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Pap smear…if you are a woman and are of the age to be regularly screened, you cringed at the very mention of the phrase. Women often get pap smears or HPV testing because their “doctor told them to” or “it’s part of their yearly physical”. If we knew more about WHY pap smears and HPV screening tests are essential to overall health and cervical cancer prevention, yearly physicals would be less intimidating.

Pap smears and HPV testing are two small but essential steps in the early detection of cancerous cells. Without pap smears and HPV testing, cervical cancer incidences would skyrocket, and the survival rate would plummet. [Before cervical cancer screening](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2762353/) tests and awareness initiatives, cervical cancer was once considered the number one cause of death in women in the United States. With the implementation of cervical cancer screenings, cervical cancer rates for women in the United States is down to [two percent](https://seer.cancer.gov/statfacts/html/cervix.html) yearly.

After reading this post on cervical cancer screenings, it is unlikely that you will skip with joy to your next physical. However, with a little explanation of the importance of screenings and their place in cancer prevention, perhaps you can walk a little taller and have a little more confidence knowing that you have taken steps to control your health and well-being.

**A Quick Anatomy Review**

Let’s get our bearings first. Cervical cancer screenings are completed by taking a cell tissue sample from the cervix. [The cervix](https://www.cancer.gov/publications/dictionaries/cancer-terms/def/cervix) is the separation between the uterus and the vagina. The uterus is above the cervix, and the vagina is below the cervix.

A general understanding of female anatomy is vital for women to understand when it comes to cervical cancer screening. A woman who had her uterus removed (hysterectomy) may still require regular cancer screening. It will depend on the recommendations of your doctor/OBGYN.

**Cervical Cancer Screening**

Cancer screening is just as it sounds: physicians look for signs of pre-cancerous and cancerous cells. Pre-cancerous cells are cells that have changed and look different from the normal cells surrounding them. Pre-cancerous cells can turn into cancer if left untreated. Finding pre-cancerous cells early is the key to early treatment and cancer prevention.

There are two different kinds of screening options: screening for HPV and the pap smear (also called cytology). We often think of the two as one test, but they are two tests looking for different things. The two screenings can also be combined into one test, called a -co-test.

*HPV Screen*

[HPV tests](https://www.cancer.gov/types/cervical/screening) are specific to HPV and test to see if cervical cells are infected with HPV. Since HPV is strongly associated with cervical cancer, HPV present in the cells may cause your physician to complete more testing. The HPV test will not detect other types of pre-cancerous cells.

*Pap Smear (Cytology)*

A pap smear tests for cells that are abnormal and may be pre-cancerous. A pap smear is performed by scraping the cervix and collecting a sample. If pre-cancer cells are found, follow-up testing may be indicated to make sure the cells are genuinely pre-cancerous.

**Screening Guidelines**

When you go to your annual check-up, you will fall into one of four categories separated by age: 20 years old and younger, 21-29, 30-65, and 65 years and older.

*20 years old and under*

According to the [American Congress of Obstetricians and Gynecologists (ACOG) guidelines](https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/04/updated-cervical-cancer-screening-guidelines), young women 20 years old and younger do not need to be screened for cervical cancer, even if they are sexually active. Cervical cancer in this age group is very [rare](https://www.cancer.org/cancer/cervical-cancer/about/key-statistics.html), so screening is not recommended for this age group.

*Ages 21-29*

Those that fall into the [21-29-year-old](https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/04/updated-cervical-cancer-screening-guidelines) category should be screened with a pap smear (cytology test) every three years. ACOG does not recommend HPV testing in this age group.

*Ages 30-65*

Women who are between the ages of 30 and 65 years old have three different testing options. The [three testing options](https://www.cdc.gov/cancer/cervical/basic_info/screening.htm) are as follows:

1. *HPV Screening:* Women in this age group can receive HPV screening every five years if the test results are normal and no HPV is detected. Normal results mean that there were no pre-cancerous cells found on the cervix.
2. *Pap Smear:* A pap smear can be completed on women in the 30-65 age group every three years as long as testing results are normal.
3. *Co-testing:* Co-testing is when an HPV screen and pap smear are done together. A normal test indicates that no HPV or cervical pre-cancerous cells were found. Women receiving this test can be tested every five years if their results return normal.

While the three screening procedures are very effective in finding pre-cancerous and cancerous cells, [research supports](https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/04/updated-cervical-cancer-screening-guidelines) that co-testing and HPV testing have been slightly more successful in finding abnormal cervical changes than pap smears alone. However, there is also a possibility of false positive and false negative findings with HPV screening and co-testing. Be sure to consult with your doctor to determine the best test for you.

**Explaining Screening Results**

Pap smears are uncomfortable, and the results can be challenging to understand. Results fall into three primary categories: [normal, abnormal, and unsatisfactory](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results).

***HPV Screening Results***

HPV screenings test for High-Risk HPV in the cells being tested. Therefore, the test is specific to HPV strains that are cancer-causing and have been linked to cervical cancer, namely HPV 16 and HPV 18.

*Normal (Negative) Screening*

A [normal screen](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) means that no High-Risk HPV was found. You can return in five years for regular screening. Based on your previous history and findings, talk to your provider to determine if you need to return sooner.

*Abnormal Results*

An [abnormal HPV screen](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) means that High-Risk HPV was detected in the cells collected. Further testing, like a colposcopy and biopsy, will likely be required. You will need to discuss with your provider what steps are next.

***Pap Smear/Cytology Results***

*Normal (Negative) Screenings*

If the pap smear finds that the cells tested have not changed, the test is considered [normal or negative](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results). If you see “negative” on your results, it simply means that no changes were found in the cells, and the test is considered normal.

Typically, further testing is unnecessary, and the subsequent screening can be completed in three years. If a co-test was completed and no HPV or abnormal cells were found, the following screening can be done in five years.

*Unsatisfactory Results*

[Unsatisfactory results](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results) mean that the lab could not make a determination of normal or abnormal with the sample provided. Unsatisfactory results could be because the sample taken needed more cells to test. Another reason for an unsatisfactory reading may be other tissue in the sample, like mucus or blood cells, making it difficult to read.

If you receive an unsatisfactory result, your physician will reschedule another pap smear or co-test in [two to four months](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results).

***Abnormal Findings***

An abnormal finding refers to the cells being tested/screened. The cells collected during a pap smear are most often taken from the lining of the cervix, which is made up of squamous cells. [Squamous cells](https://www.cancer.gov/publications/dictionaries/cancer-terms/def/squamous-cell) are flat-looking cells that line specific tissues of the body. Squamous cells line respiratory and digestive tissues, hollow organs like the stomach, cervix, vagina, anus, esophagus, and vulva. Therefore, all of these tissues can be susceptible to cancer. Abnormal changes in squamous cells can lead to pre-cancerous cells and abnormal cell growth.

There are several types of abnormal test results you can receive. Physicians use acronyms to shorten the length of the test results. These acronyms will be used in the test results when you receive them either in person or via mail. Typically, clinics will call you to explain the results and whether they are normal or abnormal. Clinics will tell you if further follow-up is needed and determine your expected next steps.

Understanding the acronyms may help reduce anxiety when you get your results. Depending on the results, it will help to know what to expect next.

*ASC-US (Atypical squamous cells of undetermined significance)*

Cell abnormalities can be caused by findings other than HPV. [ASC-US](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) indicates that the cells appeared abnormal, but the reason for the abnormal cells is unknown. Inflammation of the vaginal tissue and yeast infections are a couple of reasons that cell abnormalities are found. A physician will likely want you to return to collect another sample when the conditions have been cleared. If indicated by your physician, discuss with your healthcare provider to determine when to return for a repeat test.

*AGC (Atypical glandular cells)*

[Glandular cells](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) line the outer portion of the cervix and are mucus-producing cells. An [AGC](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) result may indicate that the glandular cells appear abnormal but do not necessarily indicate pre-cancerous cells or other more severe issues. Your physician will likely want you to schedule a follow-up appointment for further testing.

*LSIL (Low-grade squamous intraepithelial lesions)*

When squamous cells grow out of control or exhibit abnormal changes, they could lead to cancer if left untreated. [Low-grade](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) changes to the squamous cells mean that the changes are minor changes to the cells and cell lining. Your provider will want to continue to monitor the cell changes and may ask you to return for additional testing. Additional tests may include [colposcopy](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) and [biopsy](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17).

*ASC-H (Atypical squamous cells, cannot exclude high-grade squamous intraepithelial lesion)*

ASC-H results mean that the squamous cells show clear signs of abnormal changes. You will need to return to the clinic for further testing and colposcopy.

*HSIL (High-grade squamous intraepithelial lesions)*

HSIL means that the lining of the cervix is very clearly changing. HSIL cells can turn into cancerous cells if not treated immediately. Your physician will advise a colposcopy and further testing.

*AIS (Adenocarcinoma in situ)*

An [AIS](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) result indicates that the cells are not only abnormal, like the abnormal results we’ve discussed above, but the cells are growing. When the cells grow and multiply, they can likely spread to other tissues, making them cancerous. AIS cells can be determined to be pre-cancerous cells upon further testing. Your provider will most likely require a follow-up colposcopy.

*Cervical cancer cells (squamous cell carcinoma or adenocarcinoma)*

[Cervical cancer cells](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) are cells that have changed drastically and are starting to grow and possibly spread to other surrounding tissues. Your provider will order further testing to determine if the cancer has already spread. At this point, cancer treatments will most likely start based on what the physician finds.

Finding cervical cancer cells is rare in individuals who have attended regular screenings and check-ups, which is why HPV testing and pap smears are so important. If caught early, the abnormal cells can be biopsied, treated, and monitored before they become cancerous.

**Following up After an Abnormal Result**

Most abnormal tests require follow-up testing. Current [guidelines published by the ASCPP](https://www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results#_17) have been changed to base follow-up testing on your risk of developing cancer. Cancer risk is based on your previous history.

* The results of your last screenings.
* Treatments you have received in the past.
* Personal health factors, like age, may increase your risk of developing cervical cancer.

Once your cancer risk has been determined, your healthcare provider may decide whether you should be re-tested in one to three years or that further testing is needed. Your provider may advise you to receive a colposcopy and biopsy.

*Colposcopy*

As you might have noticed, a [colposcopy](https://www.acog.org/womens-health/faqs/colposcopy#:~:text=Colposcopy%20is%20a%20way%20of,seen%20by%20the%20eye%20alone.) is recommended for most abnormal results found on a pap smear or co-testing. A colposcopy is a more in-depth examination of your cervix and vagina using a magnifying device called a colposcope. Using a speculum, your provider will look for abnormal areas in your vagina, vulva, and cervix. A biopsy is often completed during the examination.

*Biopsy*

A biopsy is completed by taking a tissue sample from the abnormal area. The biopsied tissue is then sent to the lab for further review.

**Before Your Appointment**

There are a couple of things to keep in mind before going to your screening appointment. A few things could interfere with the exam and test results.

* Try to avoid sex before your exam. If you do have sex before you go, let your provider know.
* Avoid douching and using spermicides two or more days before your exam.
* Let your provider know you are on your period before the exam because screening exams can still be done.

**Key Takeaways**

* Regular screening is imperative to catching cancer and starting treatments early.
* If you are between the age of 21 and 29, it is recommended that you receive a pap smear every three years.
* If you are between the age of 30 and 65, you have three different testing options.
	+ HPV testing only.
	+ Pap smear only.
	+ Co-testing includes both HPV testing and a Pap smear.
* The [American Congress of Obstetricians and Gynecologists (ACOG)](https://www.acog.org/clinical/clinical-guidance/practice-advisory/articles/2021/04/updated-cervical-cancer-screening-guidelines) and the [Centers for Disease Control (CDC)](https://www.cdc.gov/cancer/cervical/basic_info/screening.htm) are excellent resources if you have further questions about current testing guidelines.

**References:**

*Cancer Stat Facts; Cervical Cancer.* National Cancer Institute, seer.cancer.gov/statfacts/html/ cervix.html

*Cervical Cancer Prevention-Cervical Screening: Science in Evolution.* National Library of Medicine. PubMed, www.ncbi.nlm.nih.gov/pmc/articles/PMC2762353/

*Cervical Cancer Screening.* National Cancer Institute, www.cancer.gov/types/cervical/screening

*Cervical Cancer: What Should I Know About Screening?* Centers for Disease Control and Prevention, www.cdc.gov/cancer/cervical/basic\_info/screening.htm

*Cervix.* National Cancer Institute. NCI Dictionary of Cancer Terms, www.cancer.gov/ publications/dictionaries/cancer-terms/def/cervix

*Colposcopy.* The American College of Obstetricians and Gynecologists, www.acog.org/womens-health/faqs/colposcopy#:~:text=Colposcopy%20is%20a%20way%20of,seen%20by%20the%20eye%20alone.

*HPV and Pap Test Results: Next Steps After an Abnormal Cervical Cancer Screening Test.* National Cancer Institute, www.cancer.gov/types/cervical/screening/abnormal-hpv-pap-test-results

*Key Statistics for Cervical Cancer.* American Cancer Society, https://www.cancer.org/cancer/ cervical-cancer/about/key-statistics.html

*Updated Cervical Cancer Screening Guidelines.* The American College of Obstetricians and Gynecologists*, www.acog.org/clinical/clinical-guidance/practiceadvisory/articles/2021/04 /updated-cervical-cancer-screening-guidelines*

*Squamous cell.* National Cancer Institute. NCI Dictionary of Cancer Terms, www.cancer.gov/ publications/dictionaries/cancer-terms/def/squamous-cell