



## OLFACTION REHABILITATION AFTER TOTAL LARYNGECTOMY MANUAL FOR LARYNGECTOMIZED INDIVIDUALS

RIANNE POLAK, CORINA VAN AS, FRITS VAN DAM, FRANS HILGERS



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Your laryngectomy has resulted in several major physical changes, most prominently regarding voicing and breathing. But also the sense of smell is not as it used to be and detecting odors has become more troublesome for you since your surgery. Your SLP already might have explained some of the issues regarding the sense of smell and how to recover that using the “polite-yawning technique” (in the medical literature also called the “Nasal Airflow Inducing Maneuver” or “NAIM”). This manual adds further clarification about this form of rehabilitation, and thereby, might make its acquisition somewhat easier for you.

For further clarification the text of this manual has been complemented with several videos. The laryngectomized individuals in these videos already have mastered the polite yawning technique. They talk about the acquisition of that and show how smelling exactly is accomplished by them. Hopefully this helps you to improve your sense of smell, as well.

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# ALTERED SENSE OF SMELL AFTER LARYNGECTOMY

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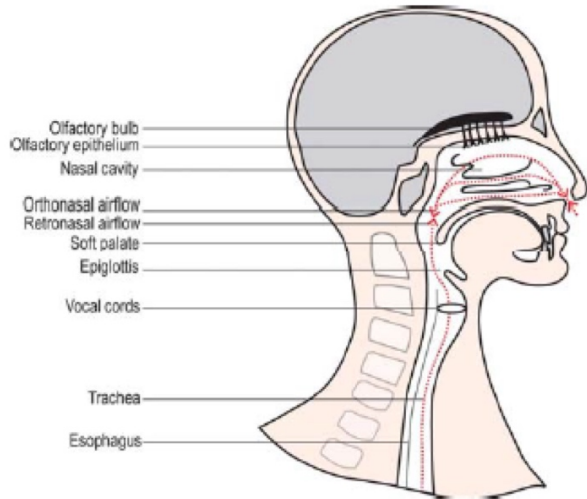
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## THE SENSE OF SMELL BEFORE LARYNGECTOMY

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Before your surgery, during nasal breathing odors were transported towards the olfactory sensory organ in the nasal attic, where the odors are recognized.

In the schematic figure to the right you can see where and how that functions.



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## THE SENSE OF SMELL AFTER LARYNGECTOMY

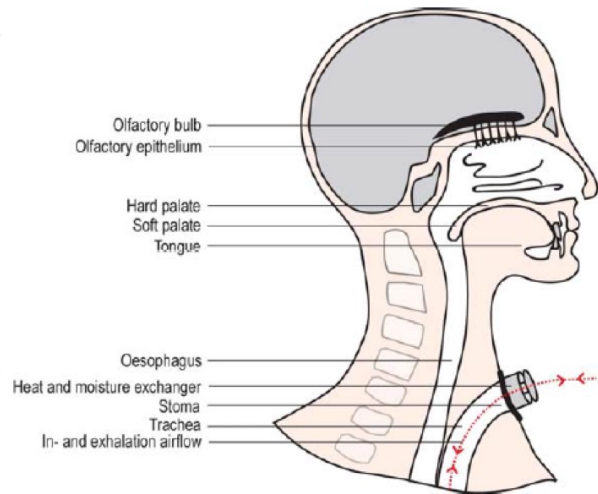
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After laryngectomy, breathing occurs directly through the stoma and not through the nose any longer. This means that odors do not reach the olfactory organ in the nose any more, as depicted to the right.

Only in case of a strong external airflow, such as a gust of wind, sometimes odors can be sensed after laryngectomy.

Some laryngectomees occasionally still can smell strong or volatile scents.

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## REGAINING THE SENSE OF SMELL AFTER LARYNGECTOMY

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After laryngectomy, you are not breathing through the nose any longer, making the sense of smell less good than before your surgery. Fortunately, there is a special technique, which allows re-establishing an airflow through the nose. When this technique is applied correctly, this airflow then can transport odors through the nose, allowing you to smell again. This makes your sense of smell independent of a gust of wind or the strength or composition of an odor.

This technique is called the Polite-Yawning Smell Technique.

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## HOW TO APPLY THE POLITE-YAWNING SMELL TECHNIQUE

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The polite-yawning technique should be performed as follows:

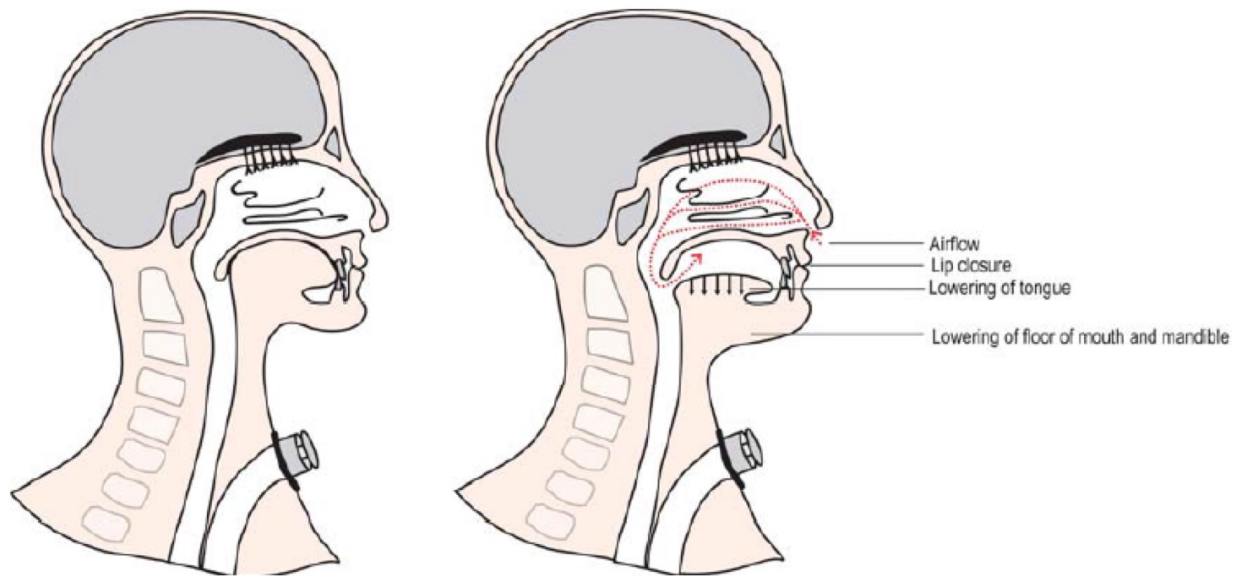
- Keep your lips closed;
- Move the mandible/jaw and floor of mouth downwards;
- At the same time, the tongue should descend from the palate downwards;
- Perform these movements relaxed and repetitive;
- Do not connect breathing with these movements, but breathe independently and in a quiet tempo;
- Use as little effort as possible for these movements.

These combined movements resemble yawning while keeping the lips closed. In the next two slides, you will see some images and a video showing the polite-yawning technique in more detail.

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## OUTLINE OF THE POLITE-YAWNING SMELL TECHNIQUE

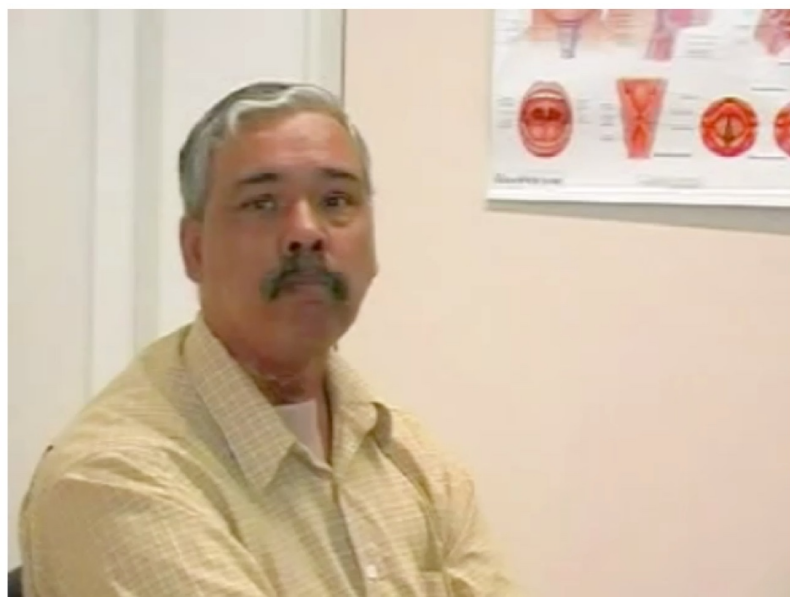




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## DEMONSTRATION OF THE POLITE-YAWNING SMELL TECHNIQUE

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## TRY TO APPLY THE POLITE-YAWNING SMELL TECHNIQUE YOURSELF

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The polite-yawning technique thus contains the following elements:

- The lips should be kept closed;
- The tongue should move downwards;
- The mandible/jaw and floor of mouth should move downwards;
- The movements should be carried out in a smooth tempo;
- Breathing is calmly and independently;
- Perform the movements not too weak and not too forcefully.

When you start practicing, it is important to check your movements in a mirror. Make sure you carry out all elements correctly.

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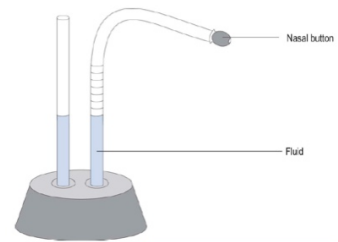
## THE MANOMETER

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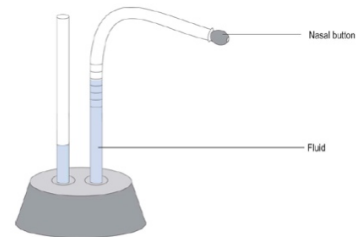
A mirror alone might not be sufficient to learn to smell again. To visualize whether the polite-yawning technique is carried out correctly for creating a nasal airflow, your SLP can instruct you to practice with a manometer if that is available.

The manometer is filled with a liquid up to the lower mark line. The nasal olive should be placed in one nostril, while keeping the other nostril closed with a finger.

If the polite-yawning technique is correctly carried out, the liquid in the column with the tube is moving up towards the nose.



Manometer with liquid



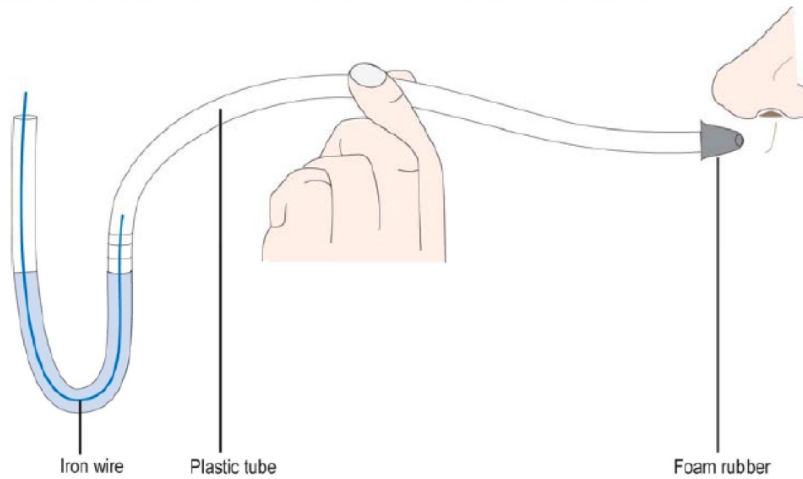
Manometer with correct liquid movement

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## MAKE YOUR OWN MANOMETER

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You can make a manometer yourself, e.g. from a piece of soft silicone or plastic tubing and a piece of foam rubber, as shown here.



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## DEMONSTRATIONS OF THE USE OF THE MANOMETER

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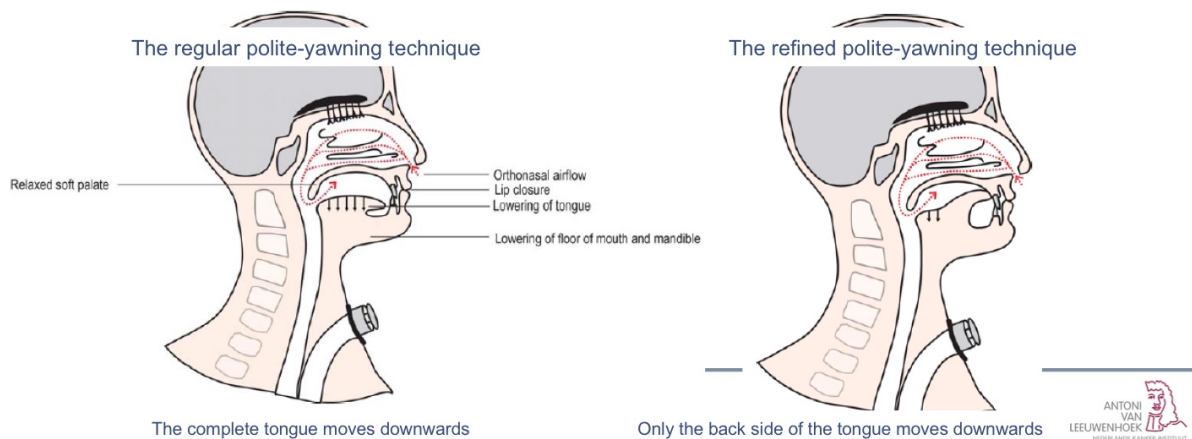
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## MAKING SMELLING LESS CONSPICUOUS

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By only moving the back side of the tongue, when applying the polite-yawning technique, your smelling becomes less visible. This way of smelling, therefore, is called the refined polite-yawning technique.

The images below visualize the difference in tongue movements between the regular and the refined technique.



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## DEMONSTRATION OF THE REFINED POLITE-YAWNING TECHNIQUE

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## USING THE (REFINED) POLITE-YAWNING TECHNIQUE IN EVERY DAY LIFE

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To optimally benefit from the polite-yawning technique, it is necessary to apply the method very frequently. Especially, of course, in situations where odors are important, e.g. during cooking and eating, or when applying a new fragrance. Keep in mind that smelling is not "passive" any longer and by also applying the polite-yawning smell technique frequently in less obvious situations, smelling will become more of an automatism again, a more natural part of every day life. Using the (refined) polite-yawning technique at regular intervals during the day is the best way to achieve this. Apply the technique when you enter a new room, or whenever you meet a new person.

For everybody a different situation can be most convenient to apply the technique. Try to figure out for yourself what situation/moments do suit you best.

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## EXAMPLES OF USING THE (REFINED) POLITE-YAWNING TECHNIQUE IN EVERY DAY LIFE

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## REGAINING THE SENSE OF SMELL AFTER LARYNGECTOMY

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Correct application of this smell technique is more difficult than it initially might seem to be. Especially the refined polite-yawning technique can be difficult to master. Therefore, an [illustrated text book](#), including a patient manual (page 60), is available at the website of the Netherlands Cancer Institute. This describes what you can do when you have trouble to carry out the polite-yawning smell technique. This link might also be interesting to share with your SLP, in case she/he is not familiar with this technique. If, despite studying this manual, the application of the polite-yawning technique still remains difficult for you, it is advisable to (again) ask the SLP for help and guidance.

Success with regaining your sense of smell!



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