

PATIENT EDUCATION



The American College of
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WOMEN'S HEALTH CARE PHYSICIANS

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Abnormal Cervical Cancer Screening Test Results

Cervical cancer screening is used to find abnormal changes in the **cells** of the **cervix** that could lead to cancer. Screening includes the **Pap test** and, for some women, testing for a virus called **human papillomavirus (HPV)**.

Having an abnormal cervical cancer screening test result is not uncommon. It does not mean that you have cancer. Often, the abnormal changes go away by themselves. If you have an abnormal result, your health care provider will do additional tests to see if you need treatment.

This pamphlet explains

- HPV and abnormal cervical changes
- cervical cancer screening
- abnormal Pap test results
- follow-up tests and possible treatments

HPV and Abnormal Cervical Changes

The cervix is the opening to the uterus and is located at the top of the vagina. It is covered by a thin layer of tissue made up of cells called squamous cells. The main cause of abnormal cervical cells is infection with HPV. Abnormal changes can be mild, or they can be more serious. The more serious changes can lead to cancer if not treated. Cancer occurs when abnormal cervical cells grow out of control. These cells invade deeper into the cervical tissue. In advanced cases, cancer cells can spread to other organs of the body.

Types of HPV

There are over 100 types of HPV. Some types have been linked to cancer of the cervix, vulva, vagina, anus, and penis. Some also can cause cancer of the head and neck. These types of HPV are known as “high-risk types.” Most cases of cervical cancer are caused by just two high-risk types of HPV—types 16 and 18. Other HPV types, called “low-risk types,” have been linked to genital warts. Genital warts do not cause cancer. They can be removed with medication or surgery.

HPV Infection

Infection with HPV is very common. At least 80% of all women will have an HPV infection at some point in their lives. HPV can be passed from person to person during sexual contact.

Most HPV infections go away on their own. These short-term infections cause only mild changes in cervical cells. The cells go back to normal as the HPV infection clears. But in some women, HPV does not go away. These women usually have more severe changes in their cells. The longer HPV is present and the older the woman, the greater the risk that she will develop precancerous changes or cancer. It usually takes several years for precancerous changes in the cervix to become cervical cancer. Smoking is a major risk factor for long-term HPV infections.

Cervical Intraepithelial Neoplasia

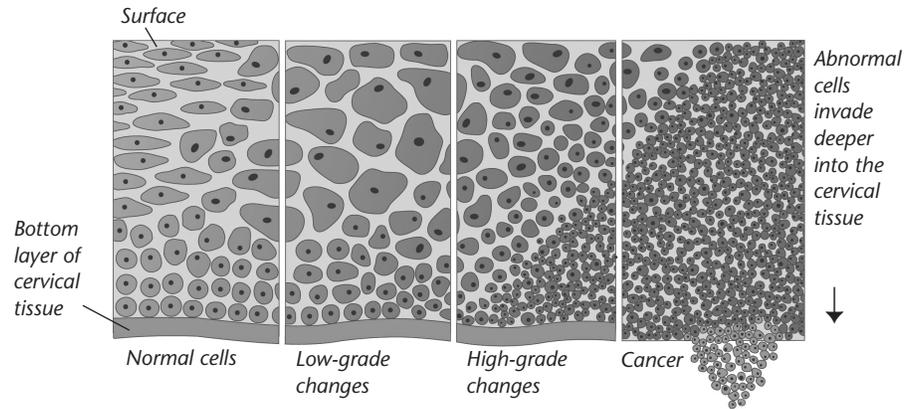
Changes in cervical cells caused by HPV infection are called **cervical intraepithelial neoplasia (CIN)**. CIN is graded as 1, 2, or 3 (see box “Terms Used to Describe Cervical Changes”). CIN 1 is used for mild (low-grade) changes in the cells that usually indicate a short-term HPV infection. The cells most likely will return to normal without treatment. CIN 2 is used for moderate changes. CIN 3 is used for more severe (high-grade) changes. Moderate and high-grade changes can progress to cancer. For this reason, they may be described as “precancer.”

Cervical Cancer Screening

There are two types of tests used in cervical cancer screening:

1. The Pap test involves collecting a small sample of cells from the cervix. The sample is sent to a laboratory and examined under a microscope to see if abnormal cells are present. Women aged 21–29 years should have a Pap test every 3 years.

Abnormal Cervical Cells



This enlarged view of cervical cells shows how abnormal cells can become cancer.

2. The HPV test looks for the presence of high-risk HPV types that have been linked to cervical cancer. The preferred cervical cancer screening for women aged 30–65 years is a Pap test and an HPV test performed together (co-testing) every 5 years. An acceptable alternative is to have a Pap test alone every 3 years.

Women who have a history of cervical cancer, are infected with **human immunodeficiency virus (HIV)**, have a weakened **immune system**, or who were exposed to diethylstilbestrol (DES) before birth may need more frequent screening.

Abnormal Pap Test Results

Pap test results can be negative, abnormal, or unsatisfactory. A negative Pap test result means that the cells appear normal. Abnormal cells from a Pap test are described as a **squamous intraepithelial lesion (SIL)**. Pap test results also may be unsatisfactory for evaluation, meaning that the Pap test could not be read. Further evaluation, usually repeating the test, is needed for these types of results.

SIL is not a diagnosis of precancer or cancer. The Pap test is a screening test. It cannot tell exactly how severe the changes are in cervical cells. Additional testing is needed to find out whether precancer or cancer actually

Terms Used to Describe Cervical Changes

Cervical changes may be called a squamous intraepithelial lesion (SIL) or cervical intraepithelial neoplasia (CIN). SIL is used to describe Pap test results. CIN is used to describe the actual changes in cervical cells.

	<i>Mild Changes</i>	<i>Moderate Changes</i>	<i>Severe Changes</i>
Terms used for Pap test results	Low-grade SIL	High-grade SIL	High-grade SIL
Terms used for biopsy results	CIN 1	CIN 2	CIN 3

is present. Women with a mildly abnormal Pap test result actually may have more severe changes. Women with a serious abnormal Pap test result actually may have only mild changes.

The tests that you may have after an abnormal result depend on the type of result and your age. Sometimes, only repeat testing is needed. In other cases, **colposcopy** and **cervical biopsy** may be recommended to find out how severe the changes really are (see box “Tests Used to Evaluate Abnormal Pap Test Results”).

If severe changes or cancer are found, treatment is recommended. If mildly abnormal changes are found, you may need only close follow-up until it is confirmed that the cells have returned to normal. If you

are pregnant or planning to become pregnant, your health care professional may discuss watching precancer temporarily with close follow-up.

Atypical Squamous Cells of Undetermined Significance

Atypical squamous cells of undetermined significance (ASC-US) is the most common type of abnormal Pap test result. It means that changes in the cervical cells have been found, but it is not clear whether the changes are caused by HPV or by something else. For women 25 years and older, an HPV test for the types linked to cervical cancer is the preferred way of evaluating this result. If the result is negative for HPV, it means that the likelihood of having CIN 2 or higher is very

Tests Used to Evaluate Abnormal Pap Test Results

If you are told that you have an abnormal cervical cancer screening test result, you may need further evaluation. The following tests may be done depending on your age and your initial Pap test result:

Repeat Pap Test or Co-Test

A repeat Pap test or a repeat co-test is recommended as a follow-up to some abnormal test results. These repeat tests may be done in 1 year or in 3 years depending on your initial test result, your age, and the results of previous tests.

Human Papillomavirus Testing

Human papillomavirus (HPV) testing looks for the presence of the HPV types that have been linked to cervical cancer. An HPV test can be done on the same cells used for the initial Pap test. This is called reflex HPV testing. With reflex HPV testing, you do not have to return for another test.

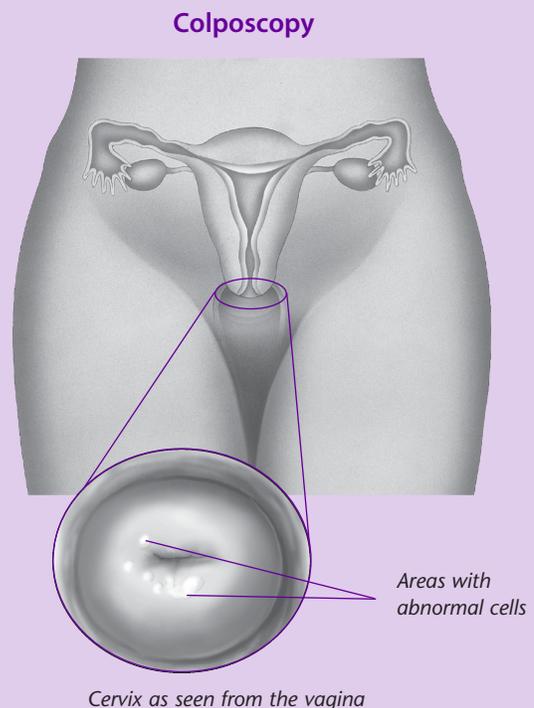
There is another kind of HPV test that looks specifically for HPV type 16 and HPV type 18. These two types cause the most cases of cervical cancer. This kind of HPV test is called HPV typing. It can be used as a follow-up test for women aged 30 years and older who have a normal Pap test result but a positive HPV test result. If the HPV typing test result is positive, colposcopy is recommended. Another option for women with a normal Pap test result but a positive HPV test result is to have a repeat co-test in 1 year.

Colposcopy, Cervical Biopsy, and Endocervical Sampling

Colposcopy is a procedure in which the cervix is examined in detail through a magnifying device. If an area of abnormal cells is seen, a biopsy may be done. For a biopsy, a small sample of tissue is removed and sent to a lab for testing. The lab tests can determine whether CIN is present and, if so, what grade it is. Endocervical sampling also may be done. A small brush or other instrument is used to take a tissue sample from the cervical canal.

Endometrial Sampling

In this test, a sample of the **endometrium** (the lining of the uterus) is collected for study. Some women with an atypical glandular cells (AGC) result need to have this follow-up test.



low. In this case, nothing needs to be done other than repeating co-testing in 3 years. If the result is positive for HPV, colposcopy is recommended.

Low-Grade Squamous Intraepithelial Lesion

Low-grade squamous intraepithelial lesion (LSIL) is very common. It means that the cells show changes that are mildly abnormal. LSIL usually is caused by an HPV infection that often goes away on its own. LSIL is managed in different ways in different age groups.

Younger women (aged 21–24 years) are at very low risk of having cervical cancer. Management of LSIL in this age group involves two repeat Pap tests 12 months apart. If both test results are negative, routine screening can be resumed. If both tests are ASC-US or worse, a colposcopy is recommended. Women aged 25 years and older are at higher risk of having cervical precancer and cancer. The preferred way to evaluate women with LSIL in this age group is colposcopy.

Table 1. Cervical Cancer Screening Test Results Follow-up

This table shows the recommended follow-up for women who have had no prior abnormal cervical cancer screening test results. Follow-up is different when an abnormal cervical cancer screening test result occurs in a woman who has had a prior abnormal result.

	Ages 21–24	Ages 25–29	Ages 30 and Older	
			HPV Negative	HPV Positive
Normal Pap test results	Routine screening: Pap test every 3 years	Routine screening: Pap test every 3 years	Routine screening: Preferred—Co-testing* every 5 years Acceptable—Pap test alone every 3 years	Acceptable—Co-testing* in 12 months Acceptable—HPV typing†
ASC-US	Preferred—Repeat Pap test in 12 months Acceptable—Reflex HPV test‡	Preferred—Reflex HPV test‡ Acceptable—Repeat Pap test in 12 months	Repeat co-testing* in 3 years	Colposcopy
LSIL	Repeat Pap test in 12 months	Colposcopy	Preferred—Repeat Pap test in 12 months Acceptable—Colposcopy	Colposcopy
ASC-H	Colposcopy	Colposcopy	Colposcopy	Colposcopy
HSIL	Colposcopy	Immediate excisional treatment or colposcopy	Immediate excisional treatment or colposcopy	Immediate excisional treatment or colposcopy
AGC	AGC has several subcategories. The type of follow-up tests that are recommended depend on the AGC subcategory. Tests performed for follow-up include colposcopy, endocervical sampling, and endometrial sampling.			

Abbreviations: ASC-H = atypical squamous cells, cannot rule out HSIL; ASC-US = atypical squamous cells of undetermined significance; AGC = atypical glandular cells; HPV = human papillomavirus; HSIL = high-grade squamous intraepithelial lesion; LSIL = low-grade squamous intraepithelial lesion.

*Co-testing: Combined Pap test and HPV test

†HPV typing: A test for the presence of HPV type 16 and HPV type 18

‡Reflex HPV test: A test for the presence of high-risk HPV types using the sample used for a Pap test

High-Grade Squamous Intraepithelial Lesion

High-grade squamous intraepithelial lesion (HSIL) suggests more serious changes in the cervix than LSIL. It is more likely than LSIL to be associated with precancer and cancer. Younger women with this result should have a colposcopy, while older women may have either a colposcopy or have treatment without further testing.

Atypical Squamous Cells, Cannot Exclude HSIL

Atypical squamous cells, cannot exclude HSIL (ASC-H) means that changes in the cervical cells have been found that raise concern for the presence of HSIL. A colposcopy is recommended to clarify the results.

Atypical Glandular Cells

Glandular cells are another type of cell that makes up the thin layer of tissue that covers the inner canal of the cervix. Glandular cells also are present inside the uterus. An atypical glandular cells (AGC) result means that changes have been found in glandular cells that raise concern for the presence of precancer or cancer. It is not always possible to tell whether the glandular cells are from the cervix or the uterus. Further testing is needed.

Cancer

This result means that cancer cells have been found. Cancer cells look very different from normal cells under a microscope. If cancer cells are detected, more tests are needed to find out the extent of the cancer and to choose the best treatment.

Treatment

In general, there are two ways to remove abnormal cervical cells: 1) “excisional” treatment and 2) “ablative” treatment. With excisional treatments, tissue is removed from the cervix and is sent to a laboratory to be studied. Results can tell whether CIN actually is present and, if so, how severe it is. With ablative treatment, abnormal cervical tissue is destroyed, and there is no tissue to send to a laboratory for study. The type of treatment that you have depends on your biopsy results, age, and whether you have had a previous diagnosis of CIN.

Excisional treatments include the following:

- **Loop electrosurgical excision procedure (LEEP)**—A thin wire loop that carries an electric current is used to remove abnormal areas of the cervix. LEEP usually is performed in a health care provider’s office.
- **Conization**—A cone-shaped piece of the cervix that contains the abnormal cells is removed. This treatment may be done in an operating room at a hospital with **general anesthesia** or in a surgical center with other types of anesthesia. You should be able to go home the same day.

Ablative treatments include the following:

- **Cryotherapy**—An instrument is used to freeze abnormal cervical tissue, which then sloughs off.

This type of treatment can be performed in a health care provider’s office.

- **Laser therapy**—A focused beam of light is used to destroy abnormal cervical tissue. Laser therapy may be done in an operating room or a surgical center with **local anesthesia** or general anesthesia.

Some risks, such as heavy bleeding, are associated with certain forms of treatment. Excisional procedures also have been linked to an increased risk of preterm delivery in future pregnancies, but not all experts agree with this. Talk to your health care professional about these risks before you are treated.

Treatment Follow-Up

You will need follow-up testing after treatment. Follow-up testing usually involves having more frequent Pap and HPV tests. The number of normal follow-up tests that you need to have before you can resume normal cervical cancer screening depends on the biopsy results, your age, and other factors. After your follow-up testing is complete, you should continue to have the routine cervical cancer screening recommended for your age.

Finally...

If you have an abnormal Pap test result, talk to your health care professional about what the result means and the recommended next steps. Keep in mind that many women with some types of abnormal Pap test results do not need treatment, only follow-up testing. It is important to have regular cervical screening tests to detect these problems. If treatment is needed, it can be done early enough to prevent cancer before it develops.

Glossary

Cells: The smallest units of a structure in the body; the building blocks for all parts of the body.

Cervical Biopsy: A minor surgical procedure to remove a small piece of cervical tissue that is then examined under a microscope in a laboratory.

Cervical Intraepithelial Neoplasia (CIN): A term used to describe abnormal changes in the cells of the cervix that are caused by infection with human papillomavirus. CIN is graded as 1 (low-grade), 2 (moderate), or 3 (high-grade).

Cervix: The lower, narrow end of the uterus at the top of the vagina.

Colposcopy: Viewing of the cervix, vulva, or vagina under magnification with an instrument called a colposcope.

Conization: A procedure in which a cone-shaped piece of tissue is removed from the cervix.

Cryotherapy: A freezing technique used to destroy diseased tissue; also known as "cold cauterly."

Endometrium: The lining of the uterus.

General Anesthesia: The use of drugs that produce a sleep-like state to prevent pain during surgery.

Human Immunodeficiency Virus (HIV): A virus that attacks certain cells of the body's immune system and causes acquired immunodeficiency syndrome (AIDS).

Human Papillomavirus (HPV): The name for a group of related viruses, some of which cause genital warts and some of which can cause cancer of the cervix, vulva, vagina, penis, anus, mouth, and throat.

Immune System: The body's natural defense system against foreign substances and invading organisms, such as bacteria that cause disease.

Local Anesthesia: The use of drugs that prevent pain in a part of the body.

Loop Electrosurgical Excision Procedure (LEEP): The removal of abnormal tissue from the cervix using a thin wire loop and electric energy.

Pap Test: A test in which cells are taken from the cervix and vagina and examined under a microscope.

Squamous Intraepithelial Lesion (SIL): A term used to describe abnormal cervical cells detected by the Pap test.

This Patient Education Pamphlet was developed by the American College of Obstetricians and Gynecologists. Designed as an aid to patients, it sets forth current information and opinions on subjects related to women's health. The average readability level of the series, based on the Fry formula, is grade 6-8. The Suitability Assessment of Materials (SAM) instrument rates the pamphlets as "superior." To ensure the information is current and accurate, the pamphlets are reviewed every 18 months. The information in this pamphlet does not dictate an exclusive course of treatment or procedure to be followed and should not be construed as excluding other acceptable methods of practice. Variations, taking into account the needs of the individual patient, resources, and limitations unique to the institution or type of practice, may be appropriate.

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