

Blom-Singer®

The voice of experience since 1978



What to Expect

Total Laryngectomy and Voice Restoration

INHEALTH®
TECHNOLOGIES



What now?

Your doctor is recommending a total laryngectomy (*lair-in-JECK-toe-mee*). This is a surgery that involves removal of your voice box, or larynx.

It is normal to have concerns and questions.

This brochure will give you information about what to expect from your surgery and what your communication choices may be following surgery. It may also help you plan for changes after your surgery. Your healthcare team may have you meet with a speech-language pathologist to talk about these changes and answer questions you may have about surgery.

Your healthcare team will always be your best resource for information.

A closer look at your neck and throat

Let's focus on the following:

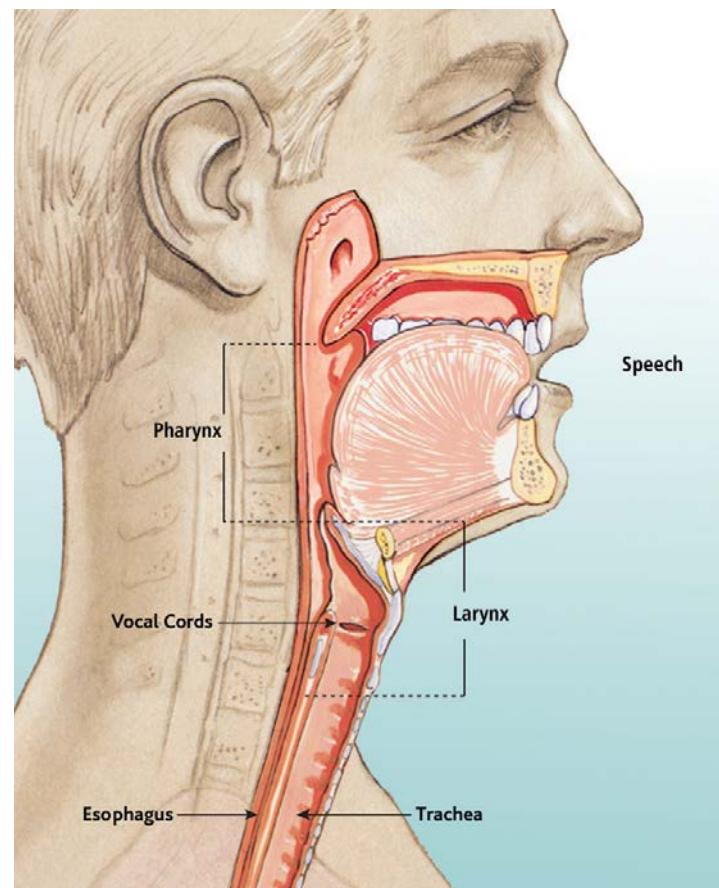
- Larynx (*LAIR-inks*): your voice box
- Trachea (*TRAY-kee-ah*): your windpipe or airway
- Esophagus (*ee-SOF-ah-gus*): your "food pipe"
- Pharynx (*FAIR-inks*): the inside of your throat

The larynx sits on top of the trachea and connects the trachea to the pharynx and the pharynx to the esophagus.

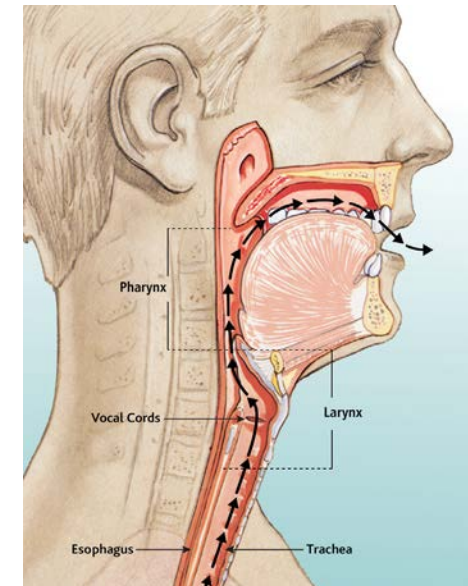
The larynx plays an important role in:

- Breathing
- Talking
- Swallowing

Pre-laryngectomy

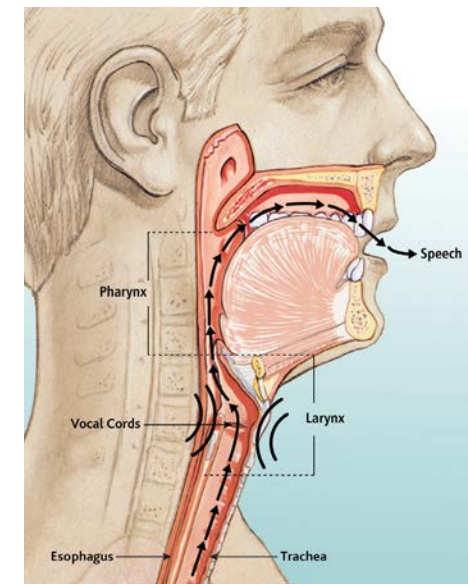


People may have breathing trouble, hoarseness, and/or swallowing difficulty when the larynx is affected by cancer, radiation treatment effects, or injury. Understanding how breathing, talking, and swallowing work before surgery will help to explain the changes that will take place after surgery.



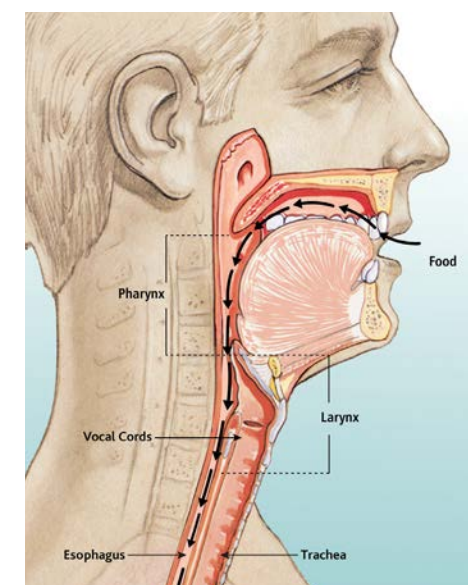
Breathing before total laryngectomy

When you breathe, air is drawn in through the nose and mouth, passes the vocal cords, and enters the trachea and lungs. During inhalation, air is filtered, humidified, and warmed as it goes through the upper airway.



Talking before total laryngectomy

When you talk, air comes up from the lungs and vibrates the vocal cords, creating your voice. That sound is then shaped into speech as it travels through the throat, mouth, and nose.



Swallowing before total laryngectomy

When you swallow, the larynx closes, allowing food and liquid to enter the esophagus and travel to the stomach.

Laryngeal cancer and treatment

The diagnosis of laryngeal cancer means abnormal cells are growing on the structures of the larynx. This could include the vocal cords that produce the voice and/or the tissue and cartilage around the vocal cords.

Your doctor will determine your cancer type and the stage of your cancer. This is based on the extent of your cancer and may affect your treatment plan. This process is different for every person. Some treatment options include:

Radiation: a treatment that uses high-energy particles or waves, such as X-rays, gamma rays, electron beams, or protons, to damage or destroy cancer cells.

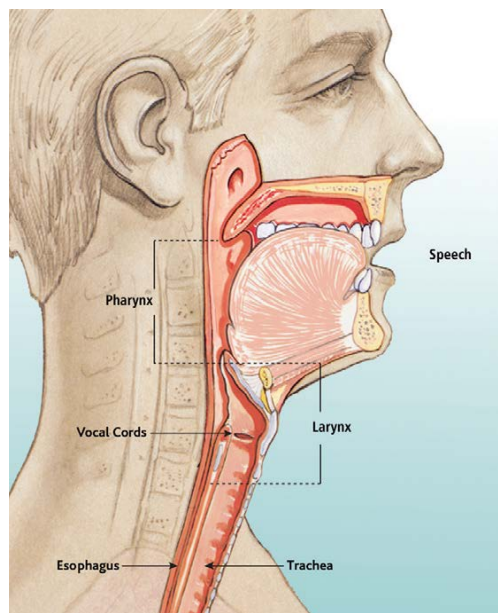
Chemotherapy: a type of cancer treatment that uses medications to limit or stop the spread of cancer cells. This is also called “chemo.”

Total laryngectomy: a surgery that completely removes the larynx.

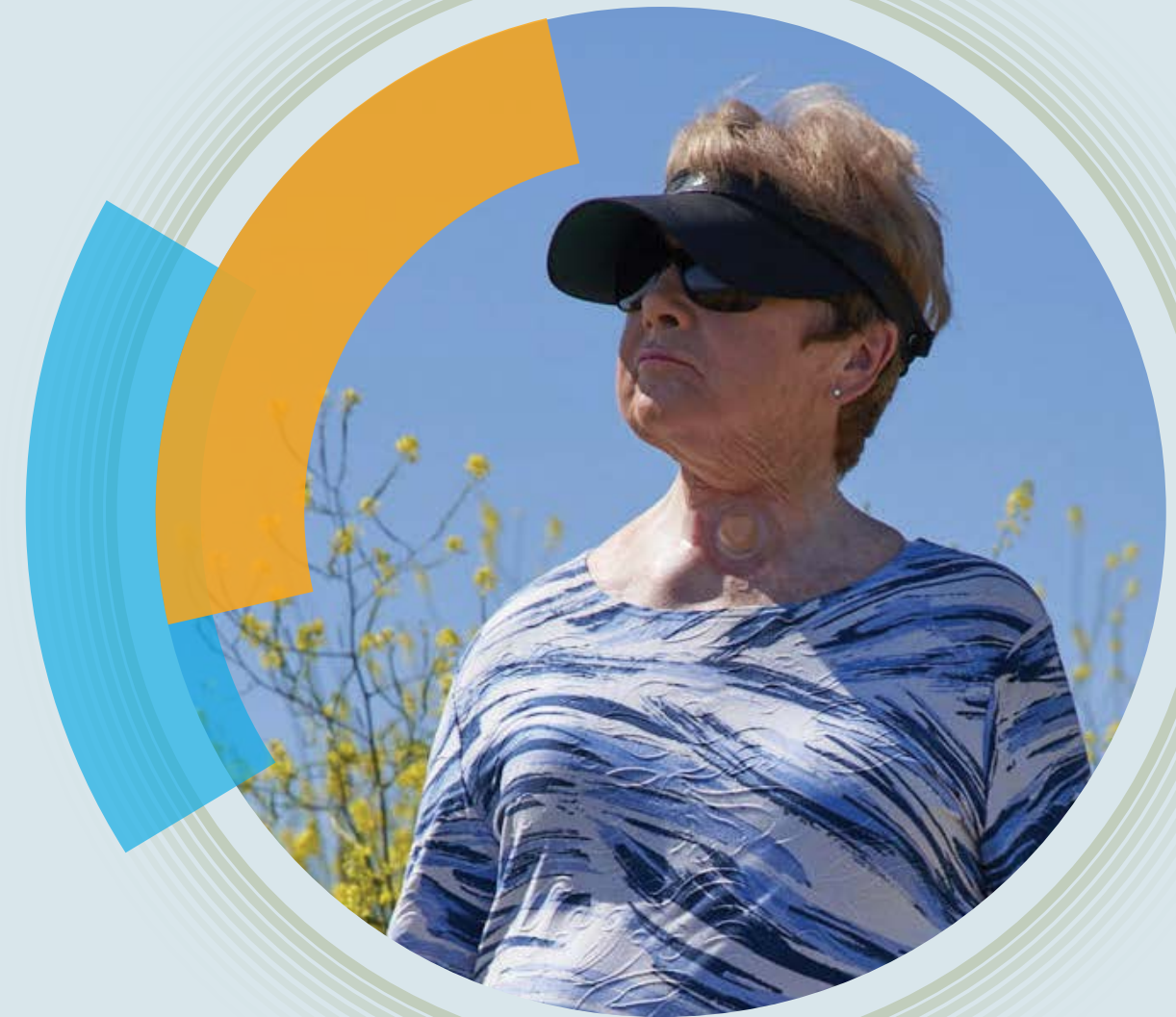
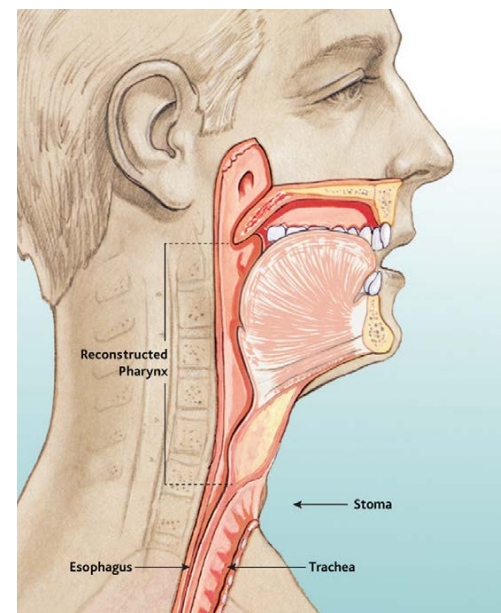
Total laryngectomy

During a total laryngectomy, the larynx is removed and the upper airway (*mouth, nose, and throat*) is separated from the lower airway (*trachea and lungs*). The mouth is connected to the esophagus, forming one passage for swallowing. The trachea is redirected to create a permanent hole on the surface of the neck, forming one passage for breathing. This hole is called a tracheostoma - (*TRAY-kee-oh-STOW-ma*), or “stoma” for short. The nose and the mouth do not connect to the lungs after this surgery.

Pre-laryngectomy



Post-laryngectomy



Changes in swallowing

After a total laryngectomy, swallowing may feel different. Many people notice some foods are harder to swallow and they must drink liquids to help rinse their food down. Some people also notice it takes longer for them to eat a meal. If you have trouble swallowing after your laryngectomy, talk to your healthcare team.

What to expect at the hospital

After your surgery, you can expect to stay in the hospital for several days. The length of time will be determined by your healthcare team. Consider taking a white board and marker or pen and paper for writing to the hospital with you. You can also start using an electrolarynx to communicate while you are in the hospital. A communication board or laryngectomy needs chart may also be helpful to express basic needs quickly.

Changes in breathing

After a total laryngectomy, you will only breathe through your stoma. The stoma is a permanent hole in your neck and should never close. Your doctor may recommend using a laryngectomy tube to keep the stoma open and round. These soft silicone reusable tubes come in different sizes and lengths. Your healthcare team will decide if you should use a laryngectomy tube and which size and length best fits you.

Before surgery, you breathed through your mouth and nose, which heated, moisturized, and filtered the air before it reached your lungs. Following a total laryngectomy, this natural system changes because the nose and the mouth are no longer connected to the lungs. Your body cannot heat, moisturize, or filter the air you breathe in. Therefore, the air reaching your lungs will be cooler and drier. It will have more dirt and dust particles. You will also have a lower resistance during breathing.

Your body may produce additional mucus to help protect the lungs. Many patients notice more coughing and hard mucus that is difficult to cough out. These are called "crusting" and "mucus plugs." Crusting and mucus plugs can be dangerous and make it difficult to breathe. These can be reduced by using heat and moisture exchange systems, or HMEs.¹

An HME system includes daily disposable HME cartridges and an accessory where the cartridge can be attached. The attachment accessory may sit in or on the stoma, while the HME cartridge will attach to a connection hub. Most HMEs can be worn for 24 hours and for any activity (including sleeping). Consistent use of an HME system may reduce coughing and mucus production, and may improve your sleep.

After laryngectomy, you should be very cautious around water. Your stoma provides a direct, open path to your lungs, so it can be difficult to prevent water from entering the airway. You should never let your neck go underwater, and you should avoid activities like swimming or boating to avoid accidental drowning. A shower guard or shower collar may provide protection for your stoma and lungs during showering.



Shower Guard
BE 6048



Day&Night® EasyFlow® HME
BE 1091



SpeakFree® EasyFlow® HME*
BE 1090EF



AccuFit® Adhesive Housings*
BE 6083



HydroFit® Adhesive Housings*
BE 6086



StomaSoft® HME-Compatible
Laryngectomy Tube

*More options available at <https://inhealth.com/iht-usa-day-night-samples> (USA and Canada)

Changes in communication

Immediately following a total laryngectomy, you will not be able to produce voice, as your larynx and vocal cords will be removed during surgery. There are several options for communication after total laryngectomy. Your healthcare team will help determine which communication method is best for you.

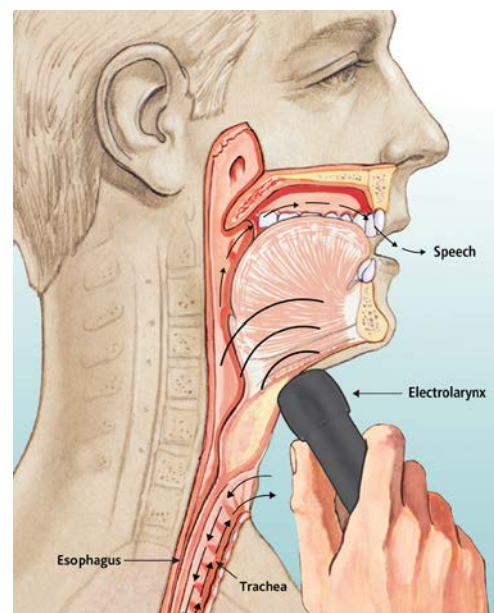
The four most common methods:

- Nonverbal communication
- Electrolarynx or artificial larynx
- Esophageal (*EE-sof-ah-JEE-ahl*) speech
- Tracheoesophageal (*TRAY-kee-oh-EE-sof-ah-JEE-ahl*) speech

Nonverbal communication

This includes writing, texting or typing, making facial expressions and gestures, and mouthing words. There are even programs on smartphones and computers that speak what you type.

Communicating with an electrolarynx



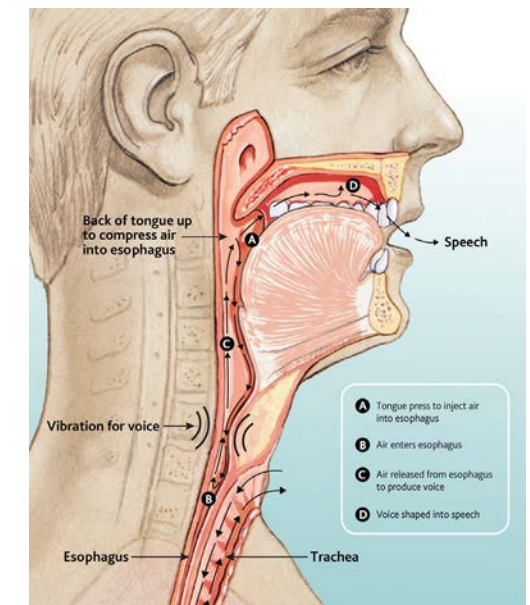
Electrolarynx (or artificial larynx)

An electrolarynx (*EL*) is a small, battery-operated device that creates vibrations. It is placed flat against the neck or cheek to vibrate tissue. An oral adapter can be used inside the mouth if skin on your neck or cheek is sensitive or does not allow sound to pass. When the EL is placed in the best spot for you, the vibration is carried into the mouth to be shaped into speech. EL speech may take some practice, but it is reliable and low maintenance. You can work with your healthcare team about more tips and tricks for using an electrolarynx.

Esophageal speech

In esophageal speech, air is swallowed into the upper esophagus and creates a vibration of the tissue. This vibration can be shaped in the mouth to create speech. Esophageal speech can be difficult to learn but can be very reliable. You should talk to your healthcare team to see if this is a good option for you.

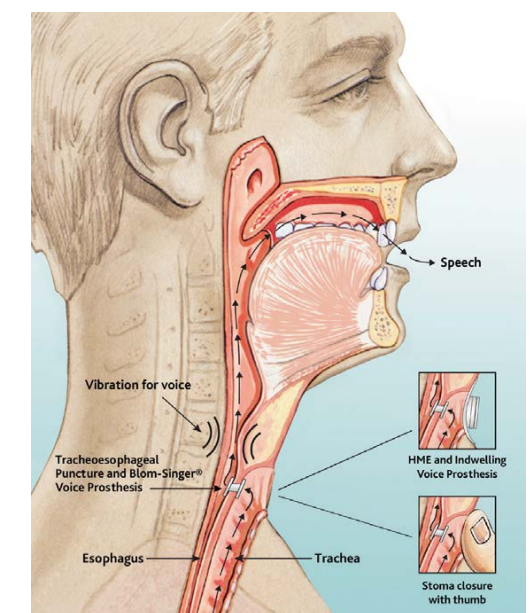
Communicating with esophageal speech



Tracheoesophageal voice prosthesis

Tracheoesophageal speech

Tracheoesophageal speech can be produced after a tracheoesophageal puncture with insertion of a tracheoesophageal voice prosthesis. This is often referred to as a "TEP." A tracheoesophageal puncture is a small, surgically-created hole in the common wall of the trachea and esophagus. The voice prosthesis is a silicone device that has a one-way valve to allow air to pass from the trachea to the esophagus, but prevent food and liquid from passing in the other direction when swallowing. The air creates vibration of the esophagus and pharynx tissue, which the mouth shapes into speech.



Tracheoesophageal Speech with a Voice Prosthesis

Tracheoesophageal (TE) speech with a voice prosthesis is considered the gold standard in voice restoration after a total laryngectomy. It tends to be easier to produce and learn than esophageal speech and sounds more natural than using an electrolarynx.

There are many sizes and styles of voice prosthesis available, some of which can be seen below. Your healthcare provider will determine which voice prosthesis is best for you.



*Blom-Singer® Low Pressure
Voice Prosthesis*



*Blom-Singer® Classic™
Indwelling Voice Prosthesis-Nonsterile*



*Blom-Singer® Dual Valve™
Large Flange Indwelling Voice Prosthesis*



*Blom-Singer® Dual Valve™
Indwelling Voice Prosthesis*



A tracheoesophageal puncture with a voice prosthesis (TEP) needs regular maintenance, including regular cleaning with a brush and/or flushing device. The voice prosthesis will also need to be replaced periodically. This is usually done in an outpatient procedure and does not require anesthesia. Some patients even learn to change their own voice prosthesis.

Although a TEP is a great option for some people, it is not for everyone. Your healthcare provider will determine if a TEP is an option for you.

A “New normal”

Adjusting to life after laryngectomy can be difficult. Your healthcare team, friends, and family can help provide a strong support network. Consult your healthcare team for information on local laryngectomy support groups in your vicinity. Additionally, numerous online resources are at your disposal. Remember, you're not alone on your journey to healing. Explore our Virtual Happy Hours and other patient events at: <https://inhealth.com/patient-events>.

Resources

If you have questions, need more information, or are looking for support, there are many resources available, in addition to your healthcare team.

American Academy of Otolaryngology-Head and Neck Surgery (AAO-HNS)
www.entnet.org

The American Academy of Otolaryngology-Head and Neck Surgery is the world's largest organization representing specialists who treat the ear, nose, throat, and related structures of the head and neck.

American Cancer Society (ACS)
www.cancer.org

The American Cancer Society is the nationwide community-based voluntary health organization dedicated to eliminating cancer as a major health problem by preventing cancer, saving lives, and diminishing suffering from cancer through research, education, advocacy, and service.

InHealth Technologies
www.inhealth.com

InHealth Technologies is a global leader in voice restoration systems. Since they first became available nearly 45 years ago, Blom-Singer® products have become the international gold standard for voice restoration, enabling thousands of laryngectomees worldwide to regain their ability to speak.

International Association of Laryngectomees (IAL)
www.theialvoice.org

The IAL is a nonprofit voluntary organization composed of approximately 250 member clubs and recognized regional organizations. These clubs are generally known as “Lost Chord” or “New Voice” clubs. Clubs are composed of from 10 to more than 300 laryngectomees. The IAL helps local clubs support laryngectomees in their area.

National Cancer Institute (NCI)
www.cancer.gov

The National Cancer Institute is the federal government's principal agency for cancer research and training and the nation's leader in cancer research. The NCI is part of the National Institutes of Health (NIH), which is one of 11 agencies that comprise the Department of Health and Human Services (HHS).

WebWhispers
www.webwhispers.org

WebWhispers was started in 1996 for those who had questions about larynx cancer treatments, surgery, recovery, and what life is like after laryngectomy surgery. They are now the largest support group for survivors of larynx cancer and other throat cancers.

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1. Foreman A, De Santis R, Enepekides D, Higgins K. Heat and moisture exchanger use reduces in-hospital complications following total laryngectomy: A case-control study. *Otolaryngology Head and Neck Surgery*. 2016;45(1):1-5. **2.** Akerstaff AH, Hilgers FJ, et al. Improvements in respiratory and psychosocial functioning following total laryngectomy by the use of a heat and moisture exchanger. *Annals of Otolaryngology, Rhinology & Laryngology*. 1993;102(11):878-883.

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