



Food to increase white blood cells

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Abstract. The article considers the optimal level of leukocytes in the blood and their impact on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. Food products are indicated to increase the level of leukocytes, the scientific basis of nutrition for its normalization is considered.

Keywords: white blood cells, white blood cell count, healthy foods, recommendations

White nucleated cells, leukocytes, are an integral part of the immune system. When their level is greatly reduced, the body becomes more susceptible to infections, inflammation, and oncology. If the indicator drops below 4 thousand / μl , you need to quickly increase the ratio - in the case of protective blood cells, time is of paramount importance. The sooner you work on a solution to the problem, the less damage to health will be.

What do white blood cells do - types and properties

Leukocytes make up about 1% of the blood and are divided into several subgroups. The most numerous subspecies are granulocytes. They are also divided into five types, and are displayed in the leukocyte formula of a blood test:

- **lymphocytes** (T-lymphocytes, B-lymphocytes, NK cells) - are involved in the production of antibodies;
- **eosinophils** - help with allergies, attack and destroy parasites, cancer cells;
- **basophils** - produce histamine during an allergic reaction;
- **neutrophils** - fight infection by killing and digesting bacteria, fungi;
- **monocytes** - help destroy bacteria.

Most of these cells are continuously produced in the bone marrow, and their life cycle is only 1–3 days. They move with the bloodstream and are constantly at war with infections, bacteria and any other foreign agents.

Low white blood cell count: causes, symptoms, ways to increase

A slight decrease in white blood cells can be the result of fatigue and stress. Usually the body solves this problem on its own after rest, diet changes. Leukopenia is also provoked by:

- viral infections;
- sarcoidosis;
- severe infectious diseases - tuberculosis, AIDS;
- autoimmune diseases - lupus, rheumatoid arthritis, etc.;
- congenital disorders - neutropenia, myelocathexis;
- oncology;
- some drugs - antibiotics, interferons, etc.;
- malnutrition and deficiency of B12, folic acid, copper, zinc;
- alcohol abuse.

Not every leukopenia is associated with these diseases and it is not always accompanied by fever, chills, sweating. One of the best ways to protect against it and get your score back on track is to eat a variety of whole foods and lead a healthy lifestyle. Proper nutrition in the right portions protects against many diseases!

Top 10 Foods to Boost White Blood Cells Naturally:

1. Yogurt

Probiotics in yogurt improve bowel function, stimulate the production of new immune cells. The same activity is shown by other products subject to bacterial fermentation - kombucha, kimchi, sauerkraut. [1,2]

2. Garlic

Garlic has immunomodulatory and anti-inflammatory properties due to the presence of alliin in the composition, which, when mechanically damaged - chewing, cutting - turns into allicin. The component stimulates the production of lymphocytes, eosinophils, macrophages. [3]

3. Spinach

A rich source of vitamins and minerals exhibits an antioxidant effect, helps to increase the number of leukocytes. Nutritionists recommend adding a small portion of cooked or raw spinach to your daily diet, unless there are contraindications. [four]

4. Broccoli

When chewing, digesting broccoli, a substance 3,3-diindolylmethane (DIM) is formed, which is capable of doubling the number of leukocytes. According to studies, DIM is well tolerated at a dose of 2 mg/kg per day. ½ cup of cruciferous contains about a tenth of this amount. [5]

5. Kiwi

Exotic fruit is a rich source of potassium and vitamins C, E. They play an important role in increasing the number of white blood cells, so it is advisable to eat 1-2 kiwis a day, and also add oranges, strawberries, lemons, grapefruits to the diet. [6]

6. Red bell pepper

Sweet pepper is rich in vitamin C, increases the production of antibodies and white blood cells to fight various infections. Best eaten raw in salads or with hummus. ^[7]

7. Mackerel

Fatty fish like mackerel, sardines, and salmon are the best sources of omega-3s. Polyunsaturated fatty acids increase the number of leukocytes and are excellent immunomodulators. To increase the intake of omega-3, you can also add walnuts, avocados to your daily diet. ^[eight]

8. Sunflower seeds

Phosphorus, magnesium, vitamin E and B6 - these nutrients and antioxidants in seeds increase the body's defense against harmful bacteria. They can be eaten on their own, and added to stewed vegetables, salads.

9. Green tea

Green tea is valued not only for antioxidants, flavonoids, catechins. It contains epigallocatechin gallate (EGCG), which is responsible for most of its health benefits. EGCG kills influenza viruses and is a powerful immune booster.

10. Ginger

Many test-tube and animal studies show that ginger enhances the immune response and has anti-tumor effects. The substance gingerol contained in the rhizomes is responsible for its burning taste and reduces inflammation. ^[9]

11. Asparagus

Asparagus is rich in vitamins A, C, E and amino acids. The latter saturate the bone marrow and white blood cells with nutrients for their production and proper functioning. The amino acid asparagine is especially beneficial for blood vessels and white blood cell production.

12. Oysters

100 g of oysters contain 554.9% of the daily requirement of zinc. The micronutrient helps the body produce more new white blood cells and increases the activity of existing ones. Other types of shellfish contain less zinc than oysters, but are also good sources. You can also get a trace element from red meat, legumes. ^[ten]

13. Brazil nuts

A medium Brazil nut contains 175% of the daily value of selenium needed for immunity. Its concentration in exotic fruits is so high that if consumed in excess, there is a risk of overdose. ^[eleven]

14. Wheat germ oil

In 1 st. l. wheat germ oil contains 135% of the daily requirement of vitamin E, without which the synthesis of the main immune agents is impossible. Wheat sprouts themselves, unlike carbohydrate grains, contain a lot of microelements and dietary fiber. ^[12]

15. Beets

A cheap and easily available vegetable contains the most essential substances for protection against oxidative stress and the synthesis of white blood cells - vitamin C, folic acid, manganese, iron, phytochemical compounds betacyanins. Beetroot is most useful in its raw form, but for diseases of the gastrointestinal tract, it is better to boil or bake it.

Other ways to prevent and treat leukopenia

If proper nutrition does not help raise the level of leukocytes in the blood, you can supplement the diet with food supplements with zinc, selenium, folic acid, omega-3, probiotics and vitamins C, E. To achieve results faster and avoid complications, nutritionists recommend taking additional measures:

- lose weight with excess weight, which will significantly improve immune protection;
- daily consume a norm of drinking water for the rapid removal of toxins;
- reduce the consumption of sugar and unhealthy fats, which will simplify the work of all systems and organs;
- get enough sleep, learn to cope with stress.

If you're looking for a way to prevent colds, flu, and other infections, change your diet first. Plan your diet to include 15 foods from our list that create a barrier to a variety of pathogens. A well-balanced diet rich in natural sources of vitamins and minerals will minimize potential health problems.

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Received 13.09.2021

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