

Heat and moisture exchangers (HMEs) can be considered your new “nose” after laryngectomy surgery.

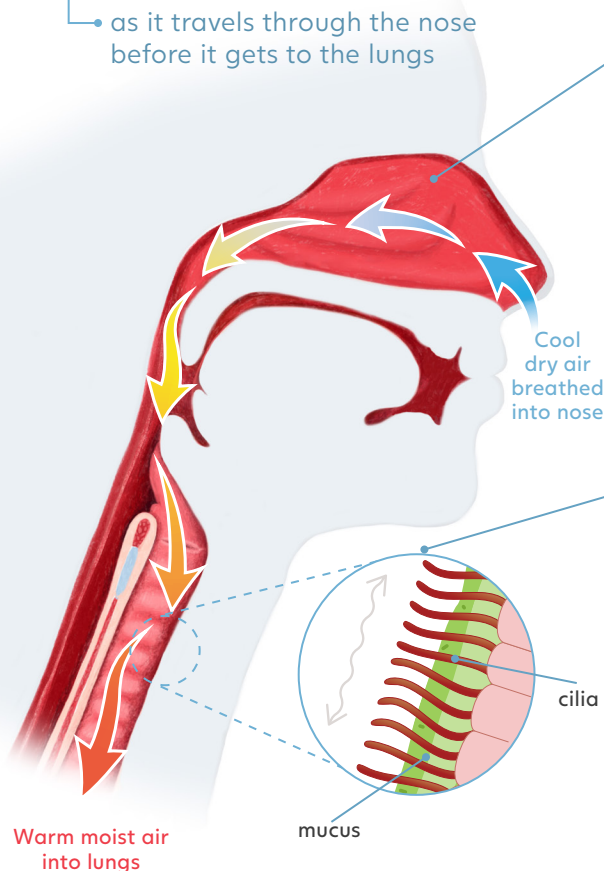
Understanding how your **nose functioned before surgery** is crucial in order to **optimize your pulmonary health** after surgery.



BEFORE SURGERY

BREATHING THROUGH YOUR NOSE AND MOUTH

Air is warmed and humidified as it travels through the nose before it gets to the lungs



BEFORE SURGERY, your nose did more than just smell! It warmed, filtered, and added moisture to the air you breathed in. This helped your lungs stay clean, your mucus stay thin, and your breathing feel smooth and easy.

Tiny hair-like structures called cilia line your nasal passages, windpipe, and lungs. Cilia move in waves to sweep out dust, germs, and mucus. The cilia move when the temperature is high and the air is moist.

AFTER SURGERY, you breathe through a permanent hole in your neck called a stoma. This is an opening in your neck that connects directly to your windpipe. Unlike your nose and mouth, the stoma doesn't warm, moisten, or filter the air you breathe.

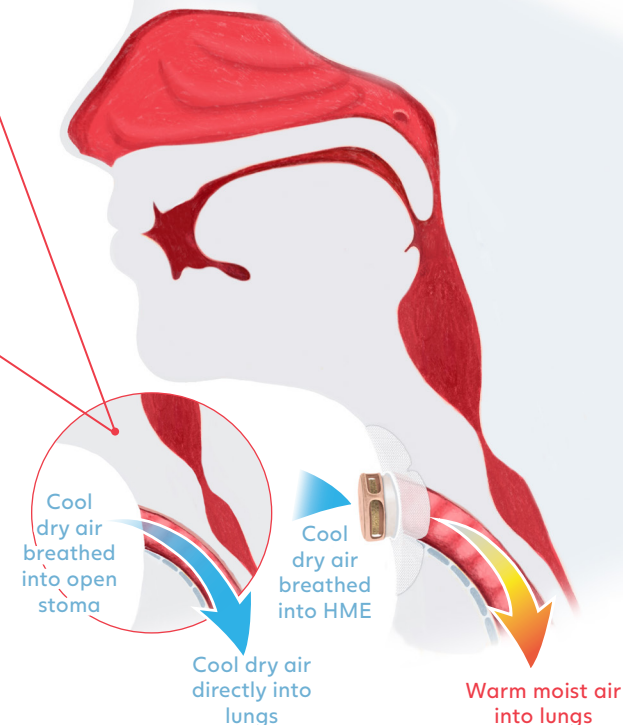
Now, breathing in cold, dry, unfiltered air, the cilia don't get the warm, moist air they need to work well. This change results in increased mucus, coughing, and risk of pulmonary infections.

An **HME** acts like your new nose, helping to restore the heat and moisture in your lungs and keep the cilia moving, which then reduces the amount of coughing and mucus you have. An **HME** helps keep larger particles out of your lungs, such as insects or food crumbs.

AFTER SURGERY

BREATHING THROUGH AN HME – YOUR NEW NOSE

After surgery, because you breathe through your stoma the air is not heated, filtered, or moisturized before it reaches the lungs.



UNDERSTANDING HEAT AND MOISTURE EXCHANGERS (HMEs)



WITHOUT AN HME YOU MAY EXPERIENCE

- Increased mucus
- More frequent coughing
- Frequent need to clear mucus
- Interrupted sleep due to coughing
- Increased risk for mucus plugs
- Negative impact on quality of life
- Psychological stress
- More fatigue
- Negative impact on voice quality for voice prosthesis users

WITH AN HME YOU MAY EXPERIENCE

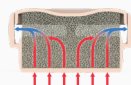
- Less shortness of breath
- Less fatigue
- Less frequent stoma cleaning
- Improved sleep
- Improved speech
- Less psychological stress
- Reduced mucus production (some mucus is normal)
- Improved voice quality
- Overall improved quality of life



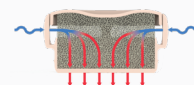
HOW DOES AN HME WORK?



The HME has a foam core that is treated with a special salt solution.



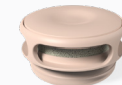
As you **exhale**, heat and moisture from your breath is captured in the HME.



The heat and moisture is added back to the air you **inhale** before it passes to your lungs.



The HME keeps the temperature and condition of the air in your airway consistent so the lungs can function well.



It is important to use an HME 24 hours a day, 7 days a week.

IT'S YOUR NEW NOSE.

References

Bien S, Okla S, van As-Brooks CJ, Ackerstaff AH. The effect of a heat and moisture exchanger (Provox HME) on pulmonary protection after total laryngectomy: a randomized controlled study. *Eur Arch Otorhinolaryngol*. 2010;267(3):429-435.

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