

Olfaction regained, using the Polite yawning technique. A brochure for laryngectomees

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**‘Reukrevalidatie na totale laryngectomie; een handleiding
voor logopedisten’**

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1. Introduction

Some time ago you underwent a total laryngectomy, a surgical procedure removing your voice box. You experience the consequences of this operation daily. Speech and breathing are altered, but also the act of smelling is not the same as it was.

This brochure is about the act of smelling following a laryngectomy, using a special smell rehabilitation method. It should help you to apply this method correctly and should lead to you being able to smell well once again.

2. Olfaction (sense of smell)

The nose contains an important sensory organ, able to perceive odours. Odours play significant roles in our lives, in various ways. They may bring about a certain mood or help you remember something. By smelling odours, the formation of saliva may be stimulated allowing you to taste. By smelling specific alarming odours like gas and smoke, you may be incited into action. Thus, the sense of smell has a considerable impact on many aspects of daily life.

To be able to smell, it is necessary that air flows into the nose, past the sensory olfaction organ. This small organ can be found in the upper part of the nose, and has elements, which are able to trap odours. Information about the odours is then sent via nerves to the brain to recognize (is smell) the odour. Normally, air flows along the sensory organ automatically because most people almost always breathe through their nose. This means that odours are perceived automatically, as well.

Research has shown that following a laryngectomy people are not able to smell as well as before. This is the result of the fact that laryngectomees discontinue breathing through their nose and are only able to breathe via their tracheostoma. Airflow therefore does not pass the olfaction organ in the nose, and thus smelling is no longer automatic. The nose and its olfaction organ have not been altered during the operation because only the throat area is affected during a laryngectomy. This implies that smelling can still take place via the nose. However, this will be more difficult after a laryngectomy because the air does not flow past the sensory organ anymore. You probably recognize this. Perhaps you are unable to smell certain odours or have more difficulty smelling them. And perhaps there are certain odours you can smell particularly well. An example of this may be when you walk outside, and odours are carried by the wind into your nose. The odours are still able to reach the sensory organ. In this way, odours may still be smelled following a laryngectomy. This may be the case as well for odours, which are extremely strong, or those, which vaporise quickly.

The Netherlands Cancer Institute/Antoni van Leeuwenhoek hospital has developed a technique allowing laryngectomees to lead air through their nose once again. It allows the laryngectomees to smell odours, which are not extremely strong or vaporise quickly as well. This method is called the polite yawning technique. It has been proven that a high percentage of laryngectomees is better able to smell when making use of this technique. How this works will be explained in the following chapters.

3. Polite yawning technique

The name polite yawning technique implies what is at the core of this method. The basis of the method is a yawning movement, but with the lips closed. In this way air flows into the nose so that odours also enter the nose and are smelled again. This may seem easy, but there are a few important points to keep in mind:

- Close your mouth and keep your lips closed.
- Keep your tongue against the roof of your mouth.
- Now open your mouth, but keep your lips closed.
- When you open your mouth, simultaneously move your entire tongue from the roof of your mouth downwards.

These four points constitute the entire polite yawning technique. It resembles yawning with your mouth closed. Figures 1 and 2 indicate how this works:

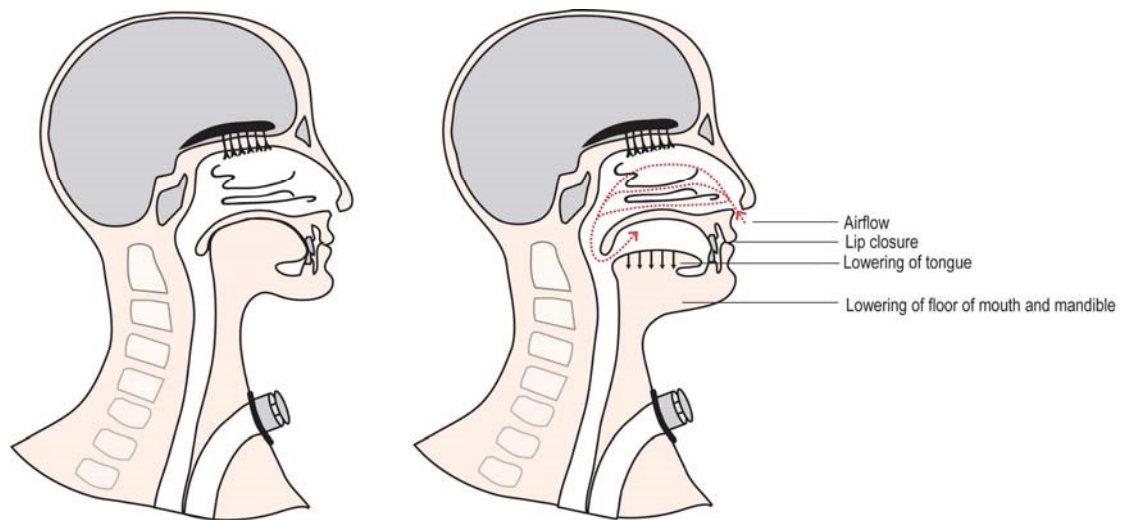


Figure 1 and 2: How the polite yawning technique works

To be able to smell something using the polite yawning technique it is not sufficient to make the movement just once. You will have to repeat the movement many times quickly as though you are chewing on something. It is also important to make the movement in a relaxed manner. This will make things easiest for you and results in the best possible airflow. Make use of a mirror to check that the movement is being made correctly.

Continue breathing regularly while executing the polite yawning technique. If you breathe too quickly or too deeply, the airflow will go only directly through the tracheostoma to the lungs and still miss the sensory organ of the nose completely: in contrast to the situation preceding the laryngectomy, deep breathing will no longer lead to a better perception of odours. Besides, deep breathing may make you dizzy

4. Manometer

Although the polite yawning technique may look fine in the mirror, if no air is flowing past the sensory organ, you will still not smell anything. By using a manometer, you can see if this airflow is being created or not.

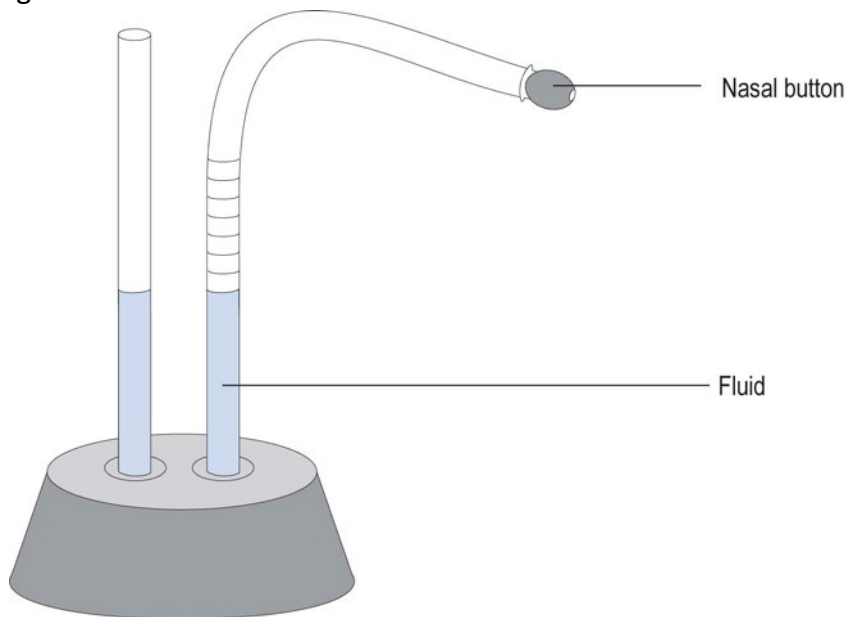


Figure 3: The manometer is ready for use

1. Fill the manometer with water, up to the first line.
2. Hold the nose 'button', attached to the end of the plastic tube, against one of your nostrils. The hole in the button should be inside your nostril.
3. Keep the other nostril closed with your finger.
4. Now execute the polite yawning technique.

If you are carrying out the technique correctly, water should move towards your nose:

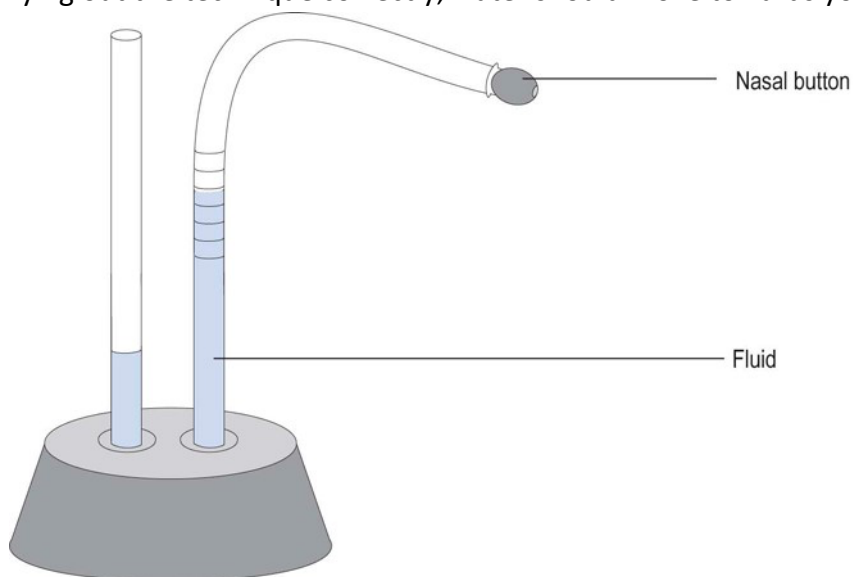


Figure 4: Water is moving correctly, towards the nose

Once you can move the water towards the nose a few times without too much effort, you should practice getting the water to move higher up in the manometer. This should also be done without too much effort. By just moving your tongue from the roof of your mouth downwards with a bit more power and speed, there should be more airflow towards your nose. The movement of the water will also be larger.

The manometer should only be used as an aid when practicing. To use the manometer, one nostril must be closed off. When you have mastered the polite yawning technique and you wish to use the method to really smell something, you will no longer need the manometer. Obviously, it will also be unnecessary to close one of your nostrils then.

If it does not work properly

When performing the polite yawning technique, you must be aware of several things at the same time. This is cumbersome and it is a distinct possibility that water in the manometer will not move at all, or not properly. Water may stay stationary or may even move away from the nose. If this happens, please read the foregoing paragraph attentively once more. Practice the movements again, step by step, with a mirror and without the manometer. Be aware that you perform the four most important points of the polite yawning technique correctly. Attempt the polite yawning technique once again while using the manometer.

If the water remains stationary or it still does not move towards you, then you should read the following to determine what may be doing wrong and how you can correct this.

If water remains stationary or moves only slightly

Check if the reason the water remains stationary is a blockage of the plastic tube, for example because it is pressed shut against the inside of your nostril. The opening in the tube should not be blocked. If the hole in the tube is not blocked, try switching nostrils: usually the one nostril allows for easier airflow than the other. If switching nostrils does not help, then it may be that you have not lowered your jaw sufficiently when executing the polite yawning technique. Make the movements once again in front of the mirror and try to move your jaw and tongue further downwards. Pretend to chew something large, but keep your lips closed.

If water moves upwards in the wrong tube

Figure 5 is indicating this. The cause of this is that the lower jaw and tongue are moving stronger upwards than downwards. Discontinue making the movement and keep your teeth and lips together. Press your tongue against the roof of your mouth. This is the starting position of the polite yawning technique. Place the nose button of the manometer in your nostril and close the other nostril with your finger. Open your mouth as wide as possible but keep your lips together. Simultaneously while opening the mouth, move your tongue down from the roof of your mouth towards the floor of your mouth. At that moment the water in the manometer should move towards your nose.

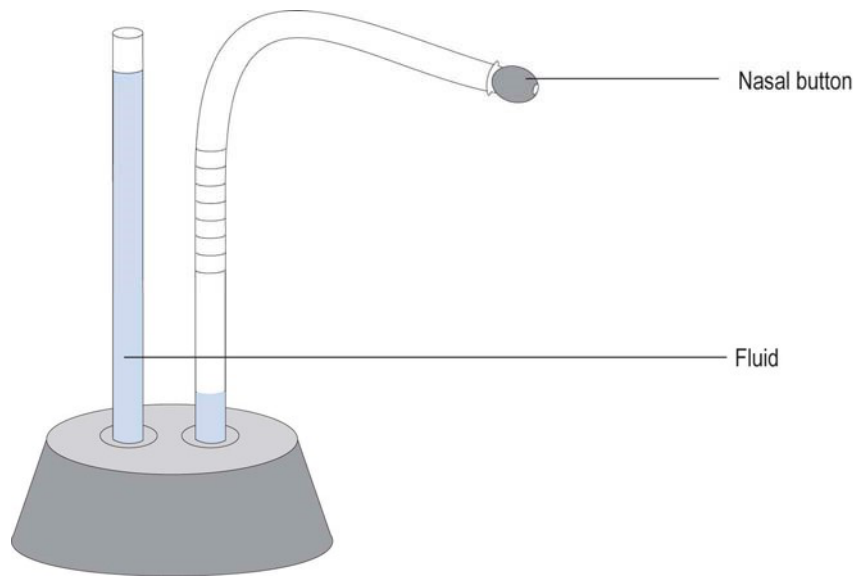


Figure 5: Water in the manometer moves the wrong way

If you have dentures, it may be helpful to start practicing the technique without having your dentures in. You will be better able to feel your tongue against the roof of your mouth and subsequently that it moves downwards.

How can you avoid irregular breathing and shortness of breath?

If you are still used to breathing deeply to smell something, you may become short of breath or dizzy when practicing. Before the laryngectomy it was most natural to breathe in to smell something. Now that method is most harmful. If you breathe in too deeply while trying to smell, you may even start to hyperventilate. Attempt to continue relaxed regular breathing, independent of the movements of your tongue and jaw. If this does not work, then you should practice without breathing by temporarily closing the opening of your tracheostoma with a finger. If it seems that the water is moving correctly by using this method, try to reduce it while breathing regularly.

5. Olfaction using the polite yawning technique

When you have mastered the polite yawning technique you should try some real smelling exercises. Try smelling things like coffee, aftershave, soap, flowers or soup. Again, you do not have to close off one nostril while doing this. If you are able to smell most odours in this way, try getting used to the polite yawning technique by practicing regularly and at set moments. Try to find moments that are practical for you to use the method. For example, you could practice every time you enter a new room, every time you meet someone, or when you are cooking or are going to eat. In this way, smelling will seem most like the way it was before the operation. The polite yawning technique will become more of a habit and automatism, and therefore more a part of who you are.

6. Less obvious olfaction

Finally, you may attempt to make the movements smaller and thereby less obvious. By keeping your teeth pressed together, holding the tip of your tongue still in the front of your mouth and

only moving the back of your tongue from the roof of your mouth downwards, only a slight movement of the floor of the mouth will be seen. The movement of the lower jaw is eliminated. In this way the movement and thereby the act of smelling will be less obvious to people around you.

7. Summary

This brochure contains a lot of information, which may be summarized in the following “ten commandments”:

How can I smell well?

Pretend to yawn politely or chew on something large by:

1. Keeping the lips closed.
2. Moving the lower jaw and the floor of the mouth downwards.
3. Moving the tongue from the roof of the mouth downwards as well.
4. Repeating these movements quickly.
5. Doing this not too powerful.
6. Keeping breathing calm and regular.
7. Practicing these movements with a manometer.
8. Using the polite yawning technique to smell practice odours.
9. Practicing making the movements less obvious, by refining the movements (with the help of the speech therapist).
10. Using the polite yawning technique so frequently that it becomes second nature.

Hopefully the polite yawning technique will help you so much during smelling that you will be able to smell things at every moment you use the method.

If the polite yawning technique is unsuccessful in your situation do not hesitate to ask your speech therapist to help you again. Your speech therapist can give you more information if you are interested.

Personal points of interest:

Your speech therapist:

Name:

Address:

City and zip code:

Telephone number:

Contact on: Monday Tuesday Wednesday Thursday Friday Fax: E-mail:

HOW TO MAKE YOUR OWN MANOMETER

As previously described in this manual, it is necessary to make the nasal airflow visible so that the polite yawning technique can be optimally acquired. Both SLP and patient will then have the information they need to be able to perform the technique. Airflow may be visualized with the help of a manometer, which is connected to the nose. Many versions of such a manometer are possible. For example, there is an electronic version, which displays a negative figure when there is pressure from below. We have also made a manometer with an electrode, which makes a beeping sound when the fluid in the manometer reaches the electrode. In this way there is not only visual but also audio feedback. A nasality measuring device, which used to be available to the SLP, may also be used if inverted. Because this apparatus is quite small it is difficult to get a good idea of how much air is displaced.

A simple version of a manometer can be made easily and cheaply. There are many ways to do this. Two examples follow.

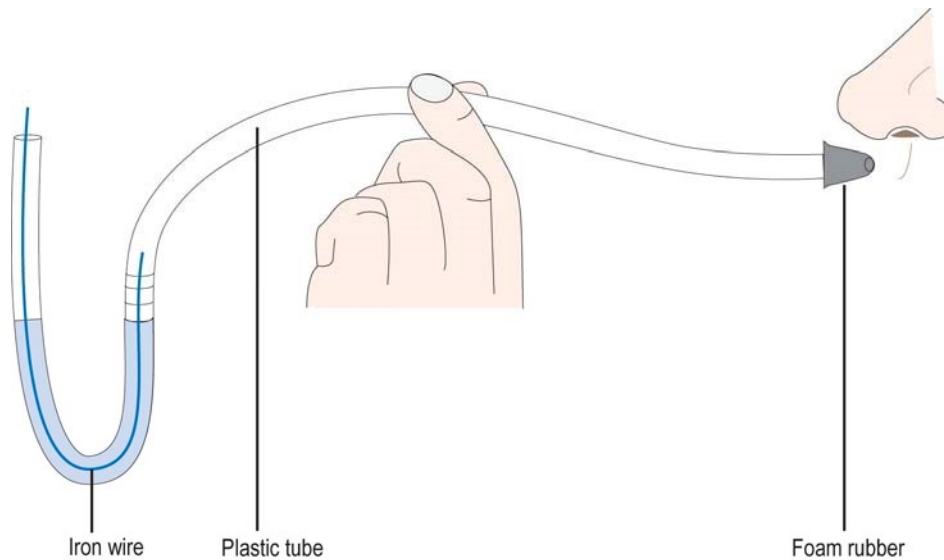
Manometer with iron wire

Materials:

- 50 centimetres of transparent plastic tube, with a diameter of 8 to 10 millimetres
- A block of foam rubber of about 3 by 3 centimetres, which may function as a nasal 'button'
- 35 centimetres of thin iron wire
- A magic marker
- A drinking glass

Push the iron wire up through the plastic tube. Make sure the ends of the tube are free of wire. Cut the foam rubber into a conical shape and make a hole in the length of the cone, which is a little smaller than the diameter of the tube. Push the foam rubber onto the end of the tube, broad side first. Bend the tube with iron wire into a U-shape. At approximately one and a half centimetres above the curve, place indication lines on the vertical part of the tube, on the end where the foam rubber has been placed. These should be horizontal lines, placed at every half centimetre. Fill the tube with fluid, up to the first indication line. The manometer is ready to use. The manometer may be placed in a drinking glass so that the fluid does not escape, and the hands are kept free to perform the polite yawning technique.

Keep in mind that the iron wire may start to rust after some time. A 'fresh' manometer should therefore (and for hygienic reasons) be constructed for each new patient.



A self-made iron wire manometer

A nasal button may be the best way to keep outside air out of the nose when using a manometer. An original nasal button is, however, used by Otolaryngologists and is not easy to come by or copy. The end of the plastic tube may be placed in the nostril without a nasal button if it would not be so unpleasant and at times irritating and would make it difficult to close off the nostril around the end of the tube. Using a piece of foam rubber is a compromise between an original nasal button and just leaving the tube as it is. The foam rubber protects the nostril from unpleasantness and even injury, but the orthonasal airflow to the nose is more diffuse. It is therefore of great importance to close off the opening of the nostril around the tube, obviously without actually closing off the tube itself.

Manometer with cardboard

The plastic tube may also be taped onto a piece of cardboard. Use of iron wire to bend the tube into shape is then rendered unnecessary. Besides this, the cardboard may function as a type of stand so that the apparatus does not fall over. The drinking glass is then also superfluous. Indication lines may then be made on the cardboard itself.