PROCEDURE

Tracheostomy

A tracheostomy creates an opening in the neck for a breathing tube.

PURPOSE
Provide a secure airway and support breathing

PROCEDURE TYPE
Therapeutic; surgical or bedside minimally invasive placement

WHERE IT IS DONE
Operating theatre or intensive care bedside

ANAESTHESIA
General, or local anaesthesia with deep sedation

HOW LONG IT TAKES
About 20-60 minutes

PREPARATION
Fasting, medication review, blood tests, and consent

RECOVERY
Usually inpatient; no driving until medically cleared

MAIN RISKS
Bleeding, infection, tube blockage, or displacement

RESULTS
Airway access confirmed immediately

Overview

A tracheostomy is an opening made through the front of your neck into your windpipe, also called the trachea. A curved breathing tube is placed through the opening. The opening itself is called a tracheostoma or stoma.

The tube lets air enter the lungs without passing through the nose, mouth, and upper throat. It may connect to a ventilator, which is a machine that supports breathing. It can also make it easier to remove mucus from the lungs.

A tracheostomy may be temporary or permanent. Some people need it for days or weeks while they recover. Others need long-term airway support because of an ongoing medical condition.

There are two main techniques. An open surgical tracheostomy is performed through a small neck incision. A percutaneous tracheostomy uses a guidewire and dilators to widen the

opening, usually at the bedside in an intensive care unit.

Why the procedure is performed

A tracheostomy may be recommended when you cannot breathe safely through your usual airway or are expected to need prolonged breathing support.

Reasons include:

Compared with a breathing tube through the mouth, a tracheostomy can be more comfortable when ventilation is needed for longer. It may allow less sedation, easier mouth care, and a gradual reduction in ventilator support. These possible benefits must be weighed against the risks of creating and caring for the opening.

- Long-term ventilation after serious illness, injury, or surgery
- Blockage or narrowing of the upper airway
- Weak breathing muscles caused by a neurological or muscle condition
- Difficulty coughing up mucus or other airway secretions
- Major surgery involving the mouth, throat, or neck
- Severe injury to the face, throat, or upper airway

Who should and should not have it

A tracheostomy may be suitable if it is likely to provide safer breathing, help with ventilation, or improve mucus clearance. The healthcare team should discuss whether the expected benefit fits your condition, recovery prospects, and care goals.

It may not be the right choice when ventilation is expected to be brief or when another airway treatment can work safely. It may also be inappropriate if it would not support your goals or improve the outcome that matters to you.

The procedure may be delayed, or the surgical technique changed, when there is:

Percutaneous bedside placement is not suitable for everyone. Open surgery may offer better visibility when the anatomy is difficult, bleeding risk is higher, or the tracheostomy is being performed in a child.

In an emergency, there may be limited time for discussion. When time allows, you or your decision-maker should receive an explanation of the likely benefits, burdens, alternatives, and possibility of long-term dependence.

- Uncontrolled bleeding or a serious blood-clotting problem
- Infection or major injury at the planned neck site
- Unstable breathing or circulation requiring immediate treatment
- Neck anatomy that makes bedside placement unsafe
- An enlarged thyroid gland, neck mass, or previous neck surgery

How to prepare

Follow the treating facility's instructions, because its own instructions take priority. Preparation differs between a planned operating-theatre procedure and a bedside procedure during critical illness.

You may be asked not to eat or drink for several hours. Tell the team about all medicines and supplements you take, particularly blood thinners and medicines for diabetes. Do not stop a prescribed blood thinner like warfarin or apixaban unless the treating team gives you a specific plan.

Blood tests may check your blood count and clotting. Imaging or a camera examination of the airway may be needed if your neck anatomy or the cause of airway blockage requires closer assessment.

Before a planned procedure, the team should discuss anaesthesia, tube care, communication, eating, and how long the tracheostomy may be needed. If possible, ask who will teach you or your caregiver how to suction, clean, and manage the tube.

What happens during the procedure

You will be positioned with your neck supported. Monitoring equipment checks your heart rate, blood pressure, and oxygen level. General anaesthesia is common in the operating theatre. In intensive care, local anaesthetic and deep sedation may be used, especially if you are already receiving ventilation.

For an open tracheostomy, the surgeon makes an incision low on the front of the neck. Muscles and the thyroid gland are moved aside when needed. An opening is made between the firm cartilage rings of the windpipe.

For a percutaneous tracheostomy, a needle and guidewire are passed into the windpipe through a small incision. Dilators gradually widen the opening. A bronchoscope-a thin camera passed into the airway-may be used to guide placement.

The tracheostomy tube is inserted and secured with stitches, a neck strap, or both. Some tubes have an inflatable cuff that forms a seal inside the windpipe for ventilation. The team confirms that air is moving correctly and that the tube is in the right position.

Recovery and what to expect afterward

Your neck may feel sore, tight, or tender. Pain medicine is usually available. Report pain that is increasing rather than improving, particularly if it comes with swelling or bleeding.

You may not eat or drink immediately. A swallowing assessment may be needed because a tracheostomy and the underlying illness can affect swallowing. Nutrition may be given through a feeding tube until eating is considered safe. When cleared, you may restart with suitable textures and small amounts.

Activity usually increases gradually. At first, you may need help sitting, standing, and walking. The tube and any ventilator tubing must remain supported during movement. Avoid swimming while the tracheostomy is present because water can enter the airway directly.

Do not drive home after the procedure. Many people remain in hospital because the tracheostomy is part of treatment for a serious illness. Return to driving requires medical clearance, safe control of secretions, reliable breathing, and freedom from medicines that impair alertness.

Going back to work depends on your underlying condition, breathing needs, type of work, and ability to manage the tube safely. Work involving dust, fumes, water, heavy exertion, or limited access to emergency help may require extra planning.

Risks and possible complications

The team takes steps to reduce complications, but a tracheostomy has important risks.

Early complications include bleeding, infection, air leaking under the skin, and injury to nearby structures. Air may occasionally collect around a lung, called a pneumothorax. The tube can become blocked with mucus, move out of position, or enter tissue beside the windpipe instead of the airway.

Longer-term problems can include:

Rarely, the tube can damage a nearby major blood vessel or an abnormal passage can form between the windpipe and food pipe. New or heavy bleeding requires emergency assessment.

- Irritated tissue or excess tissue growth around the stoma

- Narrowing of the windpipe, called tracheal stenosis
- Difficulty speaking or swallowing
- Repeated chest infections or mucus plugging
- Skin damage from the tube or neck ties

Results and follow up

The immediate result-whether the tube provides a working airway-is known during the procedure. The team will monitor oxygen levels, airflow, ventilation, bleeding, and tube position afterward.

Routine follow-up includes cleaning the stoma, humidifying inhaled air, removing mucus, checking cuff pressure when relevant, and changing the tube at planned intervals. You and your caregivers should receive hands-on training and an emergency plan before leaving a monitored setting.

Some people can use a speaking valve once they can breathe around the tube and manage secretions. A speech and language therapist may assess speech and swallowing.

If the tracheostomy is temporary, the team will assess whether you can breathe, cough, and protect your airway without it. The tube may be made smaller or capped before removal. After removal, the opening usually closes on its own, although a dressing and later surgical closure are sometimes needed.

Alternatives

The alternatives depend on why airway support is needed.

A breathing tube through the mouth or nose avoids a neck opening and is appropriate for short-term ventilation. Over time, however, it may be uncomfortable, require more sedation, and injure the mouth, throat, or voice box.

Non-invasive ventilation uses a tight-fitting face or nasal mask. It avoids an airway procedure but is not suitable if the upper airway is blocked, you cannot protect your airway, or mucus cannot be cleared effectively.

Selected airway blockages may be treated by removing a mass, widening a narrowed area, placing an airway stent, or performing reconstructive surgery. These treatments address particular causes and may not provide immediate or long-term breathing support.

Comfort-focused care without prolonged ventilation or tracheostomy is also an option for some people with severe illness. This trades life-prolonging airway support for treatment focused on comfort and personal goals.

When to call your healthcare team

Contact your tracheostomy team promptly for increasing soreness, redness, swelling, unpleasant-smelling discharge, fever, skin breakdown, repeated tube blockage, new difficulty swallowing, or a change in mucus amount, colour, or thickness.

Seek emergency help for:

Follow your personal emergency plan while help is coming. Use suction or emergency equipment only as you have been trained. Do not force a tube back into a new or difficult stoma.

- Severe trouble breathing or a sudden fall in oxygen level
- A tube that is blocked and cannot be cleared
- A tube that comes out or moves out of position
- Heavy, persistent, or pulsating bleeding
- Rapid neck swelling or air leaking extensively under the skin
- Blue or grey lips, collapse, or reduced responsiveness

Common questions

Will I be asleep for a tracheostomy?

Usually, yes. Planned surgical tracheostomy commonly uses general anaesthesia. Bedside placement may use local anaesthetic with deep sedation. An awake procedure under local anaesthetic is sometimes necessary when severe airway narrowing makes general anaesthesia unsafe.

Can I drive home afterward?

No. A tracheostomy usually requires hospital care, and anaesthesia or sedation also prevents immediate driving. You can return to driving only when your healthcare team confirms that your breathing, alertness, and tube care make it safe.

How painful is a tracheostomy?

You should not feel the procedure under general anaesthesia or deep sedation. The neck

commonly feels sore afterward. Pain should become more manageable with treatment rather than steadily worsen.

Will I be able to talk?

Not immediately in many cases. Air must pass through the voice box to create speech. A speaking valve, cuff adjustment, or different tube may help when it is safe. Never use a speaking valve with an inflated cuff.

Will I be able to eat normally?

Possibly, but swallowing may need assessment first. Some people eat normally with a tracheostomy, while others temporarily need changed food textures or tube feeding.

When will I know whether it can be removed?

The team reassesses this as your underlying condition improves. Removal is considered when you can breathe without the tube, clear mucus, and protect your airway safely.

Sources

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- Mitchell RB, Hussey HM, Setzen G, et al. Clinical consensus statement: tracheostomy care. Otolaryngology-Head and Neck Surgery . 2013;148(1):6-20.
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