PROCEDURE

Bronchoscopy

Bronchoscopy uses a thin viewing tube to examine, sample, or treat the airways

PURPOSE
Examine airways, collect samples, or remove blockages

PROCEDURE TYPE
Diagnostic and therapeutic; minimally invasive endoscopic procedure

WHERE IT IS DONE
Endoscopy suite, operating theatre, outpatient clinic, or bedside

ANAESTHESIA
Local anaesthetic with sedation, or general anaesthesia

HOW LONG IT TAKES
Usually 30 to 60 minutes

PREPARATION
Fasting; medication review, especially blood thinners and diabetes medicines

RECOVERY
Usually same day; no driving after sedation

MAIN RISKS
Bleeding, infection, collapsed lung, breathing or heart problems

RESULTS
Visual findings immediately; laboratory and biopsy results in several days

Overview

Bronchoscopy is a procedure used to look inside your windpipe and the airways leading into your lungs. A bronchoscope is a tube containing a light and camera.

Most procedures use a thin, flexible tube passed through the nose or mouth. A wider, straight rigid bronchoscope may be used under general anaesthesia to remove a large object, control significant bleeding, or perform other treatments.

The clinician can collect fluid, mucus, cells, or tissue. Bronchoscopy can also clear mucus, remove an inhaled object, open a narrowed airway, or place an airway stent.

Why the procedure is performed

Bronchoscopy may be recommended when symptoms, imaging, or other tests suggest that your lungs or airways need closer examination.

Reasons include:

The findings may confirm a diagnosis, rule out conditions, or guide further care.

- Investigating an unexplained cough, airway bleeding, or abnormal chest scan
- Looking for infection, inflammation, lung disease, or cancer
- Taking a biopsy or washing part of the lung to collect cells and germs
- Removing thick mucus or an inhaled object
- Finding and treating airway bleeding
- Opening a narrowed airway or placing a stent
- Checking the airways after a lung transplant or other treatment

Who should and should not have it

Bronchoscopy may be appropriate when the required information or treatment cannot be obtained as safely or effectively another way.

It may be delayed or avoided if the immediate risks are too high, such as severely low oxygen that cannot be supported, unstable heart or blood pressure problems, or a serious uncontrolled heart rhythm. A biopsy may be postponed if you have a major bleeding risk, including a very low platelet count or the effects of certain blood-thinning medicines.

Pregnancy, a respiratory infection, medicine allergies, or previous sedation problems do not always prevent bronchoscopy, but may change its timing, location, anaesthesia, or monitoring. If one type of sedation is unsafe, another approach or test may be considered.

How to prepare

Follow your treating facility's instructions because preparation depends on the planned procedure and anaesthesia.

You will usually need to stop eating and drinking for several hours beforehand. This reduces the risk of stomach contents entering your lungs while your throat is numb or you are sedated.

Provide a complete list of medicines, supplements, and allergies. Tell the team about:

Do not stop or change prescribed medicine unless your treating team tells you to.

If you will receive sedation or general anaesthesia, arrange for a responsible adult to take you home. Follow instructions about whether someone must stay with you afterward.

- Blood thinners and antiplatelet medicines
- Insulin or other diabetes medicines
- Previous reactions to anaesthesia
- Possible pregnancy, loose teeth, or home oxygen use
- A recent fever, new chest symptoms, or other illness

What happens during the procedure

The team confirms your identity, procedure, medicines, and consent. Equipment monitors your oxygen level, heart rate, and blood pressure, and you may receive extra oxygen.

For flexible bronchoscopy, local anaesthetic numbs your nose and throat and reduces coughing. Sedation usually makes you relaxed and sleepy, although you may not be fully unconscious.

The bronchoscope passes through your nose or mouth, between your vocal cords, and into the airways. You can breathe around it. You may feel pressure or need to cough, but should not feel sharp pain.

The clinician may suction mucus, take photographs, collect washings, or remove small tissue samples. Imaging may guide deeper biopsies.

Rigid bronchoscopy is performed under general anaesthesia and is used when a larger working channel or greater airway control is needed.

Recovery and what to expect afterward

A sore throat, hoarse voice, cough, or mild chest discomfort is common for a short time. After a biopsy, you may see small streaks of blood in your mucus. Follow your discharge instructions about how much is expected.

Do not eat or drink until the throat numbness has worn off and you can swallow normally. The team may first ask you to sip water.

Rest for the remainder of the day and avoid strenuous activity for as long as advised, especially after a biopsy.

After sedation or general anaesthesia, do not drive, cycle, operate machinery, drink alcohol, or

make important decisions. Arrange transport home and follow the facility's restriction period.

Many people return to desk-based work the next day. Recovery may take longer after general anaesthesia, extensive treatment, or if your work is physical.

Risks and possible complications

Your individual risk depends on your heart and lung health and whether tissue is removed. Possible complications include:

A pneumothorax occurs when air leaks between the lung and chest wall. A small leak may need observation; a larger one may require a tube to remove the air.

Serious complications are uncommon, but your team should explain the risks relevant to your procedure.

- Bleeding, particularly after a biopsy or treatment
- Infection, including pneumonia
- A temporary drop in oxygen
- Airway narrowing, coughing, or breathing difficulty
- Abnormal heart rhythm or blood pressure changes
- A reaction to anaesthetic or sedation
- Aspiration of stomach contents
- Pneumothorax, or collapsed lung, after some deep biopsies

Results and follow up

The clinician can often describe the appearance of your airways shortly afterward. Because sedation may affect memory, written instructions or having another person present can help.

Biopsy and cell results often take several days. Bacterial cultures may also take days, while some fungal or tuberculosis cultures take several weeks. Special molecular or genetic tests may take longer.

Ask when and how you will receive results, whether follow-up is arranged, and whom to contact if results do not arrive as expected.

Alternatives

Alternatives depend on why bronchoscopy has been offered:

An alternative may provide less information, delay diagnosis, or involve different risks.

- Chest X-ray or CT scan: Shows lung structure but cannot directly inspect the airway or usually provide tissue
- Sputum testing: Easier, but may miss infection or abnormal cells deeper in the lung
- CT-guided needle biopsy: Samples an abnormality through the chest wall but cannot inspect or treat airways and may cause a collapsed lung
- Surgical biopsy: Provides a larger sample but requires an operation and longer recovery
- Observation with repeat imaging: Avoids an immediate procedure but delays diagnosis
- Other treatments: Medicines, chest physiotherapy, or surgery may sometimes replace therapeutic bronchoscopy

When to call your healthcare team

Contact the bronchoscopy service for routine questions about medicines, mild throat discomfort, work, diet, or results.

Seek urgent medical advice if you develop:

Call emergency services for severe difficulty breathing, fainting, blue or grey lips, severe chest pain, or coughing up a large amount of blood. Do not drive yourself in an emergency.

- Increasing shortness of breath
- New or worsening chest pain
- Fever or chills
- Increasing blood in your mucus
- Persistent vomiting or difficulty swallowing
- Symptoms that worsen instead of settling

Common questions

Will I be asleep?

Flexible bronchoscopy usually uses throat-numbing medicine and sedation, so you may be

awake but sleepy. Rigid and some complex procedures use general anaesthesia.

Can I drive home afterward?

Not after sedation or general anaesthesia. Arrange transport and follow instructions about when you may drive again.

How painful is bronchoscopy?

Numbing medicine should prevent sharp pain. You may feel pressure, coughing, or an urge to clear your throat. Mild soreness can occur afterward.

Can I breathe with the tube in place?

Yes. The tube does not completely block your airway. Your oxygen is monitored throughout.

When will I know the results?

Visual findings may be available shortly afterward. Biopsy, cell, and culture results take several days or longer.

Can I eat after bronchoscopy?

Wait until the numbness has completely worn off and your team confirms that you can swallow safely.

Sources

- American Thoracic Society. Flexible Bronchoscopy: Patient Education Series
- MedlinePlus. Bronchoscopy and Bronchoalveolar Lavage
- NHS. Bronchoscopy
- British Thoracic Society. Guideline for Diagnostic Flexible Bronchoscopy in Adults
- Merck Manual Professional Edition. Bronchoscopy