

HOW TO MAKE A MANOMETER

As previously described in this manual, it is absolutely 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 also for hygienic reasons) be constructed for each new patient.

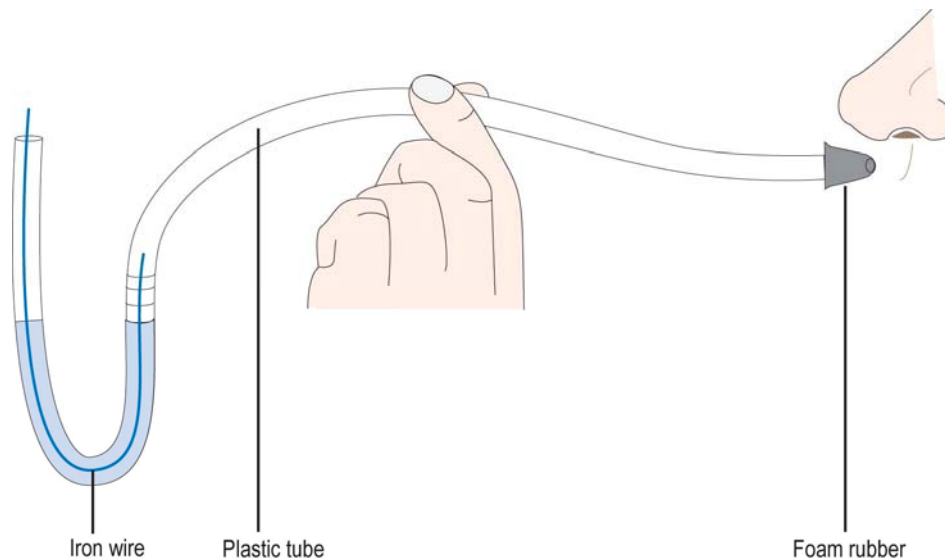


Figure 16: A self-made iron wire manometer

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.