: 10.59316/j.edpl.2020.11.17
23. Zeb, A. (2006). Anticarcinogenic potential of lipids from *Hippophae*; Evidence from the recent literature. *Asian Pacific Journal of Cancer Prevention*, 7(1), 32. PMID: 16629511
24. Kuduban, O., Mazlumoglu, M.R., Kuduban, S.D., Erhan, E., Cetin, N., Kukula, O., ... & Cankaya, M. (2016). The effect of *hippophae rhamnoides* extract on oral mucositis induced in rats with methotrexate. *Journal of Applied Oral Science*, 24, 423-430. DOI: 10.1590/1678-775720160139
25. Attri, S., & Goel, G. (2018). Influence of polyphenol rich seabuckthorn berries juice on release of polyphenols and colonic microbiota on exposure to simulated human digestion model. *Food research international*, 111, 314-323. DOI: 10.1016/j.foodres.2018.05.045
26. Ma, Q. G., He, N. X., Huang, H. L., Fu, X. M., Zhang, Z. L., Shu, J. C., ... & Wei, R. R. (2023). *Hippophae rhamnoides* L.: A Comprehensive Review on the Botany, Traditional Uses, Phytonutrients, Health Benefits, Quality Markers, and Applications. *Journal of Agricultural and Food Chemistry*, 71(12), 4769-4788. DOI: 10.1021/acs.jafc.2c06916
27. Guo, Z., Cheng, J., Zheng, L., Xu, W., & Xie, Y. (2021). Mechanochemical-assisted extraction and hepatoprotective activity research of flavonoids from Sea buckthorn (*Hippophae rhamnoides* L.) Pomace. *Molecules*, 26(24), 7615. DOI: 10.3390/molecules26247615
28. Mihal, M., Roychoudhury, S., Sirotkin, A. V., & Kolesarova, A. (2023). Sea buckthorn, its bioactive constituents, and mechanism of action: potential application in female reproduction. *Frontiers in Endocrinology*, 14. DOI: 10.3389/fendo.2023.1244300

29. Huan , C., Xu, Y., Zhang, W., Pan, H., Zhou, Z., Yao, J., ... & Gao, S. (2022). Hippophae rhamnoides polysaccharides dampen pseudorabies virus infection through downregulating adsorption, entry and oxidative stress. International Journal of Biological Macromolecules , 207, 454-463. DOI: 10.1016/j.ijbiomac.2022.03.041
30. Tkacheva , N., & Eliseeva , T. (2021). Food for teeth-best and worst foods according to scientists. Journal of healthy nutrition and dietetics , 4(18), 21-25. DOI: 10.59316/.vi18.137.
31. Belcar , J., & Gorzelany , J. (2022). Feasibility of Defatted Juice from Sea-Buckthorn Berries (Hippophae rhamnoides L.) as a Wheat Beer Enhancer. Molecules , 27(12), 3916. DOI: 10.3390/molecules27123916
32. Tkacheva , N., & Eliseeva , T. (2021). Food for skin - 12 products for its beauty and health. Journal of healthy nutrition and dietetics, 3(17), 44-48. DOI: 10.59316/.vi17.121.

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Sea buckthorn juice: 10+ beneficial properties of the tasty remedy

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