

Lysine - description, benefits, effects on the body and the best sources

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Abstract. Lysine is one of the three most important amino acids, which our body can only obtain from food. Lysine is necessary for growth, tissue regeneration, production of hormones, antibodies, and enzymes. Lysine is used to build muscle proteins and collagen, a component of connective tissue. It is responsible for the strength of blood vessels and the elasticity of ligaments. Responsible for the absorption of calcium. Prevents osteoporosis, atherosclerosis, strokes and heart attacks. Regulates the activity of the mammary glands.

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

Lysine-rich foods:

- Milk
- Cottage cheese [1]
- Hard cheese (parmesan)
- Brynza
- Yogurt [2]
- Red meat
- Mutton
- Chicken
- Turkey
- Cod and sardine
- Chicken egg [3]
- Quail egg
- Soybeans
- Beans [4]
- Peas [5]

It should be noted that the legumes listed above, unlike wheat and corn [6], contain a large amount of lysine. Cereals lose it during processing, as well as when combining proteins with sugar, which leads to deactivation of lysine.

Daily requirement for lysine

The daily requirement for lysine consumption for adults is 23 mg/kg body weight, for infants - 170 mg/kg.

The need for lysine increases with:

- Increased physical activity [7]. In long-distance runners, a lack of lysine can lead to tendon inflammation as well as muscle wasting.

- Age-related changes (especially in the male body). Older men need more lysine than younger guys.
- Vegetarianism [8]. Due to the fact that during vegetarianism, lysine is not supplied in sufficient quantities.
- Low-fat diets [9].

The need for lysine is reduced:

The body always needs lysine. According to the latest scientific data, it was found that lysine does not accumulate in the body, but is excreted along with metabolic products. And while this amino acid is present in the body, it plays the role of an energy component.

Lysine digestibility

There are two varieties of lysine in nature: *D-lysine* and *L-lysine*. Our body exclusively absorbs L-lysine. At the same time, for more complete use by the body, its use should be combined with products containing vitamins A [10], C [11], B1, as well as bioflavonoids [12] and iron [13].

The efficiency of lysine is possible only in the presence of the accompanying amino acid – arginine. The most favorable ratio of these amino acids is present in cheeses and other lactic acid products.

In the absence of such products, or the body does not accept them, such a combination can be achieved by consuming available products in combination with nuts, chocolate and gelatin. They contain the amino acid arginine.

Beneficial properties of lysine and its effect on the body

Lysine not only successfully fights against various viruses, including all types of herpes [14] and ARVI, but also has a number of other, no less useful properties. These include its antidepressant properties [15], the ability to reduce anxiety and irritability. In addition, while taking lysine, there is a disappearance of headaches of migraine origin [16]. At the same time, the use of lysine does not cause drowsiness, does not affect performance, and is not addictive.

Interaction with other essential elements

Like any compound, lysine tends to interact with substances in our body. At the same time, it interacts, as mentioned above, primarily with the amino acid arginine. He also participates in the formation of the community “Lysine – vitamins A, C, B1 – iron – bioflavonodes.” At the same time, an important component of this community is the consumption of complete protein [17].

Signs of excess lysine

If we talk about problems associated with excess lysine, then nothing is known about the existence of such. Lysine is not prone to cumulation (accumulation). It has no toxic effect on the body. On the contrary, excess lysine becomes a source of energy.

Signs of lysine deficiency

- increased fatigue;
- nausea;
- dizziness;
- lethargy;
- decreased appetite;
- nervousness;
- the appearance of a vascular network on the white membrane of the eye (symptom of “red eye”);
- excessive hair loss;
- menstrual dysfunction;
- decreased libido;
- problems with potency;
- frequent viral diseases;
- anemia [18].

Why does amino acid deficiency occur?

Due to constant stress, the body cannot cope with its consequences. And the result of nervous fatigue is the accelerated consumption of lysine, as a result of which the body is constantly on a starvation diet. This situation leads to the activation of various types of viruses.

Lysine – a component of beauty and health

Hair especially suffers from a lack of lysine. When a sufficient amount of amino acid enters the body, hair becomes stronger, healthier and more beautiful [19].

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