



Understanding Cervical Changes

A Health Guide



“This booklet helped me talk with my doctor after an abnormal test result.”



“My doctor explained that cervical cancer screening tests can find changes in cervical cells that are not cancer and can be treated. This was reassuring to know.”

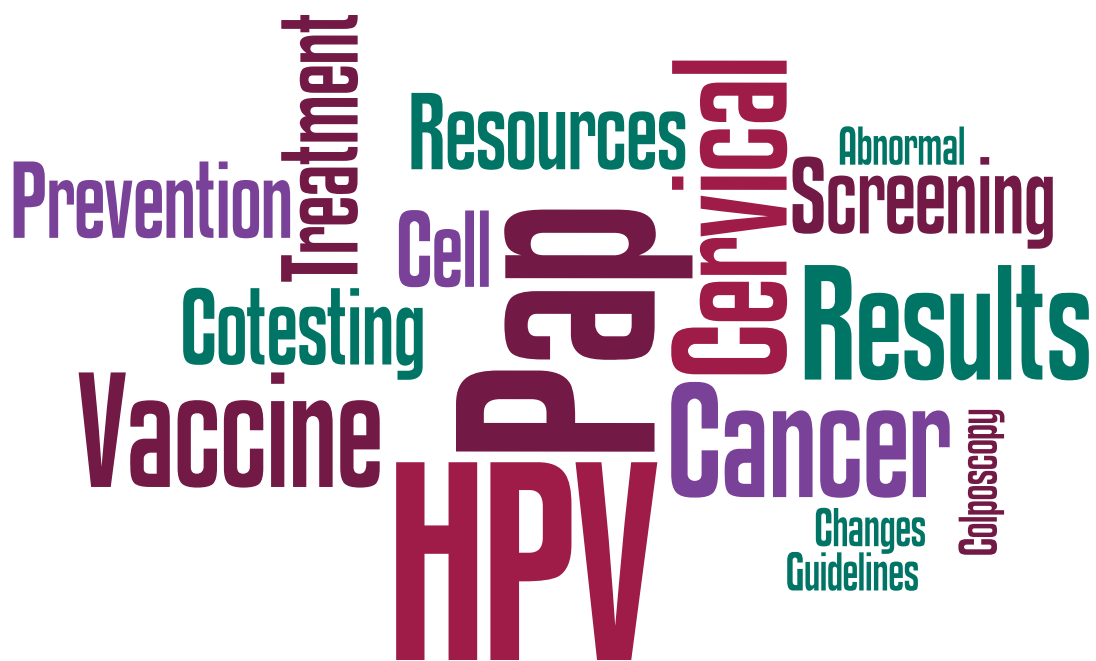
“Now that my child is 11, my daughter’s doctor said she is due for vaccinations to help protect her from meningitis, whooping cough, and HPV-related cancers.”



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Introduction

You may be reading this booklet because you had an abnormal cervical cancer screening test. Although it's common to feel uneasy, you should know that most women who have abnormal cervical screening test results do not have cervical cancer. Most have early cell changes that can be monitored (since they often go away on their own) or treated early (to prevent problems later). So, get the follow-up visits, tests, or treatment that your health care provider advises.

Scientific advances have helped us learn much more about how cervical cancer develops, as well as how and when to screen women. However, these advances have also added a layer of complexity for health care providers and women. This booklet helps you talk with your health care provider and make informed decisions to prevent cervical cancer.

Good news about preventing cervical cancer

We know what causes cervical cancer.

Nearly all cervical cancer is caused by a virus called [HPV](#) (human papillomavirus).

Cervical cell changes happen slowly.

It can take many years for cells infected with HPV to develop into [cervical cancer](#).

We have great tools to prevent cervical cancer.

Cervical cancer [screening](#) and [HPV vaccination](#) can prevent cervical cancer.

Better screening tests mean less frequent screening.

Because of improvements in cervical cancer screening, guidelines now recommend less frequent screening than before.

Abnormal test results don't mean that you have cancer.

An abnormal cervical screening test result does not mean that you have cervical cancer. It means that cervical cell changes were found or that cells are infected with HPV. Depending on the results, you may need follow-up testing or treatment. Treatment for cervical cell changes works well.

HPV Infection

“My doctor told me that long-lasting infections with certain HPV types can cause cancer in the cervix, vagina, and vulva, as well as in the anus, penis, and parts of the mouth.”



Human papillomavirus (HPV) and cervical cell changes

HPVs are a group of related viruses, some of which are spread through sexual contact and can cause cancer, including cervical cancer. Here are some basic facts about HPV:

There are many types of sexually transmitted human papillomaviruses (HPVs).

- **High-risk HPV** types can infect cervical cells and cause [cervical cancer](#). They can also infect certain other cells to cause anal cancer, penile cancer, vaginal cancer, vulvar cancer, and oropharyngeal cancer (cancer in the middle of the throat, including the tonsils and the back of the tongue).
- **Low-risk HPV** types can cause [genital warts](#). These are warts on the external and internal sex organs and glands. Genital warts do not turn into cancer.

Smoking may increase the risk that an HPV infection will persist and develop into cervical cancer. So if you smoke and have an abnormal Pap or HPV test result, it is especially important to stop smoking.

HPV infections are common. Most people who are sexually active will have an HPV infection at some point and never know it. HPV infections can be spread through skin-to-skin contact, including vaginal, anal, and oral sex. Although condoms can lower the risk of an HPV infection, they do not protect against them completely.

Most HPV infections, even with high-risk types, go away on their own without causing problems. They are fought off by the body's [immune system](#). However, sometimes infections with [high-risk HPV](#) types do not go away. When a high-risk HPV infection of cervical cells lasts many years, the cells can become abnormal. These changes can get worse over time and may become cervical cancer. Although there is currently no way to treat an HPV infection, cervical cancer can be prevented by detecting and removing abnormal cervical cells before they become cancer.

For more information about HPV and cancer, visit: www.cancer.gov/hpv.

Cervical Cancer Screening

“Cervical cancer screening can find abnormal cell changes that can be monitored or treated early, before they develop into cervical cancer.”



Screening tests for cervical cancer

Screening tests are used to check for disease when there are no symptoms. The goal of screening for cervical cancer is to find cell changes at an early stage before they become cancer and when treatment can prevent cancer from developing.

The [HPV test](#) checks cells for infection with high-risk HPV types that can cause cancer.

The [Pap test](#) (also called a [Pap smear](#) or cervical [cytology](#)) collects cervical cells and looks at them for changes caused by HPV that may—if left untreated—turn into cervical cancer. It can also detect cervical cancer cells. A Pap test sometimes finds conditions that are not cancer, such as infection or inflammation.

The [HPV/Pap cotest](#) uses a Pap test and HPV test together to check for both high-risk HPV and cervical cell changes.

Where to get screened

Doctors' offices, clinics, and community health centers offer HPV and Pap tests. Many women receive these tests from their [ob/gyn](#) (obstetrics/gynecology) or primary care provider. If you don't have a primary care provider, or doctor you see regularly, you can find a clinic near you that offers cervical cancer screening by contacting:

- Your state or local health department.
- The National Breast and Cervical Cancer Early Detection Program (NBCCEDP) by calling 1-800-232-4636 or visiting www.cdc.gov. NBCCEDP is a service of the CDC that provides low-income, uninsured, and underserved women access to cervical cancer screening and diagnostic services.
- A Planned Parenthood clinic by calling 1-800-230-7526 or visiting: www.plannedparenthood.org.
- NCI's Cancer Information Service (CIS) by calling 1-800-422-6237 or visiting: www.cancer.gov/contact.

What to expect

Cervical cancer screening is usually done during a [pelvic exam](#), which takes only a few minutes. During this exam, you lie on your back on an exam table, bend your knees, and put your feet into supports at the end of the table. The health care provider uses a [speculum](#) to gently open your [vagina](#) in order to see the [cervix](#). A soft, narrow brush or tiny spatula is used to collect a small sample of cells from your cervix.

The sample of cervical cells is sent to the lab and checked for abnormal cervical cells. The same sample can also be checked for HPV, with an HPV test. When both a Pap test and an HPV test are done, this is called [HPV/Pap cotest](#).

A pelvic exam may include more than taking samples for an HPV and/or Pap test. Your health care provider may also check the size, shape, and position of the uterus and ovaries and feel for any lumps or cysts. The [rectum](#) may also be checked for lumps or abnormal areas. Most health care providers will tell you what to expect at each step of the exam, so you will be at ease. You may also ask to be tested for other [sexually transmitted infections \(STIs\)](#).

Questions to ask

Before your exam

Ask your health care provider:

- What will happen during the exam?
- What tests will I have?
- What is the purpose of these tests?
- Will I have any discomfort?

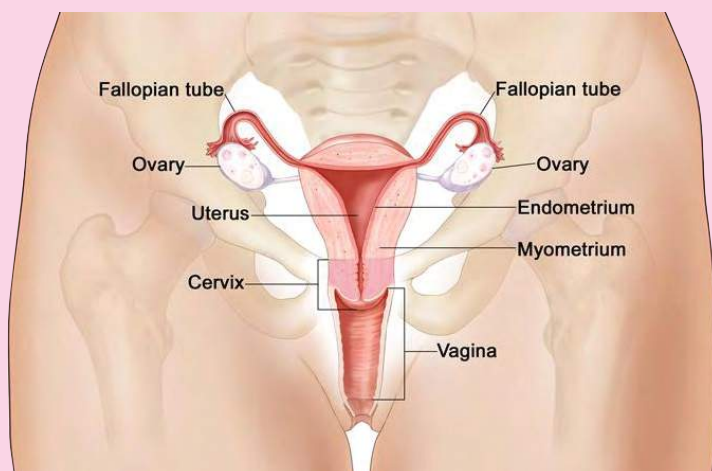
Your health care provider may ask you:

- What was the start date of your last menstrual period?
- When did you have your last cervical cancer screening test?
- What were your test results?
- Have you ever had abnormal test results?
- Have you ever had treatment for abnormal cells on your cervix?

After your exam

Ask your health care provider:

- When will I get my test results?
- How will I get these results (e.g., by mail, online, or phone call)?
- What phone number should I call if I do not get my test results?
- When I get my results, will they explain what I should do next?



The female reproductive system

The cervix is part of the female reproductive system. It's the lower, narrow end of the uterus, which leads to the vagina. The cervix opens during childbirth to allow the baby to pass through.

Screening Guidelines: When to Get Screened

“Talk with your family and friends about screening for cervical cancer. Over 4,000 women in the United States die of cervical cancer every year. Cervical cancer is easy to prevent with routine screening.”



Cervical cancer screening recommendations have been developed by organizations, including the United States Preventive Services Task Force ([USPSTF](#)) and the American Cancer Society. While the details of the recommendations vary, they are based on research findings such as:

- HPV-caused changes in cervical cells happen slowly and often go away on their own, especially in younger women
- more effective screening tests
- the harms of overtesting and [overtreatment](#) for cervical cell changes that would have gone away on their own

Cervical cancer screening guidelines for most women

Talk with your health care provider about when to start screening, how often to be screened, and what screening test to have. These ages and times between screenings apply to most women, as long as they have normal test results. Exceptions to these screening recommendations are noted in the box on [page 5](#).



“Get a free or low-cost cervical cancer screening test. It’s available if you don’t have health insurance or have a low income. Go to www.cdc.gov/cancer/nbccedp to learn more and find a screening program near you.”

Age 21-29 years

Get your first Pap test at age 21 and have Pap testing every 3 years. Even if you are already sexually active, Pap tests are not recommended until age 21, according to USPSTF recommendations.

Age 30-65 years

Get an HPV test every 5 years, an HPV/Pap cotest every 5 years, or a Pap test every 3 years, according to USPSTF recommendations.

The American Cancer Society recommends HPV tests every 5 years, starting at age 25. Screening with an HPV/Pap cotest every 5 years or a Pap test every 3 years is also acceptable.

Older than 65 years

If you are in this age group you should talk with your health care provider to learn if screening is still needed. If you have been screened regularly and had normal test results, your health care provider will probably advise that you no longer need screening. However, if your recent test results were abnormal or you have not been screened regularly, you need to continue screening beyond age 65.

For more information about screening guidelines, visit: www.cancer.gov/ucc.

Exceptions to the guidelines

Talk with your health care provider about whether you need a personalized screening plan.

Certain health conditions

More frequent screening may be recommended if you:

- are [HIV positive](#)
- have a weakened [immune system](#)
- were exposed before birth to a medicine called [diethylstilbestrol \(DES\)](#), which was prescribed to some pregnant women through the mid-1970s
- had a recent abnormal cervical screening test or [biopsy](#) result
- have had [cervical cancer](#)

Hysterectomy

Screening recommendations are based on your personal medical history, including the type of hysterectomy you may have had:

- [Partial hysterectomy](#) or [supracervical hysterectomy](#): If you had an operation to remove your uterus but not your cervix, you should continue routine cervical cancer screening.
- [Total hysterectomy](#): If you had an operation to remove both your uterus and cervix for reasons not related to cancer or abnormal cervical cells, you do not need to be screened for cervical cancer.
- [Hysterectomy](#): If you had any type of hysterectomy related to cervical cancer or [precancer](#), talk with your health care provider to learn what follow-up care you need, based on your specific [medical history](#).

HPV Test Results

[HPV test](#) results show if high-risk HPV types were found in cervical cells. An HPV test will come back as a [positive test result](#) or a [negative test result](#):

- **Positive HPV test result:** High-risk HPV was found. Your health care provider will recommend follow-up steps you need to take based on your specific test result, such as those listed in the Follow-up Tests and Procedures section on [page 9](#).
- **Negative HPV test result:** High-risk HPV was not found. You need to be tested again in 5 years. However, your health care provider may advise you to come back sooner if you had abnormal results in the past.

HPV test results usually come back from the lab in about 1–3 weeks. If you don't hear from your health care provider, call and ask for your test results. Make sure you get any follow-up tests or procedures that are recommended.

What does it mean if I have a positive HPV test after years of negative tests?

Sometimes, after several negative HPV tests, you may have a positive HPV test result. If you have a new sexual partner, this is most likely a new infection. If you do not have a sexual partner, or if you are in a [monogamous](#) relationship, this is not necessarily a sign of a new HPV infection, and it doesn't mean that your partner has a new sexual partner. Sometimes an HPV infection can become active again after many years. Some other viruses behave this way as well; for example, the virus that causes [chickenpox](#) can reactivate later in life to cause [shingles](#).

There is no way to tell whether a newly positive HPV test result is a sign of a new infection or a [reactivation](#) of an old infection. Researchers don't know whether a reactivated HPV infection has the same risk of causing cervical cell changes or cervical cancer as a new HPV infection.



“I help my patients understand what their HPV test result means, and what monitoring or follow-up care is needed.”

Pap Test Results

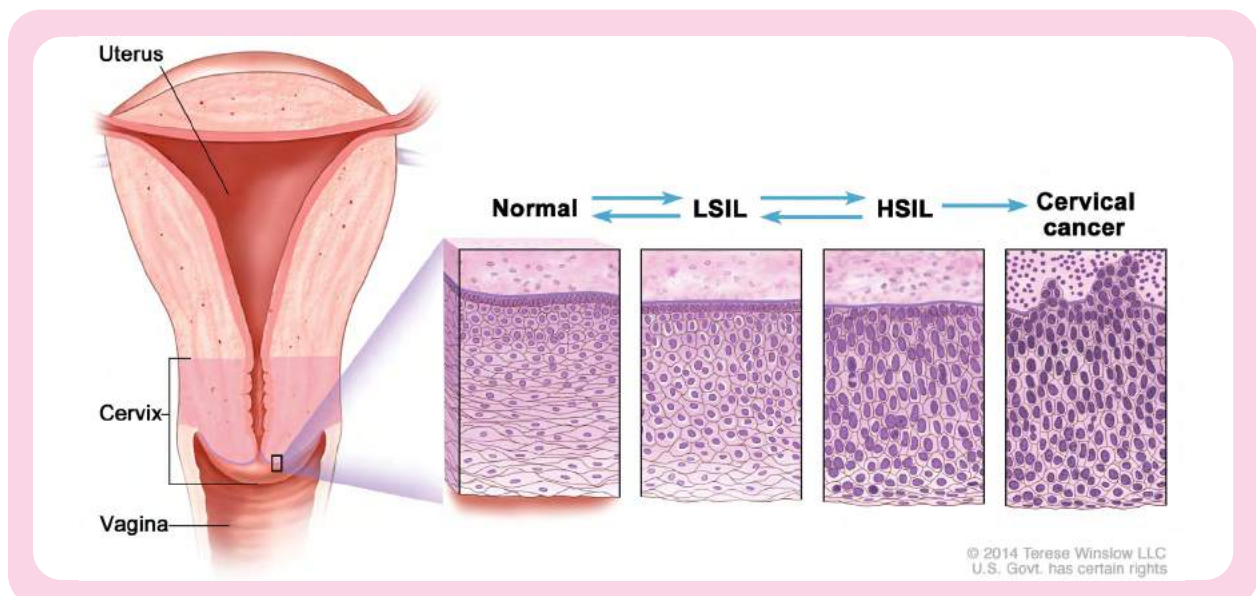
Pap test results show if cervical cells are normal or abnormal. A Pap test may also come back as unsatisfactory.

- **Normal Pap test result:** A normal Pap test result may also be called a [negative test result](#) or [negative for intraepithelial lesion or malignancy \(NILM\)](#). If only the Pap test was done, you should have another Pap test in 3 years. If the Pap test was done together with an HPV test (this is called a [Pap/HPV cotest](#)), you should have this test again in 5 years. You may need to come back sooner if you have had abnormal results in the past..
- **Abnormal Pap test result:** An abnormal test result may also be called a [positive test result](#). An abnormal Pap test result does not mean you have cervical cancer. Possible abnormal findings on a Pap test include [ASC-US](#), [AGC](#), [LSIL](#), [ASC-H](#), [HSIL](#), [AIS](#), or [cervical cancer](#). Your health care provider will recommend follow-up steps you need to take based on your specific test result and your past test results.
- **Unsatisfactory Pap test result:** The lab sample may not have had enough cells, or the cells may have been clumped together or hidden by blood or [mucus](#). Your health care provider will usually ask you to come in for another screening test in 2 to 4 months.

Pap test results usually come back from the lab in about 1–3 weeks. If you don't hear from your health care provider, call and ask for your test results. Make sure you receive your test results and understand any follow-up visits or treatments that you need.

Cervical cell changes

These images show how cervical cells that have long-lasting infections with high-risk HPV can change over time and become abnormal. Abnormal cervical cells may also return to normal even without treatment, especially in younger women. LSIL and HSIL are two types of abnormal changes to cervical squamous cells.



Pap test results and possible next steps

<p>ASC-US Atypical Squamous Cells of Undetermined Significance</p>	<p>Atypical Squamous Cells of Undetermined Significance (ASC-US) is the most common abnormal Pap test finding. It means some cells don't look completely normal, but it's not clear if the changes are caused by HPV infection. Other things can cause cells to look abnormal, including irritation, some infections (such as a yeast infection), growths (such as polyps in the uterus), and changes in hormones that occur during pregnancy or menopause. Although these things may make cervical cells look abnormal, they are not related to cancer. Your health care provider will usually do an HPV test to see if the changes may be caused by an HPV infection. If the HPV test is negative, estrogen cream may be prescribed to see if the cell changes are caused by low hormone levels. If the HPV test is positive, you may need additional follow-up tests as explained on page 9.</p>
<p>AGC Atypical Glandular Cells</p>	<p>Atypical Glandular Cells (AGC) means some glandular cells were found that do not look normal. This can be a sign of a more serious problem up inside the uterus, so your health care provider will likely ask you to come back for a colposcopy, as explained on page 10.</p>
<p>LSIL Low-Grade Squamous Intraepithelial Lesions</p>	<p>Low-Grade Squamous Intraepithelial Lesions (LSIL) means there are low-grade changes that are usually caused by an HPV infection. Your health care provider will likely ask you to come back for more testing, as explained on page 10, to make sure that there are not more serious (high-grade) changes.</p>
<p>ASC-H Atypical Squamous Cells, Cannot Exclude HSIL</p>	<p>Atypical Squamous Cells, cannot exclude HSIL (ASC-H) means some abnormal squamous cells were found that may be a high-grade squamous intraepithelial lesion (HSIL), although it's not certain. Your health care provider will likely ask you to come back for a colposcopy, as explained on page 10.</p>
<p>HSIL High-Grade Squamous Intraepithelial Lesions</p>	<p>High-Grade Squamous Intraepithelial Lesions (HSIL) means there are moderately or severely abnormal cervical cells that could become cancer in the future if not treated. Some lesions may be called precancer. Your health care provider will likely ask you to come back for a colposcopy, as explained on page 10.</p>
<p>AIS Adenocarcinoma In Situ</p>	<p>Adenocarcinoma in situ (AIS) means an advanced lesion (area of abnormal tissue) was found in the glandular tissue of the cervix. AIS lesions may become cancer (cervical adenocarcinoma) if not treated. Your health care provider will likely ask you to come back for a colposcopy and biopsy, as explained on page 10.</p>
<p>Cervical Cancer Cells</p>	<p>Cervical cancer cells (cervical squamous cell carcinoma or cervical adenocarcinoma) are sometimes found on a Pap test. However, this finding is very rare for women who have been screened at regular intervals.</p> <p><i>For more information about cervical cancer and treatment, visit:</i> www.cancer.gov/types/cervical.</p>

Follow-up Tests and Procedures

Keep in mind that most women with abnormal cervical screening test results do not have cancer. However, if you have an abnormal test result, it's important to get the follow-up care that is recommended. Next steps are based on your chances of developing severe cervical cell changes that could become [cervical cancer](#), if not treated.

“Most women who have an abnormal test result do not have cervical cancer. However, follow-up testing and treatment may be needed.”



Follow-up care

In addition to your current test result, your health care provider will consider factors such as these when recommending follow-up care:

- previous screening test results,
- any previous treatments for [precancerous](#) cervical cell changes, and
- personal health factors, such as your age.

You may be advised to:

- return for a repeat [HPV test](#) or [HPV/Pap cotest](#) in 1 or 3 years,
- have a [colposcopy](#) and [biopsy](#), or
- receive treatment, as explained on [page 12](#).

The goal is to detect and treat severe cervical cell changes that could develop into cervical cancer while also decreasing testing and treatment for less severe conditions ([low-grade](#) cervical cell changes).

For more information about risk-based screening guidelines, visit: www.cancer.gov/ucc.

What to expect during a colposcopy

A [colposcopy](#) is a procedure that allows the [cervix](#) to be examined. During this procedure, your health care provider inserts a [speculum](#) to gently open the [vagina](#) and view the cervix. A vinegar solution will be applied to the cervix to help show abnormal areas. Your health care provider then places an instrument called a [colposcope](#) close to the vagina. It has a bright light and a magnifying lens and allows your health care provider to look closely at your cervix.

During a colposcopy, a cervical [biopsy](#) is usually done. This is a procedure in which a sample of abnormal tissue is removed from the cervix so that the cervical cells can be studied under a microscope.

Talk with your health care provider to learn what to expect during and after your biopsy procedure. Some women have bleeding and/or discharge after a biopsy. Others have pain that feels like cramps during [menstruation](#). Biopsy samples are checked by a [pathologist](#) for [cervical intraepithelial neoplasia \(CIN\)](#).

Biopsy findings: Cervical intraepithelial neoplasia (CIN)

[CIN](#) is the term used to describe abnormal cervical cells that were found on the surface of the cervix after a biopsy.

CIN is graded on a scale of 1 to 3, based on how abnormal the cells look under a microscope and how much of the cervical tissue is affected. [LSIL](#) (also called low-grade squamous intraepithelial lesion, or mild [dysplasia](#)) seen on a Pap test is generally CIN 1. [HSIL](#) (also called high-grade squamous intraepithelial lesion, or moderate or severe dysplasia) seen on a Pap test can be CIN 2, CIN2/3, or CIN 3.

- [CIN 1](#) changes are mild, or low grade. They usually go away on their own and do not require treatment.
- [CIN 2](#) changes are moderate and are typically treated by removing the abnormal cells. However, CIN 2 can sometimes go away on its own. Some women, after consulting with their health care provider, may decide to have a colposcopy with a biopsy every 6 months. CIN 2 must be treated if it progresses to CIN 3 or does not go away in 1 to 2 years.
- [CIN 3](#) changes are severely abnormal. Although CIN 3 is not cancer, it may become cancer and spread to nearby normal tissue if not treated. Unless you are pregnant, it should be treated right away.

Pregnancy and treatment of high-grade cervical cell changes

If you are pregnant or plan to become pregnant and are found to have high-grade cervical cell changes, your health care provider will talk with you about treatments that are recommended for you and the timing of these procedures. Depending on your specific diagnosis, you may be treated postpartum, or after delivery.

Questions to ask before a test or procedure

- What is the purpose of this test or procedure? _____

- What will the results tell us? _____

- What will happen during the procedure? _____

- How long will the procedure take? _____
- Should I limit any activities after the procedure? For how long? _____

- What problems or side effects should I call you about after the procedure? _____

“My doctor answered all my questions and explained what to expect during and after the procedure. That put me at ease.”



Treatments for High-Grade Cervical Cell Changes

These treatments are used when a woman has high-grade cervical cell changes that have a high risk of developing into cancer. Your health care provider will talk with you about which treatment is recommended for you and why. The questions on the next page can help you talk with your health care provider to learn more.

“It was reassuring to talk with my doctor. She helped me understand what to expect. It was comforting to learn how this treatment would help me.”



Common treatment procedures

Treatments that remove abnormal cells are called [excisional](#) treatments:

- [Cold knife conization](#) (also called [cold knife cone biopsy](#)): A scalpel or laser knife is used to remove a cone-shaped section of abnormal tissue. This procedure is done at the hospital and requires [general anesthesia](#).
- [LEEP \(loop electrosurgical excision procedure\)](#): A thin wire loop, through which an electrical current is passed, is used to remove abnormal tissue. [Local anesthesia](#) is used to numb the area. This procedure is done in your health care provider’s office. It takes only a few minutes, and you will be awake during the procedure.

Treatments that destroy abnormal cells are called [ablative](#) treatments:

- [Cryotherapy](#): A special cold probe is used to destroy abnormal tissue by freezing it. This procedure is done in your health care provider’s office. It takes only a few minutes and usually does not require [anesthesia](#).
- [Laser therapy](#): A laser (narrow beam of intense light) is used to destroy abnormal tissue. This procedure is done at the hospital and [general anesthesia](#) is used.

Questions to ask before treatment

- What are the possible treatments for the condition that I have? _____

- Which treatment do you recommend for me, and why? _____

- What are the advantages and disadvantages of this treatment? _____

- What will happen during the treatment? _____

- What are the possible risks of this treatment? _____

- How might this treatment affect a future pregnancy? _____

- How long will the procedure take? _____

- Will general or local anesthesia be needed? _____

- What side effects might I have from this procedure? _____

- How long might these side effects last? _____

- Are there any activities that I should avoid after the procedure? _____

HPV Vaccination

[Human papillomavirus \(HPV\) vaccination](#) protects against infection with HPV types that cause:

- nearly all cases of [cervical cancer](#)
- most cases of [anal cancer](#) and many cases of [penile cancer](#), [vaginal cancer](#), [vulvar cancer](#), and [oropharyngeal cancer](#) (cancer in the middle of the throat, including the tonsils and the back of the tongue).

HPV vaccination also protects against infection by the HPV types that cause most [warts](#) on or around the [genitals](#) and [anus](#).

“Call your child’s doctor or your local health clinic to have your son or daughter receive the HPV vaccine. This vaccine protects against certain types of cancer.”



Answers to commonly asked questions

At what age should children get the HPV vaccine?

Girls and boys should start the HPV vaccine series at age 11 or 12; it may be started at age 9.

How many doses are given?

- **Under age 15:** Two doses of the vaccine are given. The second dose is given 6–12 months after the first dose. This provides as good or better protection than three doses given at older ages. Preteens have a stronger immune response to the HPV vaccine than older adolescents and can get fewer doses.
- **Ages 15–26:** Three doses of the vaccine are given. The second dose is given 1–2 months after the first dose, and the third dose is given 6 months after the first dose.

What if someone didn’t complete the series?

HPV vaccination is recommended for children and adults, up to age 26 if necessary, to complete the series.

Can the HPV vaccine be given at older ages?

Yes, the vaccine can be given to adults between the ages of 27 and 45 who didn't receive all vaccine doses earlier. Adults in this age group benefit less from the vaccine because they are more likely to have been exposed to HPV already. Therefore, vaccination is not routinely recommended for people in this age group. If you are concerned that you are at risk for a new HPV infection, talk with your health care provider about whether HPV vaccination may be right for you.

Do vaccinated women still need to be screened for cervical cancer?

Yes. Because HPV vaccination doesn't protect against all HPV types that can cause cervical cancer, it's important to get screened for cervical cancer.

Is the HPV vaccine safe?

Yes. Side effects of the HPV vaccine are similar to those of other vaccines and may include mild pain in the arm where the vaccine was given. Sometimes a slight fever, dizziness, or nausea may occur.

What impact has HPV vaccination had so far?

Research has found that HPV vaccination is highly effective in preventing cervical cancer, high-grade cervical lesions, and genital warts.

Related Resources

National Cancer Institute

The National Cancer Institute has information to help you learn more about cervical cancer prevention, screening, and treatment:

- Visit our cervical cancer home page: www.cancer.gov/types/cervical
- Contact a cancer information specialist: www.cancer.gov/contact or call 1-800-422-6237 (1-800-4-CANCER)
- Access other formats (PDF, e-book, and Kindle) of this guide: www.cancer.gov/ucc-guide
- View this online resource: **Next Steps after an Abnormal Cervical Cancer Screening Test: Understanding HPV and Pap Test Results** at www.cancer.gov/ucc

Centers for Disease Control and Prevention (CDC)

The CDC's National Breast and Cervical Cancer Early Detection Program (NBCCEDP) helps low-income, uninsured, and underinsured women gain access to timely breast and cervical cancer screening, diagnostic, and treatment services. NBCCEDP also provides patient navigation services to help women overcome barriers and get timely access to quality care. Call 1-800-232-4636 (1-800-CDC-INFO) or visit www.cdc.gov/cancer/nbccedp to learn more.

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www.cancer.gov/publications/patient-education



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