PROCEDURE

Cone biopsy

A cone biopsy removes a cone-shaped piece of the cervix for testing and treatment.

PURPOSE
Diagnose or remove abnormal cells from the cervix

PROCEDURE TYPE
Both; surgical removal of cone-shaped cervical tissue

WHERE IT IS DONE
Outpatient clinic or operating theatre

ANAESTHESIA
Local or general, based on technique

HOW LONG IT TAKES
About 15 to 30 minutes

PREPARATION
Medication review and fasting if receiving general anaesthesia

RECOVERY
Same day; no driving after sedation or general anaesthesia

MAIN RISKS
Bleeding, infection, cervical narrowing, future pregnancy complications

RESULTS
Several days to a few weeks after pathology review

Overview

A cone biopsy, also called cervical conization, removes a cone-shaped piece of tissue from the cervix. The cervix is the lower part of the uterus that opens into the vagina.

The removed tissue includes the surface of the cervix and part of the cervical canal. A laboratory examines it under a microscope. This can show whether abnormal cells are precancerous or cancerous and whether they were completely removed.

A cone biopsy can be performed with a surgical knife, an electrical wire loop, or, less commonly, a laser. A procedure using a knife is often called a cold knife cone biopsy . Electrical loop procedures may be called LEEP or LLETZ .

Cone biopsy can be both a diagnostic procedure and a treatment. It may provide a clearer diagnosis than a small cervical biopsy while removing the abnormal area at the same time.

Why the procedure is performed

You may be offered a cone biopsy after a cervical screening test, HPV test, colposcopy, or small biopsy has found abnormal cells. A colposcopy is an examination of the cervix using a magnifying instrument.

The procedure may be used to:

The choice of procedure depends on the type and location of the abnormal cells, earlier results, your pregnancy plans, and whether there is concern about invasive cancer.

- Remove high-grade precancerous cells
- Check for cancer when earlier tests do not give a clear answer
- Examine abnormal cells extending into the cervical canal
- Assess possible very early cervical cancer
- Treat certain glandular cell changes, including adenocarcinoma in situ
- Check whether abnormal tissue reaches the edge of the removed sample

Who should and should not have it

A cone biopsy may be appropriate when the expected benefit of getting a definite diagnosis or removing abnormal tissue is greater than the procedure's risks. It is not needed for every abnormal cervical screening result. Some low-risk changes can be monitored because they may clear without treatment.

The procedure may be delayed during pregnancy unless there is a strong concern about cancer. Removing cervical tissue during pregnancy can cause bleeding and may affect the pregnancy. When possible, assessment or treatment is planned for a safer time.

It may also be delayed if you have an active cervical or pelvic infection, uncontrolled bleeding problems, or a medical condition that makes anaesthesia unsafe until that condition is addressed.

Blood-thinning medicines can increase bleeding risk, but this does not automatically rule out the procedure. Your healthcare team will decide whether any medicine needs to be paused or adjusted. Do not stop a prescribed blood thinner like warfarin or apixaban on your own.

Tell your team if you are or could be pregnant, have a bleeding disorder, have previously had cervical treatment, or hope to become pregnant in the future. The amount of cervix removed can affect future pregnancy risks.

How to prepare

Follow the treating facility's instructions first, even if they differ from general information here. Preparation depends on the technique and type of anaesthesia.

If you will have general anaesthesia, you will usually need to stop eating and drinking beforehand. Your facility will tell you the exact times. If the procedure uses local anaesthetic while you are awake, fasting may not be required.

Give your team a complete list of medicines, vitamins, and supplements. Ask specifically about anticoagulants, antiplatelet medicines, and medicines for diabetes. Only change them under medical guidance.

Tell the facility if you develop an infection, fever, or unexpected heavy bleeding before the appointment. They may need to reassess the timing.

Arrange for someone to take you home if you will receive sedation or general anaesthesia. Bring a sanitary pad because light bleeding or discharge is expected afterward.

What happens during the procedure

You will lie on an examination or operating table with your legs supported. A speculum is placed in the vagina to hold it open so the cervix can be seen. This is the same type of instrument used during cervical screening.

Your experience then depends on the technique:

The clinician removes a cone-shaped sample that includes the abnormal area and part of the cervical canal. The size and depth are chosen to obtain enough tissue while preserving as much healthy cervix as possible.

Bleeding may be controlled with heat, stitches, pressure, or a medication applied to the cervix. The tissue is labelled and sent to a pathology laboratory for examination.

Afterward, you are monitored until the anaesthetic has worn off and your condition is stable. Most people go home the same day.

- With local anaesthesia, medicine is injected around the cervix to numb it
- With general anaesthesia, you are asleep and unaware of the procedure
- With a cold knife cone biopsy, a scalpel removes the tissue
- With LEEP or LLETZ, a thin wire loop carrying electrical current removes it

Recovery and what to expect afterward

Pain: Mild to moderate cramps, similar to menstrual cramps, are common for a few days. Use the pain medicine recommended by your treating facility. Pain that is severe, worsening, or not controlled by the recommended medicine needs medical advice.

Eating: You can usually return to your normal diet when you feel ready. After general anaesthesia, starting with light food may help if you feel nauseated.

Activity: Light bleeding or a watery, brown, or dark discharge can continue while the cervix heals. Use pads rather than tampons. Avoid vaginal sex, tampons, douching, swimming, and strenuous exercise for the period given in your discharge instructions, often several weeks. These restrictions help reduce bleeding and infection risk.

Driving: Do not drive on the day of sedation or general anaesthesia. Follow the facility's instructions about when you may restart. You should also avoid driving while taking medicine that makes you sleepy or if pain limits safe movement.

Work: Many people return to desk-based work within a few days. You may need longer if your work involves heavy lifting, prolonged standing, or strenuous activity.

Risks and possible complications

Cone biopsy is generally safe, but it involves removing tissue and can cause complications.

Bleeding may occur immediately or during healing, sometimes several days later when treated tissue separates from the cervix. A small number of people need medicine, packing, another procedure, or, rarely, a blood transfusion to control it.

An infection can develop in the cervix or uterus. Possible signs include fever, worsening pelvic pain, or discharge with a strong unpleasant smell.

Scar tissue can narrow the cervical opening. This is called cervical stenosis . It may make menstrual flow, future cervical screening, or fertility treatment more difficult.

Removing cervical tissue may increase the chance of premature birth in a future pregnancy. The risk is greater when a deeper or larger amount is removed or when excisional treatment is repeated. Tell a future pregnancy care team about the procedure so they can decide whether additional monitoring is appropriate.

Anaesthesia can cause nausea, allergic reactions, breathing problems, or other complications. Your anaesthesia team will discuss risks that apply to the planned method and your health.

Results and follow up

A pathologist examines the tissue to identify the type and severity of any abnormal cells. The report also states whether cancer is present and whether abnormal cells extend to the sample's edges, called the margins .

Results commonly take several days to a few weeks. Your facility should tell you how and when they will contact you. Ask whom to call if you have not received the result within the expected time.

Clear margins mean no abnormal cells were seen at the cut edge, but follow-up testing is still important. Abnormal cells at a margin do not always mean another procedure is immediately needed. Follow-up may involve HPV testing, cervical screening, colposcopy, another excision, or other treatment based on the full pathology result.

Alternatives

The appropriate alternative depends on why cone biopsy was recommended.

Repeat HPV or cervical screening avoids surgery and may be reasonable for lower-risk changes. It takes longer to clarify what is happening and may allow important abnormalities to remain undiagnosed between tests.

Colposcopy with punch biopsies removes smaller samples and usually requires less recovery. It may miss changes higher in the cervical canal and does not remove a larger abnormal area.

LEEP or LLETZ may be an alternative to a cold knife cone. It can often be performed with local anaesthesia and may cause less bleeding. Heat from the electrical loop can make the sample edges harder for the pathologist to assess in some cases.

Continued observation with colposcopy may preserve more cervical tissue when immediate treatment is not needed. It requires reliable follow-up and does not provide the same large tissue sample.

Hysterectomy , which removes the uterus and cervix, may be considered for selected recurrent or glandular abnormalities when future pregnancy is not wanted. It is major surgery with a longer recovery and is not the usual first treatment for most precancerous changes.

If invasive cancer is found or strongly suspected, cancer surgery, radiation therapy, or other specialist treatment may be more appropriate than cone biopsy alone.

When to call your healthcare team

Contact your healthcare team promptly for:

These are not the same as routine light bleeding, mild cramping, or dark discharge during healing.

Seek emergency care for severe uncontrolled bleeding, fainting, severe weakness, chest pain, difficulty breathing, or signs of a serious allergic reaction.

- Bleeding heavier than your usual period or soaking a pad in an hour
- Large blood clots or bleeding that is increasing
- Fever or chills
- Worsening pelvic or abdominal pain
- Discharge with a strong unpleasant smell
- Trouble passing urine
- Vomiting that prevents you from drinking fluids

Common questions

Will I be asleep?

You may be. Cold knife cone biopsy is commonly performed under general anaesthesia. Some loop procedures use local anaesthetic, so you remain awake but the cervix is numbed.

Can I drive home?

Not after sedation or general anaesthesia. Arrange for a responsible adult to take you home. Even with local anaesthesia, follow your facility's driving instructions.

How painful is it?

Anaesthesia should prevent sharp pain during the procedure. You may feel pressure if you are awake. Menstrual-like cramps are common afterward and usually improve over several days.

When will I know the results?

Pathology results usually take several days to a few weeks. Your healthcare team should explain the findings and the recommended follow-up.

Can I still become pregnant afterward?

Many people become pregnant after a cone biopsy. However, removing cervical tissue can increase the risk of premature birth, particularly after a deep or repeated excision. Discuss future pregnancy plans before consenting.

Will the procedure remove all the abnormal cells?

It often does, but the pathology report must show what was removed and whether abnormal cells reach the margins. Follow-up testing remains necessary even when the margins are clear.

Sources

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