

Prebiotics - description, benefits, effect on the body and the best sources

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Abstract. Prebiotics are substances that provide food for beneficial microorganisms that inhabit our body. Today, doctors are sounding the alarm: according to statistics, every second resident of a metropolis experiences a lack of prebiotics in the body.

And the consequence of this is dysbacteriosis, colitis, dermatitis, joint problems and many other unpleasant health problems that are much easier to prevent than to treat.

Most often, when problems with intestinal health arise, we are recommended to use special preparations containing beneficial bacteria identical to the natural intestinal microflora (probiotics), which, in theory, should help restore the health of internal organs.

However, such drugs do not always work. Sometimes patients do not notice much difference in their condition before and after treatment. This is where our faithful friends, prebiotics, come into the picture.

Keywords: prebiotics, general characteristics, daily requirement, digestibility, beneficial properties, signs of deficiency, signs of excess

Foods rich in prebiotics:

- Breast milk
- Dairy
- Fruits (apples [1], pears [2], plums [3])
- Cabbage [4]
- Cereals
- Garlic [5]
- Onions [6]
- Whole wheat bread
- Beans [7]
- Soybeans
- Jerusalem artichoke
- Corn [8]
- Dandelion [9]
- Chicory
- Artichoke

General characteristics of prebiotics

Prebiotics are carbohydrates [10], or sugars, that enter our body along with food, dietary supplements [11] and medications. There are 2 main groups of prebiotics: oligosaccharides and polysaccharides.

Most prebiotics belong to the first group of low molecular weight carbohydrates - oligosaccharides, which are found in vegetables, herbs, cereals, milk and dairy products.

The group of polysaccharides is represented by such useful substances as pectin, inulin and plant fiber [12]. We find them in vegetables, fruits, bran and grains.

All prebiotics have the following properties:

- safe for health;
- are broken down and metabolized in the large intestine;
- are necessary substances to stimulate the growth of healthy microflora.

The most popular semi-synthetic prebiotics today include lactulose, which restores normal intestinal flora and is used as prescribed by a doctor for bottle-fed children. It is also indicated for adults with a lack of beneficial bacteria in the body.

Unlike probiotics, prebiotics act on the body more slowly, but the results of their use are more lasting. In some cases, doctors recommend the combined use of prebiotics along with probiotics.

Daily requirement for prebiotics

Depending on the type of prebiotics used, their daily requirement is determined. For example, the body's need for plant fiber is about 30 grams per day; lactulose is taken to restore intestinal microflora, starting from 3 ml per day. The permissible amount of lactose for an adult is 40 grams per day.

The need for prebiotics is increasing:

- with reduced immunity;
- low absorption of nutrients;
- constipation [13];
- dysbacteriosis [14];
- dermatitis [15];
- intoxication of the body;
- arthritis [16];
- infectious diseases of the urinary system.

The need for prebiotics is reduced:

- in the absence in the body of enzymes necessary for the breakdown of prebiotics;
- with individual intolerance and allergic reactions to these nutritional components;
- with existing medical contraindications, in connection with identified foreign diseases. For example, garlic and garlic tincture can cause heart problems in people with a predisposition to heart attacks.

Digestibility of prebiotics

Prebiotics are substances that are not processed by the body in the upper gastrointestinal tract, and only with the help of the enzyme betaglycosidase, their preparation and absorption by lacto-, bifidobacteria and lactic acid streptococci begins in the large intestine.

Beneficial properties of prebiotics, their effect on the body:

Prebiotics are metabolized by the body to produce lactic, acetic, butyric and propionic acid. At the same time, there is active growth and development of beneficial microflora and suppression of harmful ones.

The body gets rid of the growth of populations of staphylococci [17], clostridia, and enterobacteria. In the intestines, putrefactive processes are suppressed and beneficial bacteria multiply successfully.

Thus, the gastrointestinal tract, genitourinary system, joints [18] and skin [19] are improved. Active regeneration of the colon mucosa occurs, which leads to relief from colitis [20].

Interaction with other elements

The use of prebiotics increases the absorption of calcium [21], which increases bone strength and density. Blood cholesterol levels [22] are normalized, and the synthesis of bile acids is optimized. Magnesium [23], zinc [24] and iron [25] are better absorbed.

Signs of a lack of prebiotics in the body:

- frequent skin inflammations (acne, acne) [26];
- constipation;
- indigestion of food;
- colitis;
- bloating;
- frequent colds;
- skin rashes;
- joint inflammation.

Signs of excess prebiotics in the body

Usually, there is no excess of prebiotics in the body. Most often they are well tolerated by the body. In rare cases, individual intolerance to some of them may occur, with skin irritation and some other manifestations of allergies observed [27].

Factors influencing the content of prebiotics in the body:

The level of prebiotics in the body is influenced by the overall health of the gastrointestinal tract and the presence of the necessary enzyme betaglycosidase. The second factor is good nutrition including the required amount of prebiotics.

Prebiotics for beauty and health

Clear skin, healthy complexion, absence of dandruff, energy – this is what one who prefers healthy foods containing prebiotics gains. A gradual reduction in body weight is possible due to the full absorption of nutrients from food and the reduction of unhealthy appetite.

Literature

1. Tkacheva, N., & Eliseeva, T. (2021). Apples – benefits and harms proven by nutritionists. *Journal of Healthy Eating and Dietetics*, 3 (17), 84-88. DOI: 10.59316/.vi17.130
2. Eliseeva, T., & Yampolsky, A. (2019). Pear (lat. Pýrus). *Journal of Healthy Eating and Dietetics*, 3 (9), 56-68. DOI: 10.59316/.vi9.51
3. Eliseeva, T., & Tkacheva, N. (2019). Plum (lat. Prunus). *Journal of Healthy Eating and Dietetics*, 3 (9), 24-33. DOI: 10.59316/.vi9.48
4. Eliseeva, T., & Tkacheva, N. (2018). White cabbage (lat. Brassica). *Journal of Healthy Eating and Dietetics*, 4 (6), 13-23. DOI: 10.59316/.vi6.28
5. Eliseeva, T., & Yampolsky, A. (2019). Garlic (Latin: Allium sativum). *Journal of Healthy Eating and Dietetics*, 1 (7), 11-22. DOI: 10.59316/.vi7.35
6. Tarantul, A., & Eliseeva, T. (2020). Onion (lat. Állium cépa). *Journal of Healthy Eating and Dietetics*, (11), 25-36. DOI: 10.59316/.vi11.63
7. Tarantul, A., & Eliseeva, T. (2021). Beans (lat. Phaséolus). *Journal of Healthy Eating and Dietetics*, (15), 14-28. DOI: 10.59316/.vi15.95
8. Eliseeva, T., & Yampolsky, A. (2019). Corn (lat. Zéa máys). *Journal of Healthy Eating and Dietetics*, 3 (9), 2-13. DOI: 10.59316/.vi9.46
9. Eliseeva, T., & Tkacheva, N. (2017). Dandelion (lat. Taraxacum). *Journal of Healthy Eating and Dietetics*, 1 (1), 12-22. DOI: 10.59316/.vi1.2
10. Eliseeva, T., & Shelestun, A. (2019). Carbohydrates - description, benefits, effect on the body and the best sources. *Journal of Healthy Eating and Dietetics*, 1(7). DOI: 10.59316/j.edpl.2018.7.8
11. Tkacheva, N., & Eliseeva, T. (2019). Dietary supplements - description, benefits, effects on the body and the best sources. *Journal of Healthy Eating and Dietetics*, (8). DOI: 10.59316/j.edpl.2019.8.13
12. Shelestun, A., & Eliseeva, T. (2019). Fiber - description, benefits, effect on the body and the best sources. *Journal of Healthy Eating and Dietetics*, (7). DOI: 10.59316/j.edpl.2018.7.11
13. Lazareva, V., & Eliseeva, T. (2021). Nutrition for constipation. *Journal of Healthy Eating and Dietetics*, (16). DOI: 10.59316/j.edpl.2021.16.16
14. Lazareva, V., & Eliseeva, T. (2021). Dysbacteriosis - signs and symptoms, useful and dangerous products, folk remedies. *Journal of Healthy Eating and Dietetics*, (16). DOI: 10.59316/j.edpl.2021.16.28
15. Lazareva, V., & Eliseeva, T. (2021). Dermatitis - signs and symptoms, useful and dangerous products, folk remedies. *Journal of Healthy Eating and Dietetics*, (16). DOI: 10.59316/j.edpl.2021.16.37
16. Lazareva, V., & Eliseeva, T. (2021). Arthritis - signs and symptoms, useful and dangerous foods, folk remedies. *Journal of Healthy Eating and Dietetics*, (15). DOI: 10.59316/j.edpl.2021.15.45

17. Lazareva, V., & Eliseeva, T. (2022). Staphylococcus - signs and symptoms, useful and dangerous products, folk remedies. *Journal of Healthy Eating and Dietetics*, (19). DOI: 10.59316/j.edpl.2022.19.40
18. Eliseeva, T., & Tkacheva, N. (2020). Nutrition for joint health - healthy and dangerous foods, recommendations. *Journal of Healthy Eating and Dietetics*, (12). DOI: 10.59316/j.edpl.2020.12.21
19. Tkacheva, N., & Eliseeva, T. (2021). Food for the skin - 12 products for its beauty and health. *Journal of Healthy Eating and Dietetics*, 3 (17), 44-48. DOI: 10.59316/.vi17.121
20. Lazareva, V., & Eliseeva, T. (2022). Colitis - signs and symptoms, useful and dangerous foods, folk remedies. *Journal of Healthy Eating and Dietetics*, (20). DOI: 10.59316/j.edpl.2022.20.32
21. Mironenko, A., & Eliseeva, T. (2020). Calcium (Ca, calcium) - description, effect on the body, best sources. *Journal of Healthy Eating and Dietetics*, (12), 83-92. DOI: 10.59316/.vi12.77
22. Tkacheva, N., & Eliseeva, T. (2020). Foods to lower cholesterol. *Journal of Healthy Eating and Dietetics*, (11). DOI: 10.59316/j.edpl.2020.11.15
23. Mironenko, A., & Eliseeva, T. (2020). Magnesium (Mg, Magnesium) - description, effect on the body, best sources. *Journal of Healthy Eating and Dietetics*, (14), 60-71. DOI: 10.59316/.vi14.91
24. Tkacheva, N., & Eliseeva, T. (2022). Zinc (Zn) – value for the body and health + 30 best sources. *Journal of Healthy Eating and Dietetics*, 1 (19), 5-15. DOI: 10.59316/.vi19.152
25. 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. DOI: 10.59316/.vi18.148
26. Lazareva, V. (2021). Acne - signs and symptoms, useful and dangerous products, folk remedies. *Journal of Healthy Eating and Dietetics*, (15). DOI: 10.59316/j.edpl.2021.15.40
27. Lazareva, V., & Eliseeva, T. (2021). Nutrition for allergies. *Journal of Healthy Eating and Dietetics*, (16). DOI: 10.59316/j.edpl.2021.16.11

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Received 06.03.2019

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