



Eating during intense physical activity

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Abstract. It's hard to believe, but intense physical activity is not a reason to give up good old fats and carbohydrates in favor of protein foods. On the contrary, this is a reason to seriously reconsider your diet, diversifying it as much as possible. And add healthy and proper foods to it. Those that will not only give you strength and energy, but will also allow you to do more and, as a result, reach athletic heights faster.

Key words: food during physical activity, recommendations, benefits, harm, beneficial properties, contraindications

How to plan a diet during heavy physical activity

Proper nutrition allows an athlete to gain muscle mass and burn fat while remaining physically healthy and resilient. That is why his diet must be balanced and contain proteins, carbohydrates and fats in the right quantities. After all, each of these macroelements performs a specific function, namely:

- Proteins - they form the basis of all diets, including diets for athletes. Simply because they are a building element for our body and, like water, are present in almost all its tissues, including bone, muscle and connective tissue, and even in the blood. However, their share in the daily diet should be no more than 15-20%, otherwise muscle hypertrophy (an increase in muscle mass due to an increase in the area and size of muscle fibers, and not their length) cannot be avoided. The best sources of proteins are chicken breast, turkey, tuna, salmon, egg whites, legumes, and low-calorie cottage cheese. [1]
- Carbohydrates are substances from which the body draws energy. It is thanks to them that endurance and endurance appear. This happens as follows: as a result of complex biochemical reactions, carbohydrates are converted into glycogen. This is a kind of energy reserve that accumulates in the muscles in order to be released during regular training and intense muscular work, allowing a person to exercise more intensely. Interestingly, the more he trains, the more glycogen his muscles store. In an athlete's diet, carbohydrates should make up 55-60% of the total food mass. You can get them by eating products of plant origin - grains or cereals. [2]

- Fats provide the body with additional energy and prevent the development of cardiovascular diseases. They are found mainly in vegetable oils - olive or sunflower, as well as fish oil, nuts and seeds. [3]

Vitamins and microelements

In addition to macroelements, athletes need vitamins and microelements. Moreover, according to Academy of Nutrition and Dietetics spokesperson Kelly L. Pritchett, “during moderate to intense exercise, the loss of certain minerals increases, primarily through sweat.” Therefore, the body needs to accumulate them all the time. We are talking about the following substances:

- B vitamins. The first sign of their deficiency is a lack of strength for the last run. This is explained by the fact that it is with their help that our body converts protein and sugar into energy and synthesizes red blood cells. The data is confirmed by research results. These substances are found in tuna, legumes and nuts. [4]
- Calcium – together with vitamin D, potassium and protein, this trace element is responsible for bone density, as well as skeletal strength. It is found in dairy products, dark green leafy vegetables and legumes. [5]
- Vitamin C - not many people know that it can not only improve immunity, but also prevent shortness of breath during and after training. This is confirmed by the results of studies conducted at the University of Helsinki in Finland. It is found in citrus fruits, rose hips, sweet peppers, strawberries and cabbage. [6]
- Vitamin D – improves mood and adds strength. Moreover, these are not just words, but the results of research conducted at the British University of Newcastle under the leadership of Akash Sinya. The mechanism of its effect is simple: vitamin D helps to activate the work of mitochondria, which are found in muscle fibers. As a result, muscle tone increases and the person feels more active. You can replenish your reserves of this vitamin by basking in the sun or eating dairy products, fish and egg yolk. [7]
- Vitamin E is a powerful antioxidant that improves immunity and protects against many diseases. Contained in seeds, nuts and vegetable oils. [8]
- Iron - without it, muscles will not be able to work at full strength. Simply because they will not receive enough oxygen, which is carried by red blood cells that are synthesized with its help. In addition, iron deficiency leads to anemia and, as a result, increased fatigue and tiredness. This trace element is found in beef, spinach, eggs, cabbage and green apples. [9]
- Magnesium – it increases bone density, thereby protecting the athlete from fractures during intense training. In addition, according to Kelly Pritchett, “magnesium activates over 300 enzymes involved in energy metabolism.” They are rich in dark green leafy vegetables, fish, and nuts.
- Potassium is an essential trace element that ensures the functioning of the nervous and muscular systems and is found in bananas. That is why the latter is preferred by athletes after long-distance races. Just to relieve muscle pain and calf muscle cramps. [10]

Top 17 products for heavy physical activity

In order not to overload the body and to always be in great shape, you need to eat small meals, but often. Ideally, there should be 5-6 meals a day and a maximum of healthy foods and drinks in the diet. There are only 17 of them:

1. Water – you need to drink it not only before or after, but also during training. Simply because it improves performance and prevents injuries. The amount of water you drink depends on their duration and intensity. In some cases, drinking sports drinks can be beneficial. [eleven]

2. Eggs are a source of protein and vitamin D. [12]
3. Orange juice [13] - it contains not only vitamin C, but also potassium - one of the most important electrolytes responsible for water balance and helps replenish the lack of fluid in the body after workouts.
4. Kefir is a source of beneficial bacteria and proteins that are necessary for muscle growth. Regular consumption of kefir helps cleanse the body and get rid of excess weight. You can improve its taste with oatmeal or fruit.
5. Bananas are a source of carbohydrates that help restore glycogen levels and potassium. [14]
6. Salmon is a source of protein and omega-3 fatty acids [15], which have anti-inflammatory properties. The product not only increases muscle mass, but also improves training performance.
7. Nuts and dried fruits are an ideal snack with carbohydrates, proteins and healthy fats, as well as vitamins and microelements. Allows you to quickly restore strength and helps build muscle mass.
8. Blueberries are a source of antioxidants [16] that can triple the speed of recovery after intense training.
9. Pineapple is a source of bromelain, a substance that has anti-inflammatory properties and promotes the speedy treatment of dislocations, bruises and swelling. In addition, it contains vitamin C, which is necessary for rapid tissue repair. [17]
10. Kiwi is a source of vitamin C, antioxidants and potassium, which help effectively combat muscle soreness after exercise. [18,19]
11. Oatmeal is a storehouse of nutrients and complex carbohydrates that ensure optimal blood sugar levels and provide energy for new achievements. [20]
12. Coffee - It may be hard to believe, but caffeine can increase endurance and reduce muscle soreness during and after intense exercise, according to a 2009 study at the University of Illinois at Urbana-Champaign. The main thing is not to abuse it.
13. Oysters – they enrich the body with zinc [21] and iron and, as a result, provide the energy necessary for intense training.
14. Ginger – it contains unique substances that have anti-inflammatory properties and effectively relieve muscle pain. [22]
15. Tomato juice - athletes call it an analogue of sports drinks due to its sodium and potassium content, which replenishes fluid losses. [23,24]
16. Dark chocolate with a cocoa content of at least 70% - in moderate quantities it tones and effectively relieves muscle pain.
17. Honey is a unique cocktail of vitamins and microelements. [25]

What is better to avoid during heavy physical activity?

- Avoid fast food and foods high in simple carbohydrates, as they increase blood sugar levels.
- Excessively fatty and salty foods increase the risk of developing cardiovascular diseases, stimulate appetite and lead to overeating.
- From flour and sweets - they contain simple carbohydrates and increase blood sugar levels.
- From alcohol and smoking.

According to experts, the secret to the success of any training is not only in the quality and quantity of food eaten, but also in the timing of meals. Therefore, eat cereals and fruit salads before training, and protein foods after. And drink plenty of fluids all the time. And you will be happy!

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