PROCEDURE

Upper airway biopsy

An upper airway biopsy removes a small tissue sample from the nose, throat, or voice box for laboratory testing.

PURPOSE
Sample abnormal upper-airway tissue for laboratory diagnosis

PROCEDURE TYPE
Diagnostic, using an endoscope or direct surgical approach

WHERE IT IS DONE
Outpatient clinic, endoscopy suite, or operating theatre

ANAESTHESIA
Local or general; sedation may be added

HOW LONG IT TAKES
Usually 15 to 60 minutes

PREPARATION
Often fasting and review of blood-thinning medicines

RECOVERY
Usually same day; no driving after sedation or general anaesthesia

MAIN RISKS
Bleeding, infection, breathing difficulty, dental or tissue injury

RESULTS
Appearance discussed promptly; pathology usually takes several days

Overview

An upper airway biopsy removes a small piece of tissue from the nose, the area behind the nose, the throat, or the voice box. The tissue is examined by a pathologist, a doctor who diagnoses conditions by studying cells and tissue.

The procedure may be done through a thin, flexible endoscope passed through your nose. An endoscope is a tube with a light and camera. Some biopsies require a rigid instrument passed through your mouth while you are under general anaesthesia.

A biopsy can identify inflammation, infection, non-cancerous growths, cell changes, or cancer. It is more reliable than appearance or imaging alone, but an inadequate sample may need to be repeated.

Why the procedure is performed

Your healthcare team may recommend a biopsy after an examination or scan shows an area that needs a definite diagnosis. Examples include an ulcer, swelling, lump, unusual patch, or abnormal vocal cord.

It may also be offered when symptoms such as ongoing hoarseness, difficulty swallowing, unexplained bleeding, or persistent throat discomfort have not been explained by other tests. These symptoms have many possible causes and do not by themselves mean that cancer is present.

The result helps your team decide whether you need treatment, monitoring, more tests, or no further action.

Who should and should not have it

A biopsy may be appropriate when the result is likely to change your care and the abnormal area can be sampled safely. The method chosen reflects its location, your general health, and whether you can comfortably tolerate an office examination.

The procedure may be delayed or changed if you have:

Pregnancy does not automatically rule out a biopsy, but its timing and anaesthesia need careful planning. Tell the team if you may be pregnant.

If there is concern about a narrowed airway, the safest option may be a biopsy in an operating theatre where specialist airway equipment is available.

- An uncontrolled bleeding problem or medicines that make bleeding unsafe
- A current illness that makes sedation or general anaesthesia less safe
- Significant airway narrowing that requires a planned airway procedure
- A severe heart or lung condition that needs assessment first
- An active respiratory infection before an elective general anaesthetic

How to prepare

Your treating facility's own instructions take priority because preparation differs between office biopsy, sedation, and general anaesthesia.

You may be told not to eat or drink for several hours. Follow the stated times exactly. An office

biopsy using only local anaesthetic may require little or no fasting.

Give the team a complete list of your medicines and supplements. Blood-thinning medicines can increase bleeding, but stopping them may create other risks. Do not stop aspirin, warfarin, clopidogrel, apixaban, or another blood thinner unless the clinician responsible for the procedure gives you a specific plan.

Tell the facility about allergies, loose teeth, dentures, previous anaesthetic problems, bleeding disorders, and heart or lung conditions. Arrange for an adult to take you home and stay with you if you will receive sedation or general anaesthesia.

What happens during the procedure

For an office biopsy, a numbing and sometimes decongestant spray is placed in your nose and throat. A flexible endoscope is guided through one nostril. You may feel pressure, watering of the eyes, an urge to cough, or brief gagging. Small forceps passed through the scope remove one or more samples.

For a biopsy under general anaesthesia, you are asleep. The surgeon usually passes a rigid laryngoscope through your mouth to see the throat and voice box. A guard may be placed over your teeth. Tissue is removed with small instruments, and bleeding is controlled before the instruments are withdrawn.

The procedure usually leaves no external cut. The samples are labelled and sent to a pathology laboratory. If the abnormal area is small, the surgeon may remove all of it, although this is not always possible or intended.

Recovery and what to expect afterward

Mild throat pain, hoarseness, nasal soreness, or discomfort when swallowing is common. Your team may suggest an appropriate non-prescription pain medicine. Use only medicines that are safe for you and follow the discharge instructions.

Wait until throat numbness has worn off before eating or drinking, so you can swallow safely. Start with cool drinks and soft foods if your throat is sore. Unless instructed otherwise, return gradually to your usual diet.

Rest for the remainder of the day after sedation or general anaesthesia. Avoid strenuous activity, heavy lifting, forceful coughing, or frequent throat clearing for the period your team specifies. Follow any voice-rest instructions if your vocal cord was sampled.

Do not drive, cycle, operate machinery, drink alcohol, or make important decisions for at least the period stated after sedation or general anaesthesia. You will usually need someone to take you home.

Many people return to desk work within one or two days. A larger biopsy, a physically demanding job, or heavy voice use may require more time.

Risks and possible complications

Possible risks include:

Minor blood-streaked saliva can occur, but ongoing or increasing bleeding is not expected. Your individual risks are influenced by the biopsy site, sample size, medicines, and anaesthetic method.

- Bleeding from the biopsy site or a nosebleed
- Infection
- Swelling or bleeding that affects breathing
- Temporary or, less often, lasting voice change
- Injury to the lips, tongue, teeth, gums, or nearby tissue
- A reaction to local anaesthetic, sedation, or general anaesthesia
- An inadequate or non-representative sample requiring another biopsy

Results and follow up

The clinician may explain what the area looked like immediately after the procedure. Appearance alone cannot provide the final diagnosis.

Pathology results usually take several days. They may take longer if special stains, infection tests, or expert review are needed. Ask before leaving how and when you will receive the result.

Routine follow-up may include discussing the pathology report, checking healing, and planning observation, treatment, imaging, or another sample. A result described as inconclusive or insufficient does not necessarily mean something serious; it means the tissue did not answer the clinical question.

Alternatives

The realistic alternatives depend on why the biopsy was proposed.

If cancer or another condition requiring specific treatment is suspected, there may be no equally reliable substitute for obtaining tissue. Ask what information would be lost by choosing an alternative.

- Observation and repeat examination: avoids an immediate procedure but delays a definite answer and may allow an important condition to change
- Imaging, such as CT or MRI: shows the size and location of an abnormal area but usually cannot identify its cell type
- Needle biopsy of a nearby neck lump: is less invasive and may diagnose an enlarged lymph node, but may not sample the original airway lesion
- Removing the whole abnormal area: may provide diagnosis and treatment together, but is a larger procedure and may affect nearby structures
- No further testing: avoids procedure-related risks but leaves uncertainty and may delay treatment

When to call your healthcare team

Contact your healthcare team promptly for increasing throat pain, fever, worsening swelling, persistent vomiting, difficulty eating or drinking, an unpleasant discharge, or bleeding that is more than the amount described in your discharge instructions.

Seek emergency medical help for:

Questions about results, mild expected soreness, activity, or returning to work are generally suitable for routine follow-up.

- New or worsening difficulty breathing
- Heavy or continuous bleeding
- Coughing or vomiting a large amount of blood
- Fainting, severe weakness, or bluish lips
- Rapidly increasing neck or throat swelling

Common questions

Will I be asleep?

You may be awake with local anaesthetic for a flexible office biopsy. A rigid biopsy in an operating theatre is usually done under general anaesthesia, so you are asleep.

Can I drive home?

Not after sedation or general anaesthesia. Arrange an adult escort. Driving after local anaesthetic alone may be possible, but follow the facility's instructions.

How painful is it?

An office biopsy may cause pressure, coughing, or gagging despite numbing spray. After either method, mild soreness or hoarseness is common. Tell the team if pain is worsening rather than improving.

When will I know the result?

The clinician may discuss the examination findings promptly, but the tissue diagnosis usually takes several days. Special laboratory tests can take longer.

Will the biopsy affect my voice?

Temporary hoarseness is common if the voice box or vocal cord is sampled. Lasting voice change is less common and is influenced by the biopsy's location and size.

Could I need another biopsy?

Yes. Another procedure may be recommended if the sample is too small, does not contain the abnormal tissue, or gives an uncertain result.

Sources

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