PROCEDURE

Endotracheal intubation

Endotracheal intubation places a breathing tube into your windpipe to keep your airway open and support breathing.

PURPOSE
Keep the airway open and deliver oxygen and ventilation

PROCEDURE TYPE
Therapeutic, usually bedside or in an operating theatre

WHERE IT IS DONE
Operating theatre, emergency department, intensive care, or bedside

ANAESTHESIA
General anaesthesia; sometimes local anaesthesia with sedation

HOW LONG IT TAKES
About 1-5 minutes; difficult airways can take longer

PREPARATION
Fasting when planned; emergencies proceed without delay

RECOVERY
Tube removal follows recovery; no driving after sedating medicines

MAIN RISKS
Low oxygen, aspiration, dental or airway injury, blood-pressure changes

RESULTS
Airway placement confirmed immediately; breathing monitored continuously

Overview

Endotracheal intubation places a flexible plastic tube through your mouth, or less often your nose, into your trachea, the main airway leading to your lungs. The endotracheal tube is often called an ET tube or breathing tube.

The tube keeps your airway open and can connect to a ventilator that supports breathing. It can also deliver oxygen, anaesthetic gases, and certain medicines.

Intubation and mechanical ventilation are related but different: intubation places the tube, while ventilation provides breathing support through it. Intubation may be planned for surgery or performed urgently when someone cannot breathe or protect their airway.

Why the procedure is performed

You may need endotracheal intubation to:

During general anaesthesia, medicines make you unconscious and may relax your breathing muscles. In an emergency, intubation may be needed when oxygen remains too low, breathing is failing, or reduced consciousness increases the risk of saliva, vomit, or stomach contents entering the lungs.

- Receive general anaesthesia for an operation
- Support breathing during severe illness, injury, or cardiac arrest
- Protect your lungs if you cannot cough or swallow safely
- Bypass swelling, injury, or blockage in the upper airway
- Help remove airway secretions

Who should and should not have it

Intubation may be appropriate when reliable airway control is more important than the risks of placing a tube. In a life-threatening emergency, it may be the safest option.

It is not required for everyone who needs oxygen or breathing support. Nasal oxygen, a face mask, or non-invasive ventilation may be enough if you are awake, can protect your airway, and respond to treatment.

Planned intubation may be delayed if treatment can safely wait and an unstable heart or lung condition increases anaesthetic risk. Standard oral intubation may be unsuitable with major facial or mouth injuries, severely limited mouth opening, or a known difficult airway. Nasal intubation is generally avoided with possible skull-base fracture, significant nasal injury, blockage, or bleeding.

These conditions do not always prevent intubation. The team may use an awake technique, flexible camera, different route, or surgical airway through the neck.

How to prepare

For planned intubation, follow your facility's instructions, including when to stop eating and drinking before anaesthesia.

Tell the team about:

Do not stop prescribed medicines, including blood thinners like warfarin or apixaban , unless the treating team instructs you to.

If you will go home after anaesthesia or sedation, arrange for a responsible adult to take you home. Emergency intubation proceeds without delay; the team uses extra precautions if you have not fasted.

- Previous difficult intubation or anaesthetic problems
- Loose teeth, dentures, crowns, bridges, or implants
- Neck surgery, limited neck movement, or jaw problems
- Allergies and all medicines or supplements
- Pregnancy, reflux, swallowing problems, or recent food and drink

What happens during the procedure

Monitors measure your oxygen level, heart rhythm, and blood pressure. You usually receive oxygen through a mask before insertion.

For most planned procedures, medicines make you unconscious and relax your muscles. Emergency medicines may be given in quick succession so the tube can be placed rapidly.

A clinician uses a laryngoscope, sometimes with a video camera, to view the vocal cords. The tube is guided between them into the trachea. A small cuff is inflated to seal the airway, and the tube is secured.

Position is confirmed by detecting exhaled carbon dioxide and checking chest movement, oxygen levels, and breath sounds. A chest X-ray may check the tube's depth, especially in intensive care.

If a difficult airway is expected, you may remain awake and breathe independently while numbing medicine and sometimes sedation are given. A flexible camera may guide the tube.

Recovery and what to expect afterward

After removal, a sore or dry throat, hoarse voice, or temporary swallowing discomfort is common. Severe or worsening pain should be reported.

You can usually eat and drink when fully awake and able to swallow safely. After prolonged intubation or serious illness, you may need a swallowing assessment first.

Activity and return to work depend mainly on the operation or illness. Longer ventilation may

cause weakness and slower recovery.

Do not drive while affected by anaesthetic or sedating medicines. Follow your facility's driving restriction and arrange transport home when required.

If breathing support must continue, the tube remains in place, usually in intensive care. Sedation may be used for comfort. You cannot speak while the tube passes through your vocal cords, but staff can provide other ways to communicate.

Risks and possible complications

Possible risks include:

Longer intubation increases the risk of pneumonia, pressure injury, and breathing-muscle weakness. Lasting voice or airway problems are uncommon but can occur, particularly after difficult or prolonged intubation.

- Sore throat, hoarseness, coughing, or swallowing discomfort
- Injury to the lips, tongue, mouth, throat, teeth, or dental work
- Low oxygen or blood-pressure changes
- Aspiration of vomit or stomach contents into the lungs
- Injury or swelling of the vocal cords, voice box, or trachea
- Incorrect tube position, blockage, or accidental movement
- Reactions to anaesthetic or sedating medicines

Results and follow up

The immediate result is whether the tube is correctly positioned and providing effective breathing support. Placement is checked immediately and monitored continuously.

The team regularly assesses whether you can breathe, cough, and protect your airway without the tube. Removal is called extubation. Extra oxygen or non-invasive support may be needed afterward.

At follow-up, report ongoing hoarseness, swallowing difficulty, dental injury, or throat discomfort, especially if it is not improving.

Alternatives

Alternatives depend on why support is needed:

- Nasal oxygen or a mask can provide oxygen but cannot control the airway or breathe for you.
- High-flow nasal oxygen or non-invasive ventilation may support selected patients but is less suitable if you cannot protect your airway, are vomiting, or need immediate reliable ventilation.
- A bag-and-mask device provides temporary emergency breaths but requires trained assistance and offers less protection from aspiration.
- A supraglottic airway sits above the vocal cords and may be used during some operations or as a rescue device, but it protects the airway less reliably.
- Local or regional anaesthesia may avoid intubation for some operations.
- A tracheostomy places a tube through the neck and may be considered for prolonged support or when the upper airway cannot be used.

When to call your healthcare team

Contact your healthcare team promptly for persistent or worsening hoarseness, painful swallowing, fever, increasing cough, blood in your saliva, or possible dental damage.

Seek emergency help for:

If you are in hospital, immediately tell staff about breathing difficulty, chest discomfort, severe throat pain, or a feeling that the tube has moved.

- New or severe trouble breathing
- Noisy, high-pitched breathing
- Blue or grey lips or skin
- Rapidly increasing neck or throat swelling
- Inability to swallow saliva
- Severe chest pain, fainting, or confusion

Common questions

Will I be asleep?

Most people are unconscious during surgical intubation. For a difficult airway, you may remain awake with numbing medicine and sedation. Emergency medication depends on your condition.

Can I drive home afterward?

Not while affected by general anaesthesia or sedation. Follow the facility's restriction and arrange transport.

How painful is it?

You should not feel insertion under general anaesthesia. Awake intubation uses numbing medicine. A sore throat afterward is common, but severe or increasing pain needs assessment.

When will I know whether it worked?

Placement is confirmed immediately using exhaled carbon dioxide and breathing checks, with continued monitoring afterward.

Can I talk with the tube in?

No. The tube passes between the vocal cords. Staff can help you communicate through writing, gestures, boards, or electronic devices.

When can the tube come out?

It can be removed when you can breathe adequately and protect your airway. This may be at the end of an operation or after days of treatment.

Sources

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