



## food for inflammation

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**Abstract.** The article deals with inflammatory processes and their impact on the human body. A systematic review of modern specialized literature and relevant scientific data was carried out. Foods that will help reduce inflammation are indicated, the scientific basis of nutrition against inflammation is considered.

**Keywords:** inflammation, diagnostics, healthy foods, dangerous foods

If you want to help your body fight inflammation, look in the fridge first - most health problems are caused by unhealthy foods. While medications are important during treatment, an anti-inflammatory diet is often just as effective, as scientific evidence supports. Find out how food affects inflammation in the body, what disease provocateurs are in your diet, and what you need to put on your plate to be healthy.

## What happens in the body during chronic inflammation?

Inflammation is the body's defense response to infection, irritation, or injury. If a short-term inflammatory process protects us, then a chronic one is associated with an increased risk of developing diabetes, asthma, heart attack, autoimmune disorders, and oncology. Dangerous damage is not felt for a long time, and the fight against pain with anti-inflammatory drugs often leads to side effects and complications. Proper nutrition is what really prevents diseases and prolongs life.

Early symptoms of chronic inflammation are fatigue, dizziness, and nausea. They can be caused by obesity, stress, diabetes, bile stasis, liver disease and go unnoticed for years.<sup>[1, 2, 3, 4]</sup> If measures are not taken in time, the risk of developing a heart attack, cancer, dementia and other dangerous conditions increases significantly.

## Diagnosis of inflammation

To combat negative processes, the body increases the production of leukocytes, immune cells and cytokines. Therefore, the easiest way to measure inflammation is to take a blood test for several markers:

- **C-reactive highly sensitive protein, hs-CRP** - indicates problems in the walls of blood vessels, the development of atherosclerosis;
- **homocysteine** - leads to the formation of blood clots, makes the walls of blood vessels loose, promotes the deposition of cholesterol and atherosclerotic plaques;
- **tumor necrosis factor-alpha, TNF-alpha** - increases in severe infectious, allergic, autoimmune, oncological diseases;
- **interleukin-6, IL-6** - indicates the severity of acute pancreatitis, kidney damage, autoimmune diseases, oncology, etc.;
- **glycated hemoglobin, HbA1C** - blood sugar (glucose) levels help detect diabetes.

These markers increase harmful foods: sugar, high fructose syrups, trans fats, refined carbohydrates, alcohol, sausages. <sup>[5, 6, 7, 8, 9]</sup> The main non-dietary factor contributing to their increase is a sedentary lifestyle, including frequent sitting. <sup>[ten]</sup>

## **How to Reduce Inflammation Without Medications - An Effective Anti-Inflammatory Diet**

Each meal should provide the body with proteins, fats, carbohydrates. You also need to satisfy his needs for water - 30 ml per 1 kg of body weight per day, - fiber, vitamins. It is desirable to increase the amount of foods with antioxidants that neutralize free radicals and prevent the development of oncology.

The Mediterranean diet is considered the most anti-inflammatory - it reduces CRP and IL-6 markers. <sup>[11]</sup> It focuses on whole grains, vegetables, fruits, fish, and limits the intake of unhealthy fats, carbohydrates, and refined sugars. The DASH diet, vegetarian and low-carbohydrate diets also reduce inflammation. <sup>[12, 13]</sup>

## **Top 10 Anti-Inflammation Foods with Proven Benefits**

### **1. Bone broth**

Boiling lamb, beef, pork bones in water with a little vinegar helps to release vitamins, fatty acids, zinc, manganese and amino acids from the bone marrow. They are necessary for the healing of the intestinal mucosa, in which up to 80% of immunity is concentrated. <sup>[14, 15]</sup>

### **2. Green vegetables and leafy greens**

Spinach, arugula, beet leaves, peppers, celery and all types of cabbage - Brussels sprouts, cauliflower, white cabbage, broccoli - are useful raw if there are no gastrointestinal pathologies. For many stomach problems, only Chinese cabbage is suitable, and cooked vegetables are better tolerated than raw.

### **3. Berries**

Blueberries, raspberries, goji, strawberries, cranberries, grapes are the most useful berry crops. <sup>[16, 17, 18, 19]</sup> They contain less fructose and more beneficial compounds than fruits.

### **4. Fermented foods**

Kombucha, apple cider vinegar, fermented vegetables contain valuable bacteria and act as probiotics. Sauerkraut, cucumbers, tomatoes are excluded for acute diseases of the gastrointestinal tract, but after normalization of the condition, they can be gradually added to side dishes. <sup>[twenty]</sup>

### **5. Fatty fruits**

Avocados and olives are valued for their low glycemic index and high concentration of omega-3s, vitamins, folic acid, and copper.

## 6. Healthy fats

Coconut, olive, linseed, ghee are the most valuable. Coconut is suitable for making desserts and frying because of its high smoke point.

## 7. Oily fish

Salmon, herring, mackerel are the richest in omega-3 and cleanse the walls of blood vessels from excess cholesterol.

## 8. Nuts

Almonds, pistachios, cashews, pecans, macadamia, walnuts and Brazil nuts are a storehouse of vitamins A, B, C, D, E. For maximum benefit, it is enough to eat 30 g of nuts per day.

## 9. Spices

Ginger, garlic, turmeric, cardamom, rosemary, black pepper, cinnamon and many spices popular in India are great at fighting infections.

## 10. Green tea

The drink is rich in polyphenols, catechins, antioxidants. It suppresses inflammation, accelerates metabolism and weight loss. <sup>[21, 22]</sup>

## Other Ways to Fight Chronic Inflammation: Secrets to a Fast Recovery

Once you add anti-inflammatory foods to your menu, be sure to eliminate pro-inflammatory foods and break bad habits. Research shows that there are a few more simple rules to follow for recovery:

- **take supplements** (omega-3, curcumin, S-adenosylmethionine, zinc, frankincense, cat's claw) and vitamin-mineral supplements in the correct forms to strengthen immunity and eliminate toxins; <sup>[21]</sup>
- **exercise regularly**, because they reduce the risk of chronic diseases; <sup>[23]</sup>
- **goes to bed no later than 11 p.m.** and sleeps for at least 7-8 hours - violation of this regimen causes inflammation in all people, regardless of age and gender; <sup>[24]</sup>
- **walk** - daily exercise does not compensate for the lack of physical activity, so WHO recommends walking at least 7500 steps per day;
- **give up coffee and alcohol** - the benefits of them are exaggerated and people without pathologies get it;
- **focus on maintaining a healthy microbiome** rather than taking probiotics;
- **temporarily exclude milk** with A1 casein and gluten - they are safe for healthy people, but if there is already inflammation, they increase it and cause irritation of the intestinal walls;
- **try intermittent fasting**, if there are no contraindications (optimally 12-hour fasting from 19:00 to 7:00) - a simple method enhances fat burning, slows down aging and maintains normal microflora in the intestines; <sup>[25]</sup>
- **learn to cope with stress** with the help of yoga, meditation, jogging, because any diet is ineffective with a high level of cortisol; <sup>[26]</sup>
- meticulously choose products in stores and dishes in restaurants.

Before taking dietary supplements, it is important to take tests and consult with a nutritionist. Many natural extracts are as effective as drugs and reduce the need for prescription or over-the-counter drugs.

### **Three simple rules to quickly improve the quality of life**

Sometimes inflammation develops in response to triggers that are difficult to avoid - environmental pollution, injury. But you have more control over the situation than you think: an anti-inflammatory diet with sufficient physical activity and good sleep relieves many syndromes and depressions.

No need to wait months or years to see the result and feel better - choose food not for satiety, but for health!

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