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About Cervical Cancer

Get an overview of cervical cancer and the latest key statistics in the US.

Overview and Types

If you have been diagnosed with cervical cancer or are worried about it, you likely have a lot of questions. Learning some basics is a good place to start.

- [What Is Cervical Cancer?](#)

Research and Statistics

See the latest estimates for new cases of cervical cancer and deaths in the US and what research is currently being done.

- [Key Statistics for Cervical Cancer](#)
- [What's New in Cervical Cancer Research?](#)

What Is Cervical Cancer?

- [Abnormal changes in cells of the cervix](#)
- [Types of cervical cancer](#)

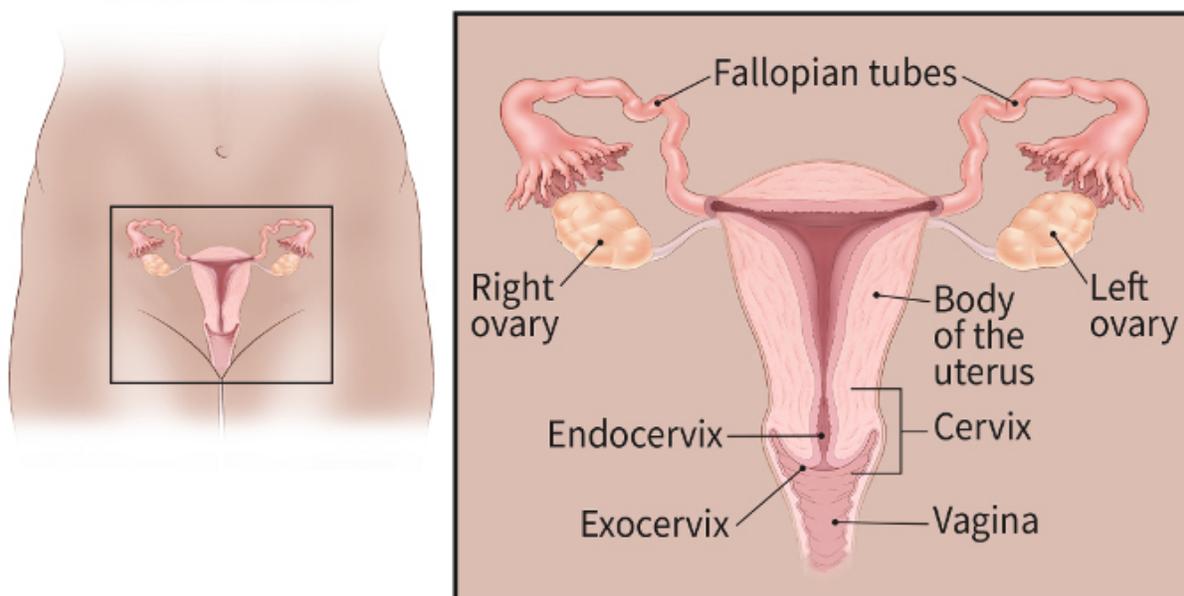
Cervical cancer starts in the cells lining the cervix -- the lower part of the uterus (womb). The cervix connects the body of the uterus (the upper part where a fetus grows) to the

vagina (birth canal). Cancer starts when cells in the body begin to grow out of control. To learn more about how cancers start and spread, see [What Is Cancer?](#)

The cervix is made of two parts and is covered with two different types of cells.

- The **endocervix** is the opening of the cervix that leads into the uterus. It is covered with **glandular** cells.
- The **exocervix (or ectocervix)** is the outer part of the cervix that can be seen by the doctor during a speculum exam. It is covered in **squamous** cells.

The place where these two cell types meet in the cervix is called the **transformation zone**. The exact location of the transformation zone changes as you get older and if you give birth. Most cervical cancers begin in the cells in the transformation zone.



Abnormal changes in cells of the cervix

Cells in the transformation zone do not suddenly change into cancer. Instead, the normal cells of the cervix first gradually develop abnormal changes that can turn into cancer. Doctors use several terms to describe these cell changes, including **cervical intraepithelial neoplasia (CIN)**, **squamous intraepithelial lesion (SIL)**, and **dysplasia**. You might hear these abnormal changes referred to as pre-cancers or pre-cancer changes.

When these abnormal changes in the cervix are found, they are graded on a scale of 1 to 3 based on how much of the cervical tissue looks abnormal.

- In CIN1 (also called mild dysplasia or low grade SIL), not much of the tissue looks abnormal. Most often, these cells will change back to normal cells.
- In CIN2 or CIN3 (also called moderate/severe dysplasia or high-grade SIL) more of the tissue looks abnormal. With these cell changes, there is higher risk that the cells can become cancer cells and will need to be watched closely or removed.

Although cervical cancers start from cells with abnormal changes, only some women with these changes of the cervix will develop cancer. For most women, these abnormal cells will go away without any treatment. But, in some women these abnormal cells can turn into true (invasive) cancers. Treating abnormal changes in cervical cells can prevent almost all cervical cancers.

The goal of [cervical cancer screening](#) is to find abnormal cells in the cervix or cervical cancer early when it is more treatable and curable. Regular screening can prevent cervical cancers and save lives. The tests for cervical cancer screening are the HPV test and the Pap test. Pre-cancerous changes can be detected by the [Pap test](#) and treated to prevent cancer from developing. The [HPV test](#) looks for infection by high-risk types of HPV that are more likely to cause pre-cancers and cancers of the cervix. HPV infection has no treatment, but a vaccine can help prevent it.

See [Can Cervical Cancer Be Prevented?](#) The specific types of treatment for abnormal screening tests are discussed in [When Cervical Screening Test Results are Abnormal](#).

Types of cervical cancer

Cervical cancers and cervical pre-cancers are classified by how they look in the lab with a microscope. The main types of cervical cancers are **squamous cell carcinoma** and **adenocarcinoma**.

- Most (up to 9 out of 10) cervical cancers are **squamous cell carcinomas**. These cancers develop from cells in the exocervix. Squamous cell carcinomas most often begin in the transformation zone (where the exocervix joins the endocervix).
- Most of the other cervical cancers are **adenocarcinomas**. Adenocarcinomas are cancers that develop from glandular cells. Cervical adenocarcinoma develops from the mucus-producing gland cells of the endocervix.
- Less commonly, cervical cancers have features of both squamous cell carcinomas and adenocarcinomas. These are called **adenosquamous carcinomas** or **mixed carcinomas**.

Although almost all cervical cancers are either squamous cell carcinomas or adenocarcinomas, other types of cancer also can develop in the cervix. These other types, such as [melanoma](#), [sarcoma](#), and [lymphoma](#), occur more commonly in other parts of the body.

Only the more common cervical cancer types are covered here.

Hyperlinks

1. www.cancer.org/cancer/understanding-cancer/what-is-cancer.html
2. www.cancer.org/cancer/types/cervical-cancer/detection-diagnosis-staging/cervical-cancer-screening-guidelines.html
3. www.cancer.org/cancer/types/cervical-cancer/detection-diagnosis-staging/screening-tests/pap-test.html
4. www.cancer.org/cancer/types/cervical-cancer/detection-diagnosis-staging/screening-tests/hpv-test.html
5. www.cancer.org/cancer/types/cervical-cancer/causes-risks-prevention/prevention.html
6. www.cancer.org/cancer/types/cervical-cancer/detection-diagnosis-staging/screening-tests/abn-pap-work-up.html
7. www.cancer.org/cancer/types/melanoma-skin-cancer.html
8. www.cancer.org/cancer/types/soft-tissue-sarcoma.html
9. www.cancer.org/cancer/types/lymphoma.html

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Last Revised: August 23, 2023

Key Statistics for Cervical Cancer

- [How common is cervical cancer?](#)
- [Mortality rates for cervical cancer](#)

How common is cervical cancer?

The American Cancer Society's estimates for cervical cancer in the United States for 2023 are:

- About 13,960 new cases of invasive cervical cancer will be diagnosed.
- About 4,310 women will die from cervical cancer.

Cervical pre-cancers are diagnosed far more often than invasive cervical cancer.

Mortality rates for cervical cancer

Cervical cancer was once one of the most common causes of cancer death for American women. The cervical cancer death rate dropped significantly with the increased use of the [Pap test](#). (This screening procedure can find changes in the cervix before cancer develops. It can also find cervical cancer early when it's small and easier to cure.)

In recent years, the HPV test has been approved as another screening test for cervical cancer since almost all cervical cancers are caused by HPV (human papillomavirus).

The [HPV test](#) looks for infection by high-risk types of HPV that are more likely to cause pre-cancers and cancers of the cervix. The HPV test can be used alone (primary HPV test) or at the same time as the Pap test (called a co-test).

Cervical cancer is most frequently diagnosed in women between the ages of 35 and 44 with the average age at diagnosis being 50. It rarely develops in women younger than 20. Many older women do not realize that the risk of developing cervical cancer is still present as they age. More than 20% of cases of cervical cancer are found in women over 65. However, these cancers rarely occur in women who have been getting regular tests to screen for cervical cancer before they were 65. See [Can cervical cancer be prevented?](#) and [Cervical Cancer Screening Tests](#) for more information about tests used to screen for cervical cancer.

Visit the [American Cancer Society's Cancer Statistics Center](#) for more key statistics.

Hyperlinks

1. www.cancer.org/cancer/types/cervical-cancer/detection-diagnosis-staging/screening-tests/pap-test.html
2. www.cancer.org/cancer/types/cervical-cancer/detection-diagnosis-staging/screening-tests/hpv-test.html
3. www.cancer.org/cancer/types/cervical-cancer/causes-risks-prevention/prevention.html
4. www.cancer.org/cancer/types/cervical-cancer/detection-diagnosis-staging/screening-tests.html

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submission, posted to the SEER web site, April 2019.

Last Revised: January 12, 2023

What's New in Cervical Cancer Research?

- [Sentinel lymph node biopsy \(SNLB\)](#)
- [Immunotherapy](#)
- [HPV vaccines](#)
- [Targeted therapy](#)

New ways to prevent and treat cancer of the cervix are being researched. Some of the promising new developments include the following:

Sentinel lymph node biopsy (SNLB)

During surgery for cervical cancer, lymph nodes in the pelvis may be removed to check to see if the cancer has spread. Instead of removing many lymph nodes, a technique called **sentinel lymph node biopsy** can be used to target just the few lymph nodes most likely to contain cancer. In this technique, a blue dye containing a radioactive tracer is injected into the cancer and allowed to drain into lymph nodes. Then, during surgery, the lymph nodes that contain radiation and the blue dye can be identified and removed. These are the lymph nodes most likely to contain cancer if it has spread. If these lymph nodes don't contain cancer, the other lymph nodes don't need to be removed. Removing fewer lymph nodes may lower the risk of later problems, such as lymphedema (swelling) of the legs.

At this time, SLNB is used mainly in stage I cervical cancers smaller than 2 cm. More studies are planned to see if this procedure should become part of the standard treatment.

Immunotherapy

In cancer, the immune system cannot control the fast growth of tumor cells. Recently,

new drugs called **immune checkpoint inhibitors** have been developed that “reset” the immune system. They have been found to be useful in treating a number of types of cancer. Their helpfulness in cervical cancer treatment is just being discovered, and clinical trials are underway to find out more. One [immunotherapy drug](#) is currently available to treat advanced cervical cancer, but studies are being done to see if this or other immunotherapy drugs would work better in combination with chemotherapy or possibly in combination with chemoradiation.

HPV vaccines

Vaccines have been developed to prevent infection with some of the high risk HPV types that are associated with cervical cancer. Currently available [vaccines](#) are intended to produce immunity to HPV types that cause about 90% of cervical cancers.

Other vaccines are meant to help women who already have advanced cervical cancer. These vaccines attempt to produce an immune reaction to the parts of the virus (E6 and E7 proteins) that make the cervical cancer cells grow abnormally. It is hoped that this reaction will kill the cancer cells or stop them from growing. Studies in advanced cervical cancer showed promising results with a vaccine against the E7 protein (ADXS11-001): tumors shrank or disease stabilized. It is also being studied in early-stage cervical cancer to see if it can help decrease the chance of the cancer returning. Other types of vaccines against the E6 or E7 proteins are also being tested.

Targeted therapy

As researchers have learned more about the gene changes in cells that cause cancer, they have been able to develop new drugs that specifically target these changes. These [targeted drugs](#) work differently from standard chemotherapy drugs. They often have side effects different from those in chemotherapy.

[Bevacizumab](#) is a targeted agent currently used to treat advanced cervical cancer. Other targeted drugs, such as cediranib and nintedanib, that block certain growth factors that help cancer cells grow have shown to be helpful in some early studies of patients with advanced cervical cancer. These drugs continue to be studied.

Hyperlinks

1. www.cancer.org/cancer/types/cervical-cancer/treating/immunotherapy.html

2. www.cancer.org/cancer/risk-prevention/hpv/hpv-vaccines.html
3. www.cancer.org/cancer/managing-cancer/treatment-types/targeted-therapy.html
4. www.cancer.org/cancer/types/cervical-cancer/treating/targeted-therapy.html

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Jhungran A, Russell AH, Seiden MV, Duska LR, Goodman A, Lee S, et al. Chapter 84: Cancers of the Cervix, Vulva, and Vagina. In: Niederhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 6th ed. Philadelphia, Pa: Elsevier; 2020.

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