



speech



the impact of a cleft palate

Introduction

This booklet is produced by the Cleft Lip and Palate Association in conjunction with Specialist Speech and Language Therapists, and endorsed by the Speech and Language Therapy Special Interest Group. It is intended for parents and professionals working with children who have a cleft palate or other palate-related problems such as a sub-mucous cleft.*

It explains how we make different speech sounds, and how the palate plays an important part in how we speak. It also describes what happens if the palate isn't working very well, as in some cases of cleft palate. Finally, what can be done to improve any speech difficulties is discussed.

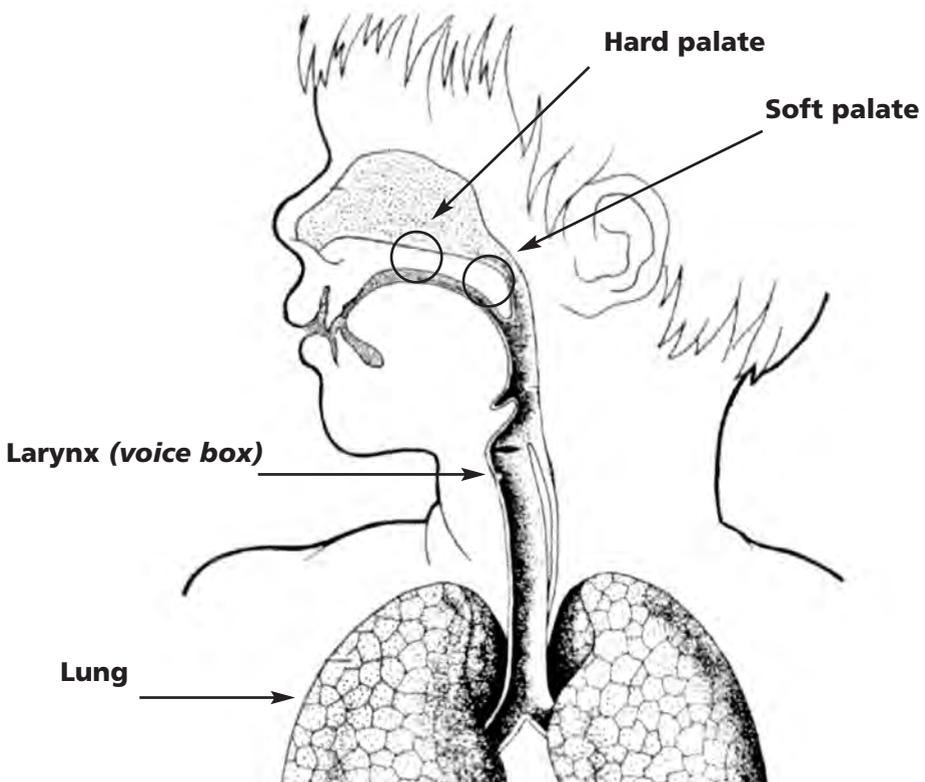
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Q. How do we make speech sounds?

A. When we speak we use air from our lungs, the voice box in our throats and the different parts of our mouths, such as the tongue, teeth, lips and hard and soft palate.

Air from the lungs passes through the vocal cords in the voice box producing a basic sound. This sound is changed into different speech sounds by movements of the lips, tongue and soft palate.



Q. How do we make different sounds?

A. We make sounds by modifying the airstream using the articulators (lips, teeth, tongue and palate). There are different ways in which these parts move together:

One difference between different sounds is how close to or far apart from each other the articulators are:

- sometimes they touch firmly e.g. *p, d, k*
- sometimes they are very close together e.g. *v, s, sh*
- sometimes they are quite far apart e.g. *w, y, a, e*

Another difference is to do with where the sounds are made in the mouth.

Some sounds are made using:

- both lips e.g. *m, p, b*
- lips and teeth e.g. *f, v*
- the front of the mouth e.g. *t, n, l, s*
- the middle of the mouth e.g. *sh, ch*
- the back of the mouth e.g. *k, g*

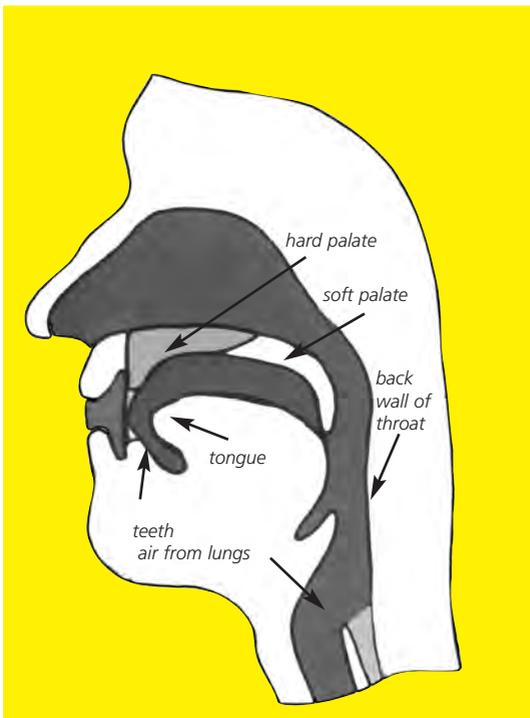
There are also differences in whether the vocal cords are moving or not:

- vocal cords still e.g. *p, f, t, s, ch*
- vocal cords moving e.g. *b, v, d, z, j*

The palate also plays an important part in how we speak, and is explained in some detail in the following pages.

Q. What is your palate?

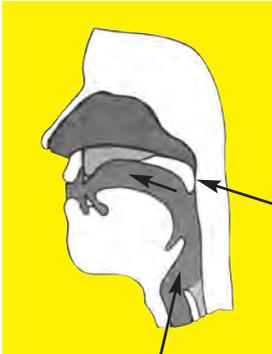
A. The palate forms the roof of your mouth. It is made up of two parts: the hard palate at the front (towards your top teeth), and the soft palate at the back (towards your throat). The hard palate is the bony part. The soft palate is made up of muscles which move when you talk or swallow. If you feel the inside of your mouth with your tongue, you will be able to feel the difference between the hard and the soft palate.



Side view of face to show palate

Q. What does your palate do when you speak?

A. The soft palate is important in speech because it moves upwards and backwards when you talk. This movement, combined with the movement of the walls of the throat itself, separates the nose from the mouth, and makes sure that no air escapes inappropriately from the nose. This is necessary in order to make most speech sounds.



air from lungs

figure 2

The soft palate is raised against the back of the throat, so that no air escapes through the nose.

The soft palate is up and air passes through the mouth. This is the position of the palate for most speech sounds, e.g. p, t, d, k, g, f, s, sh, ch

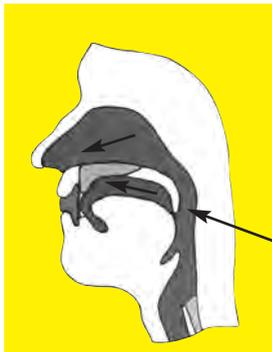


figure 3

The soft palate is lowered and air passes through the nose and the mouth. This is the position of the palate for nasal speech sounds, e.g. m, n.

Q. What happens if your palate doesn't work very well?

A. If your palate does not move very well, this can affect speech in 2 ways:

Speech may sound nasal if the palate does not separate the nose from the mouth properly (see figure 2) and allows air to escape into the nose when it shouldn't. This can give speech a nasal tone (the opposite to how you sound when you have a bad cold and a blocked nose).

Some sounds may be difficult to make if the palate is allowing air to escape into the nose when it shouldn't. This means that there is less air left in the mouth than there needs to be for some sounds to be made clearly. Some sounds might therefore seem weak or be replaced by incorrect or unusual sounds.

Q. How does the speech and language therapist assess how well a child's palate is working?

A. A child with a cleft palate must be seen by the speech and language therapist on the cleft team to assess how well the soft palate is working during speech. Other children who do not have cleft palate but who have nasal speech are also seen by the speech and language therapist in the team. The specialist speech and language therapist will be able to confirm that a child's speech is developing correctly or whether there are any concerns. For a very young child information can be obtained from talking to the parents, playing with the

child, and listening to the child's speech. For older children the speech and language therapist will use a more formal test of sounds and sentences. Instrumentation, such as a nasometer (to measure air coming down the nose) may also be used. Speech will often be recorded on video or audio tape. The speech and language therapist will look in the child's mouth to see the soft palate, teeth formation and whether there are any fistulae (holes) in the palate. This will give some information but if the child's speech is nasal, more detailed tests will be needed. The tests are:

Videofluoroscopy

Children are x-rayed while they are talking, and this is recorded on video. They are asked to copy some specific words, and older children are asked to repeat words and sentences, and to do some counting.

Nasendoscopy

This involves putting a very small bendy tube (an endoscope) which is attached to a camera and video recorder into a child's nose after it has been anaesthetised using a spray or a piece of cotton wool soaked in anaesthetic. An injection is not necessary. The child is asked to repeat words and sentences and the test is video-recorded. The endoscope view shows what is happening in the palate and throat from above the palate and the walls of the throat.

The x-ray and endoscopy investigations which are usually done in conjunction with the cleft surgeon and a radiographer, give detailed information about the palate and

the walls of the throat, showing how they work together during speech. The tests show the length, thickness, and movements of the palate, and the size, shape and movement of the walls of the throat.

Q. What can be done to improve a child's speech?

Surgery

An operation on the palate or the throat may be suggested for some children. Other children, without an obvious cleft palate but with an extra large throat (occasionally exacerbated by the removal of adenoids), a very small palate, or a palate which does not move very well, might also require surgery.

Surgery can help reduce the amount of air getting into a child's nose as he/she speaks and modifies the nasal voice quality. This also has the effect of providing more air in the mouth to facilitate progress with sounds in speech therapy. There are many different kinds of palate operation, and the surgeon and speech and language therapist on the cleft team will choose the best one for each individual child.

Speech and Language Therapy

The speech and language therapist will assess whether the child is likely to grow out of speech errors or will benefit from therapy. If therapy is needed, the therapist decides which sounds need to be worked on for each child, and may recommend how often they will need help. Often therapy is undertaken by a therapist based nearer the home of a child in liaison with the specialist speech and language therapist in the cleft team. Family help in encouraging children to practise

speech and language exercises is essential.

Speech and language therapy alone may not be enough for some children. Other specialists may need to be involved, and surgery may sometimes be needed in addition to speech and language therapy. Your speech and language therapist and surgeon will discuss these sorts of decisions with you.

Monitoring

It may be that the team decide that it is important to monitor the progress of some children over time; sometimes it may become apparent that surgery is not necessary.

Q. Do all children born with cleft palate have the same speech difficulties?

A. No

Just in the same way that every child born with a cleft palate is unique and individual, so is the development of their speech and language. The majority of children with a repaired cleft palate learn to talk easily, whilst others may have more difficulty. If a child has speech and language difficulties other than those caused by a cleft palate, these will also need to be considered. It is worth remembering that any child can have speech problems. A cleft palate is not always the reason for speech errors.

Q. Are there other factors which can affect a child's speech?

Hearing difficulties. Any hearing loss, e.g. due to glue ear, can affect a child's ability to copy and learn sounds.

A fistula (a hole in the palate remaining after palate repair) can affect the way that sounds are made.

Teeth which are irregular or misplaced and the way the jaws fit together can make small differences to speech sounds.

We recommend that you ask a speech and language therapist who specialises in cleft lip and palate and related conditions to explain in more detail for you any of the information we have given you in this booklet.

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