# THE MOST COMMON DANGEROUS TUMOR: CAUSES, CONSEQUENCES AND PREVENTION

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**Annotatsiya:** Bugungi kunda dunyo bo'ylab millionlab ayollar ginekologik o'smalardan aziyat chekishmoqda. Ular orasida inson papilloma virusi orqali paydo bo'ladigan o'sma – bachadon bo'yni saratoni (cervical cancer) eng keng tarqalgani va xavflisi hisoblanadi. 2024-yil ma'lumotlari bo'yicha bachadon bo'yni saratoni bilan kasallangan ayollar 660 000 nafarni tashkil etgan ulardan 350 000 nafari vafot etgan.

**Kalit so'zlar**: inson papilloma virusi, bachadon bo'yni saratoni, vaksina, skrining

**Аннотация:** В настоящее время миллионы женщин по всему миру страдают от гинекологических опухолей. Среди них наиболее распространённой и опасной считается рак шейки матки (cervical cancer), развивающийся в результате инфицирования вирусом папилломы человека (ВПЧ). По данным за 2024 год, число женщин, заболевших раком шейки матки, составило 660 000 человек, из которых 350 000 умерли.

**Ключевые слова:** вирус папилломы человека, рак шейки матки, вакцина, скрининг

**Annotation:** Currently, millions of women around the world suffer from gynecological tumors. Among them, cervical cancer—caused by the human papillomavirus (HPV)—is considered the most widespread and dangerous. According to 2024 data, 660,000 women were diagnosed with cervical cancer, and 350,000 of them died from the disease.

**Keywords:** human papillomavirus, cervical cancer, vaccine, screening

## Introduction

Cervical cancer is the fourth most common malignancy in women. The vast majority of these cancers are caused by infections with high-risk types of human papillomavirus (Cohen et al. 2019). Other factors that may increase the risk of cervical cancer include, for example, disruption of the cervicovaginal microbiota. However, in terms of the neurobiology of cancer, a significant factor is the neuroendocrine stress response, which may potentiate the development and progression of this cancer (Chen et al. 2021). Meanwhile, several stressors, such as bereavement (loss of a parent, partner, or child), have been identified that may increase the risk of cervical cancer associated with HPV infection by increasing susceptibility to HPV infection. In the case of cervical cancer, behavioral stress responses may also play a role, for example, related to promiscuous behavior (Kennedy et al. 2014).

Cervical cancer is a malignant tumor of the lower part of the uterus (the cervix) and ranks among the most prevalent and deadly gynecologic cancers globally. The primary cause of cervical cancer is persistent infection with oncogenic types of human papillomavirus (HPV). While it is a slow-progressing disease, the lack of early symptoms often results in late diagnosis and decreased survival rates. The most significant factor behind cervical cancer is infection with high-risk HPV types, particularly HPV-16 and HPV-18. Other contributing risk factors include:

• A weakened immune system (due to HIV, chronic illnesses, or immunosuppressive drugs)

• Early sexual activity and having multiple sexual partners

• Smoking, which accelerates genetic mutations in cervical tissue

• Lack of hygiene, poor health education, and inaccessibility to routine screenings

• Not receiving the HPV vaccine

| Cervical cancer ages | Abc out of 100 | Percentage out of 100.0 |
|---|---|---|
| 20-34 y.o | 29 | 29.0 |
| 35-44 y.o | 23 | 23.0 |
| 45-59 y.o | 48 | 48.0 |
| Total | 100 | 100.0 |

In its early stages, cervical cancer is asymptomatic. This makes regular screening critical. As the disease progresses, the following symptoms may appear:

- Abnormal vaginal bleeding (especially after intercourse)
- Pelvic pain or pain during sex
- Foul-smelling vaginal discharge
- Fatigue, weight loss, and in advanced cases, metastasis to other organs

Persistent infection by high-risk human papillomavirus (HPV) accounts for nearly 95% of cervical cancer cases. Specifically, HPV16 and 18 collectively contribute to about 70% of cases. A multistep carcinogenesis model outlines the progression from HPV infection to precancerous stages and eventual invasion leading to cancer. A minority of cases, primarily adenocarcinomas, develop through HPV-independent mechanisms, carrying significant implications. Preventive measures such as HPV vaccination, coupled with screening and treatment of precancerous lesions, offer effective strategies in preventing cervical cancer.

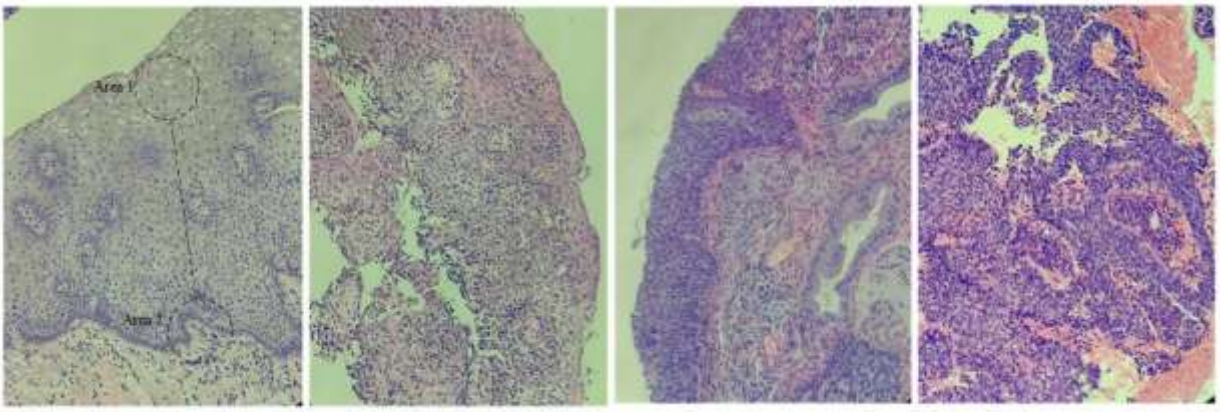

**Figure 1a.** Normal **Figure 1b.** LSIL **Figure 1c.** HSIL **Figure 1d.** Cancer

There are you can see classification of cervical cancer
*LSIL-low grade Squamos Intraepithelial lesion
*HSIL-hig grade Squamos Intraepithelial lesion

There are several types of standard treatment techniques for patients with cervical cancer, i.e. surgery, radiation therapy, chemotherapy, targeted therapy, and immunotherapy [16]. The definition of radiation therapy is the use of high-energy X-rays or other types of radiation to kill cancer cells or keep them from growing. Cancer treatment for cervical cancer and other cancers that use drugs to stop the growth of cancer cells by either stopping the cells from dividing or killing which is referred to as Chemotherapy. It can be taken by mouth or injected into a vein or muscle.

The use of drugs or other substances to identify and attack specific cancer cells without harming healthy cells is known as targeted therapy. A treatment that uses substances to stimulate or suppress the patient's immune system to fight cancer, infections, and other diseases is known as Immunotherapy. Immunotherapy is also known as biotherapy or biologic therapy. The drug for immunotherapy can be made in a laboratory or by the body and used to boost, direct, or restore the body's natural defenses against cancer. However, these treatments can be quite costly and present a considerable financial burden to women of color who maybe the primary caretaker of their families, thus contributing to higher mortality rate among these women.

**Stages of cervical cancer**

There are four stages of cervical cancer, which are Carcinoma *in situ* (Stage 0), Stage I, Stage II, Stage III, and Stage IV. Carcinoma *in situ* (Stage 0) abnormal cells are found in this stage in the inner lining of the cervix. Stage I cancer is only found in the cervix. Stage I is divided into stages IA and IB depending on the amount of cancer found. Stage IA consists of a minimal amount of cancer, which is located in the tissues of the cervix and can only be seen with a microscope. Stage II cancer spreads beyond the cervix but not into the pelvic wall or to the lower part of the vagina.

Stage III cancer spreads to the lower third of the vagina and/or onto the pelvic wall. Stage IV is divided into two stages IVA and IVB, which is based on where cancer has spread. During stage IVA, cancer has spread to nearby organs such as the bladder or rectum. Stage IVB is when cancer has spread to other parts of the body, such as the liver, lung, intestine, bone, or lymph nodes. Cervical cancer can recur after it has been treated and possibly come back in the cervix or other parts of the body.

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