



Food to protect against cancer and fight cancer

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Abstract. The article considers the role of nutrition in oncological diseases. A systematic review of modern specialized literature and relevant scientific data was carried out. The food products for protection against cancer are indicated, the scientific basis of nutrition for the fight against oncology is considered.

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Scientists and doctors cannot yet claim that any product prevents cancer or stops its development. But certain foods help to avoid malignant tumors and increase the chances of recovery. Let's take a closer look at the scientific data that testifies to the connection of food with cancer - foods and drinks that have anti-cancer properties and increase the risk of developing cancer cells. Rate the best and worst menu for your health!

The role of nutrition in the development of malignant tumors

Genetics and family history play an important role in the development of cancer, but 80-90% of them are associated with external factors. ^[1] One of the most important aspects of lifestyle is nutrition. A proper diet filled with colorful fruits and vegetables is the key to fighting cancer, heart disease, and diabetes.

Fruits and vegetables are low in calories, high in fiber, vitamins, and minerals—the more color on your plate, the more healthy. The antioxidants they contain protect against harmful compounds in food and the environment, and prevent cell damage and mutation.

Researchers advise focusing on eating dark green, red, orange vegetables and keeping a balance - the plate should be at least 2/3 plant foods and no more than 1/3 animal protein. According to the American Institute of Cancer Research, this diet helps fight cancer.

Foods that increase the risk of getting cancer

Any oncologist will recommend walking past the counter with processed meats - sausages, sausages, ham, bacon, corned beef, beef jerky, etc. Meat processing methods contribute to the formation of carcinogens. ^[2] The carcinogen acrylamide is also produced during frying of potatoes and other starchy vegetables. Acrylamide is dangerous because it damages DNA and causes cell death. ^[3]

No less dangerous is meat cooked at high temperatures. Grilling, barbecuing, frying in a pan - all this leads to the formation of carcinogenic PAHs and heterocyclic amines HCA. Stewing, baking in a slow cooker and oven at low temperatures is considered safe.

Dairy products - milk, cheese, yogurt - increase the IGF-1 protein associated with a high risk of prostate cancer. Research also links alcohol to tumors in the mouth, throat, larynx, esophagus, liver, breast, colon, and rectum. ^[4] Sugar and refined carbohydrates are even more dangerous. They cause inflammation, oxidative stress. In anti-rating:

- White rice,
- pasta,
- White bread,
- bakery products,
- all drinks, sauces, dishes with added sugar;
- sweet cereals. ^[5]

In addition, fast carbohydrates displace healthy foods that protect against oncology from the diet, and provoke obesity. The best junk food alternatives are fruits, vegetables, whole grains, fish, and lean meats. Although healthy foods alone cannot prevent disease, the right combination of them can make a difference.

Top 10 Foods Against Cancer

1. Broccoli

Asparagus, like all cruciferous vegetables, contains glucosinolates, which produce protective enzymes. Broccoli is the best source of the most effective enzyme sulforaphane. The compound promotes detoxification, attacks the H. Pylori bacteria, and reduces the size and number of cancer cells in the breast by up to 75%. For maximum benefit, steam kale, mix with garlic, olive oil, and consume 3-5 servings per week. ^[6]

2. Garlic

The bulbous plant also fights H. pylori and other bacteria associated with stomach cancer - it protects the stomach, pancreas, esophagus, and large intestine. WHO advises eating a clove of garlic daily. To get the best effect from it is simple - you need to peel, cut and leave for 15-20 minutes before cooking or eating. This will activate the enzymes and release the sulfur compounds that have the most protective effect. ^[7]

3. Carrot

Beta-carotene in carrots protects cell membranes from damage by toxins, slows down the growth of cancer cells in the cervix, chest, pharynx, larynx, esophagus, and stomach. The remaining components help fight HPV (human papillomavirus). Boiled carrots contain more antioxidants than raw ones. But it should be boiled, baked, or steamed whole, and sliced before serving to reduce nutrient loss. ^[eight]

4. Spinach

The king of leafy greens is effective due to folic acid, lutein, zeaxanthin, carotenoids. Ingredients neutralize free radicals, and folate helps the body repair DNA. Useful as raw spinach in salads, and boiled in soups, steamed, fried. ^[9]

5. Tomatoes

The red pigment associated with lycopene makes tomatoes a potential weapon against prostate cancer. The substance is also found in watermelon, pink grapefruit, red bell pepper. A powerful antioxidant boosts immunity, stops the growth of cancer cells in the lungs, breast, uterus. Raw and processed tomatoes are considered healthy. ^[ten]

6. Beans

The fiber and potent phytochemicals in beans protect against colorectal cancer and reduce the risk of tumor recurrence in a study of 1,905 people. Animal studies have shown that this type of legume blocks the development of cancer cells in the colon by up to 75%. ^[eleven]

7. Strawberry

Strawberries and raspberries contain vitamin C, ellagic acid. The latter activates enzymes that destroy carcinogens and slow down the growth of tumors in the urinary, esophagus, and chest. The flavonoids in the berries inhibit an enzyme that damages DNA and causes lung disease. Blackberries, blueberries, cranberries are also rich in flavonoids and deserve a place in your diet. ^[12]

8. Turmeric

The active ingredient curcumin has anti-inflammatory, antioxidant, anti-cancer effects. Testing on 44 patients with pre-cancer of the large intestine for a month showed that taking 4 grams of curcumin daily reduced the number of lesions by 40%. Researchers recommend consuming at least 1-3 teaspoons of ground turmeric per day, paired with black pepper or fats for better absorption of curcumin. ^[13]

9. Walnuts

All nuts have anti-cancer properties, but walnuts remain the most studied. They contain pedunculagin, which is converted into urolithins in the body. The compounds bind to estrogen receptors and prevent the growth of breast tumors. ^[fifteen]

10. Cinnamon

Cinnamon is well known for its health benefits, including the ability to lower blood sugar and reduce inflammation. Seasoning, extract and essential oil inhibit the growth of tumor cells, reduce their spread and cause death. ^[fourteen]

How else to protect yourself from cancer - other ways to prevent

In fact, the anti-cancer diet is not much different from the healthy diet recommended for all people. Some studies also support the benefits of grapes, anchovies and oily fish (salmon, mackerel, herring), whole grains, olive oil, citrus fruits, flaxseed. The influence of many products requires further study, because testing does not take into account other factors that play a large role in oncological diseases:

- excess weight - obesity and extra pounds contribute to the formation of cancer cells;

- insufficient water intake - slows down the elimination of toxins, contributes to the development of bladder cancer;
- smoking is the cause of 1/3 of all deaths from cancer; ^[one]
- the presence in the diet of improperly stored stocks of peanuts and other grains that release the highly toxic poison aflatoxin;
- long exposure to the sun - UV radiation causes premature skin aging, melanoma, basal cell and squamous cell carcinoma.

You can prevent many forms of cancer by quitting smoking, becoming more active, using sunscreen regularly, taking vitamins, and eating right. The American Institute for Cancer Research emphasizes that getting disease-fighting nutrients from foods is more effective than getting them from supplements.

Literature

1. The Development and Causes of Cancer, <https://www.ncbi.nlm.nih.gov/books/NBK9963/>
2. Colorectal Cancer and Nutrition, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6357054/>
3. Dietary Acrylamide and the Risks of Developing Cancer: Facts to Ponder, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5835509/>
4. Alcohol and Cancer: Mechanisms and Therapies, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5618242/>
5. Total and added sugar intakes, sugar types, and cancer risk: results from the prospective NutriNet-Santé cohort, <https://pubmed.ncbi.nlm.nih.gov/32936868/>
6. The role of Sulforaphane in cancer chemoprevention and health benefits: a mini-review, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5842175/>
7. Allicin purified from fresh garlic cloves induces apoptosis in colon cancer cells via Nrf2, <https://pubmed.ncbi.nlm.nih.gov/20924970/>
8. Effect of Carrot Intake in the Prevention of Gastric Cancer: A Meta-Analysis, <https://pubmed.ncbi.nlm.nih.gov/26819805/>
9. Anti-cancer effect of spinach glycolipids as angiogenesis inhibitors based on the selective inhibition of DNA polymerase activity, <https://pubmed.ncbi.nlm.nih.gov/21034405/>
10. Lycopene/tomato consumption and the risk of prostate cancer: a systematic review and meta-analysis of prospective studies, <https://pubmed.ncbi.nlm.nih.gov/23883692/>
11. High Dry Bean Intake and Reduced Risk of Advanced Colorectal Adenoma Recurrence among Participants in the Polyp Prevention Trial, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1713264/>
12. Chemopreventive Effects of Strawberry and Black Raspberry on Colorectal Cancer in Inflammatory Bowel Disease, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6627270/>
13. Phase IIa clinical trial of curcumin for the prevention of colorectal neoplasia, <https://pubmed.ncbi.nlm.nih.gov/21372035/>
14. Walnuts have potential for cancer prevention and treatment in mice, <https://pubmed.ncbi.nlm.nih.gov/24500939/>
15. Cinnamon extract induces tumor cell death through inhibition of NFkappaB and AP1, <https://pubmed.ncbi.nlm.nih.gov/20653974/>

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