TEST

Pap test

A Pap test checks cells from the cervix for changes that may lead to cervical cancer.

WHAT IT MEASURES
Abnormal changes in cells collected from the cervix

SAMPLE
Cells collected from the cervix

FASTING NEEDED?
No

HOW LONG IT TAKES
Usually a few minutes during a pelvic examination

RESULTS IN
Often one to three weeks; laboratory timing differs

USED FOR
Cervical cancer screening and follow-up of abnormal results

MAIN LIMITATION
Abnormal cells may be missed, especially with an inadequate sample

Overview

A Pap test collects cells from the cervix, the opening between the vagina and uterus. A laboratory examines the cells for abnormal changes that could become cervical cancer if they are not monitored or treated.

The test may also be called cervical cytology. It is often done during a pelvic examination, but the two are not the same. A pelvic examination checks reproductive organs by sight and touch. A Pap test specifically examines collected cervical cells.

A Pap test is also different from a human papillomavirus, or HPV, test. HPV is a common virus that causes nearly all cervical cancers. The HPV test looks for high-risk types of the virus, while the Pap test looks for cell changes. Depending on your age and local screening program, the tests may be used separately or together.

An abnormal Pap result does not mean you have cancer. Most abnormal results involve early cell changes that can be monitored, tested further, or treated before cancer develops.

Why the test is ordered

The main purpose of a Pap test is cervical cancer screening. Screening looks for changes before you have symptoms.

The test may also be ordered to:

A Pap test is not designed to screen for ovarian, uterine, vaginal, or vulvar cancer. It also does not reliably explain symptoms such as abnormal bleeding or pelvic pain. Those symptoms may require an examination, imaging, biopsy, or other tests.

- Follow up a previous abnormal Pap or HPV result
- Monitor cervical cells after treatment for a precancerous change
- Help assess visible changes on the cervix
- Support follow-up after certain cervical or gynecologic cancers

Who should have the test

Cervical screening is relevant to people who have a cervix, including women, transgender men, and some nonbinary people. Having received the HPV vaccine does not remove the need for recommended screening.

The age to begin screening, the interval between tests, and the preferred type of test vary by country and guideline. In the United States, some guidance begins Pap testing at age 21, while American Cancer Society guidance prefers primary HPV testing beginning at age 25. Available testing also differs between health systems.

Your screening plan may be different if you:

People above the usual screening age may be able to stop after enough reassuring previous results, provided they have no important risk factors. Do not assume screening is unnecessary after a hysterectomy or because you are no longer sexually active. The reason for surgery, whether the cervix remains, and your previous results matter.

- Previously had high-grade cervical cell changes or cervical cancer
- Have HIV or another condition that weakens the immune system
- Take medicines that suppress the immune system
- Were exposed before birth to diethylstilbestrol, known as DES
- Had your cervix removed during a hysterectomy

How to prepare

You do not need to fast. You can eat, drink water or coffee, and take your usual oral medicines unless you have separate instructions for another procedure.

For about two days beforehand, you may be asked to avoid:

These can remove, cover, or alter cervical cells. Do not stop a prescribed vaginal medicine without asking the clinician who prescribed it. If you did not follow the preparation instructions, tell the person collecting the sample; the test may still be useful.

If possible, arrange the test when you are not having heavy menstrual bleeding. Light bleeding does not always prevent testing. If your period starts unexpectedly, contact the clinic or attend as planned and ask whether the sample can be taken.

Tell the clinician if you may be pregnant, recently gave birth, have gone through menopause, or have had cervical surgery or treatment.

- Vaginal sex
- Tampons
- Douching
- Vaginal creams, medicines, or lubricants

What happens during the test

You usually undress from the waist down and lie on an examination table with your knees bent. A clinician gently places a speculum into the vagina. This smooth instrument holds the vaginal walls apart so the cervix can be seen.

A small brush or spatula is rotated over the cervix to collect cells. The sample is placed in a container and sent to a laboratory.

Collection usually takes only a few minutes. You may feel pressure, brief cramping, or discomfort. Tell the clinician if it hurts or if you need them to pause. A smaller speculum, a different position, more lubricant, or taking the procedure slowly may help.

Understanding your results

Pap results are descriptive rather than a simple positive or negative number. Laboratories may use slightly different wording.

Common result categories include:

An unsatisfactory result usually means the test needs to be repeated. It does not mean that abnormal cells were found.

Interpretation depends on your Pap result, HPV result, age, previous results, pregnancy or menopause status, immune health, medicines, and clinical history. Laboratory methods and reporting systems also differ. There is no single universal "normal range" for this test.

- Negative for abnormal cells: No concerning cell changes were seen
- Unsatisfactory: There were too few readable cells or the sample was obscured
- ASC-US: Some squamous cells look unusual, but the cause is uncertain
- LSIL: Mild changes, often associated with HPV, were seen
- HSIL: More significant changes that have a greater chance of becoming cancer were seen
- AGC: Glandular cells look abnormal and need further assessment

What affects the results

Several factors can change what is collected or how easily the laboratory can read it, even when the laboratory has worked correctly.

Blood from menstruation or other vaginal bleeding can obscure cervical cells. Vaginal medicines, creams, lubricants, douching, tampons, and recent vaginal sex may reduce the quality of the sample.

Inflammation from an infection can make cells appear reactive or unusual. This does not necessarily represent a precancerous change.

Pregnancy, recent childbirth, breastfeeding, and menopause can alter cervical cells because hormone levels change. Recent cervical procedures, radiation treatment, or surgery can also affect their appearance.

A poorly positioned brush or difficulty seeing the cervix may result in too few cells. Previous hysterectomy or cervical treatment can change where cells need to be collected.

Medicines that affect hormones or suppress the immune system may influence interpretation or follow-up. Age, reproductive anatomy, pregnancy status, previous results, and the reason for testing all provide necessary context.

Accuracy and limitations

A Pap test can miss abnormal cells. This may happen when the changed area is small, cells are not collected from the correct place, or blood and inflammation hide them. Laboratory interpretation can also occasionally miss subtle changes. Regular screening lowers this risk because a change missed once may be found later.

The test can also report abnormal-looking cells when no important precancer is present. Temporary HPV infection, inflammation, healing, pregnancy-related changes, or menopause can make cells look unusual. Follow-up testing helps separate temporary or harmless changes from changes needing treatment.

HPV testing generally finds more cervical precancers than Pap testing alone. However, HPV infections are often temporary, particularly in younger people, so an HPV result does not by itself diagnose precancer or cancer.

Neither test confirms cervical cancer. If a concerning area needs diagnosis, colposcopy provides a magnified view of the cervix, and a biopsy removes a small tissue sample for examination.

A reassuring Pap result does not rule out every cause of bleeding, discharge, or pelvic pain. Symptoms still need assessment rather than waiting for the next screening test.

Risks and complications

A Pap test does not use radiation and does not affect fertility. Brief discomfort, mild cramping, or light spotting can occur after the sample is collected.

Emotional discomfort or anxiety is also possible, especially after previous painful examinations or trauma. You can ask what will happen before starting, request a chaperone, and ask to stop at any time.

What happens next

If the result is reassuring, you will usually return to routine screening at the interval recommended for your age, test type, previous results, and local program.

An abnormal result may lead to repeat Pap or HPV testing, HPV typing, or colposcopy. More concerning changes may require a biopsy. Follow-up is important, but most abnormal screening results are not emergencies.

Contact your healthcare service routinely if you have not received a result within the expected time or do not understand the follow-up plan.

Arrange a prompt medical assessment for bleeding after sex, bleeding after menopause, persistent unusual discharge, or ongoing pelvic pain, even if your Pap result was normal. Seek urgent care for very heavy bleeding, fainting, severe pain, or fever. These symptoms are not expected from a routine Pap test.

Common questions

Can I drink coffee before a Pap test?

Yes. Coffee, food, and other drinks do not affect cervical cells, and fasting is not needed.

Does the time of day matter?

No. A Pap test can be collected at any time the clinic offers it. Menstrual bleeding and recent vaginal products matter more than the hour of the day.

Can I exercise beforehand?

Yes. Ordinary exercise does not affect Pap results. You may want time to change clothes or shower for comfort, but this is not medically required.

Can I have a Pap test during my period?

Sometimes. Light bleeding may not prevent testing, but heavy bleeding can obscure the cells. Ask the clinic whether to attend or reschedule.

Can I have the test while pregnant?

A Pap test can be performed during pregnancy when it is due or clinically needed. Pregnancy-related cell changes and the timing of follow-up are considered when interpreting the result.

Why do I need another test if my result is abnormal?

A Pap test is a screening test, not a diagnosis. Repeat testing, HPV testing, colposcopy, or biopsy may be needed to show whether the change is temporary or requires treatment.

Sources

- National Cancer Institute. HPV and Pap Test Results: Next Steps after an Abnormal Test
- National Cancer Institute. Cervical Cancer Screening
- American College of Obstetricians and Gynecologists. Updated Cervical Cancer Screening Guidelines, 2021

- US Preventive Services Task Force. Cervical Cancer: Screening, 2018
- Fontham ETH, Wolf AMD, Church TR, et al. Cervical cancer screening for individuals at average risk: 2020 guideline update from the American Cancer Society. CA: A Cancer Journal for Clinicians . 2020;70:321-346
- Perkins RB, Guido RS, Castle PE, et al. 2019 ASCCP Risk-Based Management Consensus Guidelines for Abnormal Cervical Cancer Screening Tests and Cancer Precursors. Journal of Lower Genital Tract Disease . 2020;24:102-131