Tracheostomy in Adults

Part 1 of 2

A tracheostomy is a surgery that creates an opening through the front of your neck into the trachea (windpipe). A tracheostomy tube is usually put through this hole into the windpipe. However, the word tracheostomy is commonly used to describe both the surgery and/or the tube. Tracheostomy tubes allow people who cannot breathe on their own to be connected to a ventilator (breathing machine) or receive additional oxygen. It also allows air to bypass an injury or blockage in the upper part of the windpipe to reach the lungs.

This fact sheet discusses use of a tracheostomy in an adult. For information on use in a child, see ATS Patient Information Series—*Use of a Tracheostomy with a Child*.

Why would you or your loved one need a tracheostomy?

- Your healthcare provider may recommend a tracheostomy when you cannot breathe on your own. This can happen in conditions like severe pneumonia, a massive heart attack, or stroke. In such cases, you may need help from a breathing machine for more than a couple of weeks. At first, the breathing machine delivers air to the lungs through a temporary tube that goes into the windpipe through your mouth [endotracheal (ET) tube] (See ATS Patient Education Series on *Mechanical Ventilation*). However, if it is expected that you will need long-term help from a breathing machine, your healthcare provide may recommend switching the tube in the mouth to a tracheostomy tube.
- Those with injuries (such as trauma or radiation) or a blockage in the windpipe (such as from cancer) may also need a tracheostomy. Usually air enters through the mouth and nose, goes through the windpipe and into the lungs. In cases with an injury or a blockage to the windpipe, a tracheostomy tube can bypass the damaged part of the windpipe and allow a person to continue to breathe on their own.

What are the benefits of a tracheostomy?

- Breathing tubes through the mouth (endotracheal tube) can cause mouth ulcers and damage to the vocal cords (voice box). These complications increase the longer the tube is in place. Tracheostomy tubes reduce these risks.
- Breathing tubes in the mouth are uncomfortable. People on ventilators usually require medications for pain and discomfort that can make them sleepy. It is also harder to interact with family members because of the side effects of these medications and inability to talk with the tube in your mouth. Tracheostomies are usually more comfortable than tubes in the mouth and you may require less medication. You may also be able to be more awake and interactive. In some cases, a special speaking valve (Passey Muir valve) can be placed on the tracheostomy tube to improve speech even while on the ventilator.
- Tracheostomy tubes can safely remain in place longer than endotracheal tubes.
- Tracheostomy tubes are more secure than tubes in the mouth. It is much easier to take part in physical therapy and rehabilitation exercises including sitting up in bed and walking with a tracheostomy tube rather than an endotracheal tube.

What are the risks of tracheostomy?

- **Short-term:** Most of the short-term risks are related to the surgery. All surgeries have risks of bleeding and infection. There is also risk of damaging other areas of the neck. These risks are typically small and tracheostomy is overall a safe procedure. Complications are more common if patients are very sick, weak or malnourished. In the first week after the surgery, there is a higher risk of the tube coming out. This can have severe consequences if you cannot breathe on your own by then. Many surgical risks are case-specific and you should discuss your own risk with your medical team.
- **Long-term:** Over time, the tracheostomy tube also can cause some damage to the windpipe, which can cause problems if the tube is removed. The tracheostomy tube can sometimes cause breakdown of the area around the hole in the neck (this area is called the stoma). This can lead to infection and rarely serious bleeding. Both tracheostomy tubes and endotracheal tubes increase the chance of pneumonia. A person who has a tracheostomy may be at higher risk for getting frequent pneumonias, especially if he or she has to stay in a hospital or a long-term facility for a while. Tracheostomy tubes can also irritate the windpipe and increase the amount of mucus production. This can lead to chronic issues with mucus blocking parts of the lung. Suctioning the tracheostomy tube can relieve this blockage. Getting good training for the person and caregivers who help caring for a tracheostomy can help reduce or prevent some of these risks.

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What can I expect after a surgery for a tracheostomy?

You will typically return to the ICU after the surgery if you still need support from a breathing machine. If the tracheostomy is placed because of an injured or blocked windpipe, you may be watched on a regular hospital floor. The surgical site will heal over the first week after the procedure. Minor bleeding or scab formation for a few days is normal. About one week after the procedure, the tract between the skin and the windpipe heals. At this time, the tracheostomy tube may be switched out for a new one. This new tracheostomy tube should be removed, cleaned and replaced every so often to prevent the tube from being blocked by mucus or debris.

If the tracheostomy is done due to an injured or blocked windpipe, what happens after the tracheostomy depends on why it was placed. Some injuries can be repaired quickly with fast removal of the tube. If you need radiation therapy to the neck for cancer, the tracheostomy will often stay in place until the area heals from the radiation. However, if the tracheostomy was placed because of a blockage related to too much soft tissue in the neck (for example, obstructive sleep apnea), the tracheostomy tube will likely remain in place long-term.

Those who have a tracheostomy placed because they still need a breathing machine often have a different course. Even after most medical problems have been treated (for example, the patient recovers from a severe pneumonia), you may still require some support from the breathing machine and intensive physical therapy. These patients may need to be discharged to a long-term care facility to slowly learn to breathe without help from a breathing machine, to continue any medical treatment, and to have physical therapy.

How long will it take to breathe on my own after a tracheostomy and be disconnected from the ventilator?

If you require a tracheostomy for an injury or blockage to the windpipe, you are quite likely to be able to breathe on your own (through the tracheostomy tube) soon after surgery.

If you cannot breathe on your own, it is difficult to predict how long you will need the breathing machine. As you recover from the underlying illness, the amount of support from the breathing machine is gradually reduced (a process called 'weaning'). You will likely go through a period where you are off the machine for parts of the day and back on at other times before you can permanently come off the breathing machine. Ideally, the goal is to wean patients off the breathing machine entirely. However, it is possible that you may not come off the breathing machine at all and may require long-term breathing support and ongoing hospital care. You should discuss specific issues about coming off the breathing machine with your medical team.

Is a tracheostomy permanent?

Not for most people. Whether your tracheostomy tube can be removed depends on why it was placed. Once you are able to breathe on your own or if your injury/blockage to the windpipe is treated, you can start discussing with your healthcare provider about removing the tube. After removal of the tracheostomy tube, the hole in the neck where the tube was often closes on its own. If the airway obstruction is permanent or you still need help from a breathing machine, the tracheostomy may be permanent.

Do I have to have a tracheostomy if my medical team believes I will need prolonged support from a breathing machine?

No, but the issue can be very complicated. Decisions about life support and breathing machines are very personal for each of us. Some people would not want to be attached to machines for a long period of time and a tracheostomy may not be the right decision for them. In such cases, a transition towards care directed at comfort only, as opposed to prolonging life with artificial means, may be appropriate. For others, the tracheostomy is the tool that allows them to fulfill their personal beliefs of doing everything necessary to prolong life. Whether you forgo a tracheostomy and pursue comfort measures, or choose to have a tracheostomy is a highly personal decision based on your own values and beliefs. These decisions often fall to family members and "health care proxies" as patients are not able to communicate when on a breathing machine. It is important that your family and health care proxy know your wishes about long-term breathing support from a breathing machine so they can make decisions based on your values and beliefs. (See ATS Patient Education Series on Palliative Care).

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Rx *Action Steps*

- ✔ If your health care provider is recommending a tracheostomy, you or your loved ones will want to review the risks and benefits for you.
- ✔ Expect to learn how to care for a tracheostomy tube to help reduce or prevent risks.

Healthcare Provider's Contact Number:

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Recommended Reading:

ATS Patient Education Series
www.thoracic.org/patients

- Mechanical Ventilation
- Palliative Care
- Tracheostomy in Child

MedLine Plus—Tracheostomy Care
https://www.nlm.nih.gov/medlineplus/ency/patientinstructions/000076.htm

Breath of Life
http://www.bolhme.com/education/tracheostomycare&suctioning.pdf