

## Department of Speech and Language Therapy

# How the voice works

### What is voice?

Voice is the sound produced by vibration of the vocal cords. The vocal cords are located in the larynx or "voice box" and are two bands of smooth muscle that lie opposite each other, stretched across the larynx from front to back.

### The Larynx

The larynx is positioned between the base of the tongue and the top of the trachea or 'windpipe'. It is made up of cartilages, muscles, soft tissue and one bone. The thyroid cartilage, more commonly known as the Adam's apple is the largest cartilage in the larynx and can be seen or felt protruding from the throat, more prominently in men.

### Voice Production

Voice production is dependent on three key elements working together:

Respiration / breathing

Phonation – vibration of the vocal cords within the larynx

Resonance

When the vocal cords are at rest, they sit apart allowing air to pass through the trachea as we breathe in and out. When we decide to produce voice, messages are sent from the brain to the set of muscles involved, to coordinate a precise series of events:

- Muscular activity brings the vocal cords together precisely.
- Air from the lungs passes between the vocal cords blowing them apart and causing them to vibrate, making sound.
- The sound then travels in the air stream through the resonating cavities of the throat, nose and mouth.

## Voice quality

The size and shape of the vocal cords and the resonating cavities help to determine voice quality and to give the individual 'voice print'.

Other factors are readily adaptable and give variety to the sound produced. For example pitch is altered by muscular stretching and relaxing of the vocal cords. High pitched sounds are produced when the cords become thin and taut and vibrate more quickly. Low pitched sounds are produced when the cords are thicker and more lax resulting in slower vibration.

## What can go wrong?

There are many elements involved in good voice production and voice problems usually arise due to a combination of factors. Voice therapy involves identifying these factors and providing advice, strategies and specific techniques to restore vocal health and help you use your voice better.

Your Speech & Language Therapist will discuss this information with you and will be able to show you diagrams, pictures and so on to help make it clearer. If you have any questions please call the speech and language therapy department on 01223 216200.

Please ask if you require this information in other languages, large print or audio format: 01223 216032 or [patient.information@addenbrookes.nhs.uk](mailto:patient.information@addenbrookes.nhs.uk)



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## Polish

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## Portuguese

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## Russian

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## Cantonese

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## Turkish

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## Bengali

### Document history

Authors	Bernadine Page
Department	Addenbrooke's Hospital, Cambridge University Hospitals NHS Foundation Trust, Hills Road, Cambridge, CB2 0QQ <a href="http://www.addenbrookes.org.uk">www.addenbrookes.org.uk</a>
Contact number	01223 216200
Published	March 2009
Review date	March 2011
Supersedes which document?	N/A
Version number	1
Ref	PIN1687