



## ONCOLOGICAL DISEASES: CAUSES, DIAGNOSIS AND PREVENTION

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### ABSTRACT

*Oncological diseases are characterized by uncontrolled cell proliferation and are among the most dangerous pathologies for human life. This article provides a comprehensive overview of the etiology, pathogenesis, clinical course, diagnosis and prevention of oncological diseases..*

**Relevance.** Oncological diseases are the second leading cause of death worldwide. Many of them are detected late due to the fact that they do not have clinical symptoms in the early stages. Therefore, early diagnosis and prevention of cancer are one of the main tasks of modern medicine.

A number of risk factors play an important role in the development of oncological diseases. Genetic predisposition, that is, the presence of hereditary mutations, increases the likelihood of developing cancer. In addition, smoking, alcohol abuse, radiation and ultraviolet radiation, chemical carcinogens, environmental pollution, and certain viral infections (for example, papilloma or hepatitis viruses) increase the risk of oncological diseases.

Chronic inflammatory processes and decreased immunity also create favorable conditions for tumor development. Malignant, that is, low-grade tumors are characterized by rapid growth, invasion of surrounding tissues and metastasis to distant organs. They spread through the blood and lymphatic vessels, damaging various systems of the body. Such tumors cause general weakness, weight loss, anemia, pain and signs of intoxication in the patient. In late cases, the disease poses a serious threat to life.

Benign, that is, benign tumors are characterized by limited and slow cell growth. They are usually surrounded by a capsule, do not invade surrounding tissues and do not metastasize. Benign tumors often develop unnoticed for a long time and do not seriously affect the general condition of the patient. Such tumors include lipoma, fibroma, adenoma, papilloma and uterine fibroids. However, benign tumors cannot be ignored. When they reach a large size, they can compress surrounding organs and cause functional disorders. In some cases, benign tumors that persist for a long time have a risk of becoming malignant and turning into a malignant tumor. Therefore, regular medical supervision is important in such cases.

The following factors contribute to the development of oncological diseases:

- genetic mutations
- ionizing radiation
- chemical carcinogens
- smoking
- viral infections
- These factors cause damage to cellular DNA.

Cancer cells are different from normal cells:

- divides indefinitely;
- does not undergo apoptosis;
- invades surrounding tissues;
- metastasizes.

The process of metastasis occurs through the lymphatic and blood vessels.

Common symptoms of oncological diseases include:

weight loss;  
weakness;  
anemia;  
pain;

loss of appetite. Local symptoms depend on the location of the tumor.

Modern diagnostic methods in the detection of oncological diseases:

- laboratory tests
- instrumental examinations
- biopsy
- screening programs. Early detection increases the effectiveness of treatment.

**Prevention.** Prevention and early diagnosis play an important role in reducing the risk of oncological diseases. Adherence to a healthy lifestyle, rejection of harmful habits, protection from environmental factors and regular medical examinations are effective in preventing cancer. In particular, the introduction of screening programs allows detecting the disease at an early stage.

**Conclusion.** Oncological diseases are pathologies that pose a great threat to human health, and many factors are involved in their development. Although benign tumors are often not life-threatening, they also require constant monitoring. Oncological diseases are one of the most complex problems of modern medicine, and their consequences can be reduced through early diagnosis and comprehensive treatment. Medical students need to have in-depth knowledge in this area.

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