

VOICING & CONSONANTS CH 4

FIRST PART



جامعة ساوة

كلية التربية

قسم اللسة الانكليزية

المرحلة 3

VOICING & CONSONANTS CH 4

FIRST PART

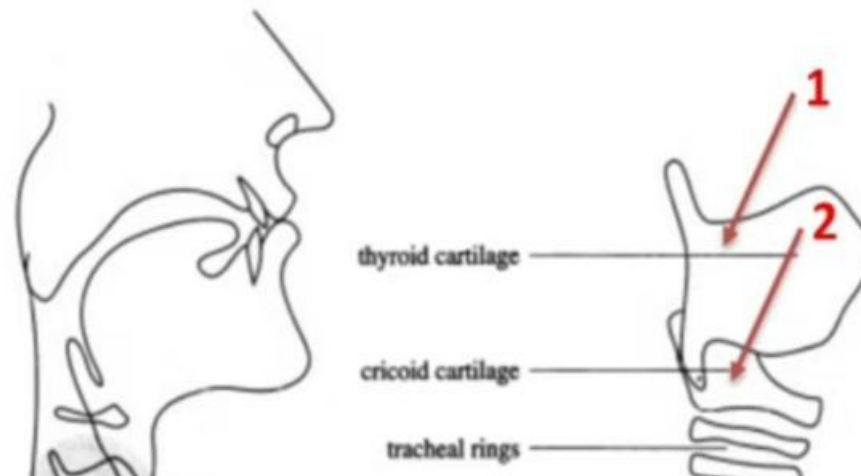
4.1 The Larynx

In the production of speech sounds the larynx has many important functions, but before we can look at these functions we must examine its anatomy and physiology, how it is constructed and how it works.

4.1 The Larynx

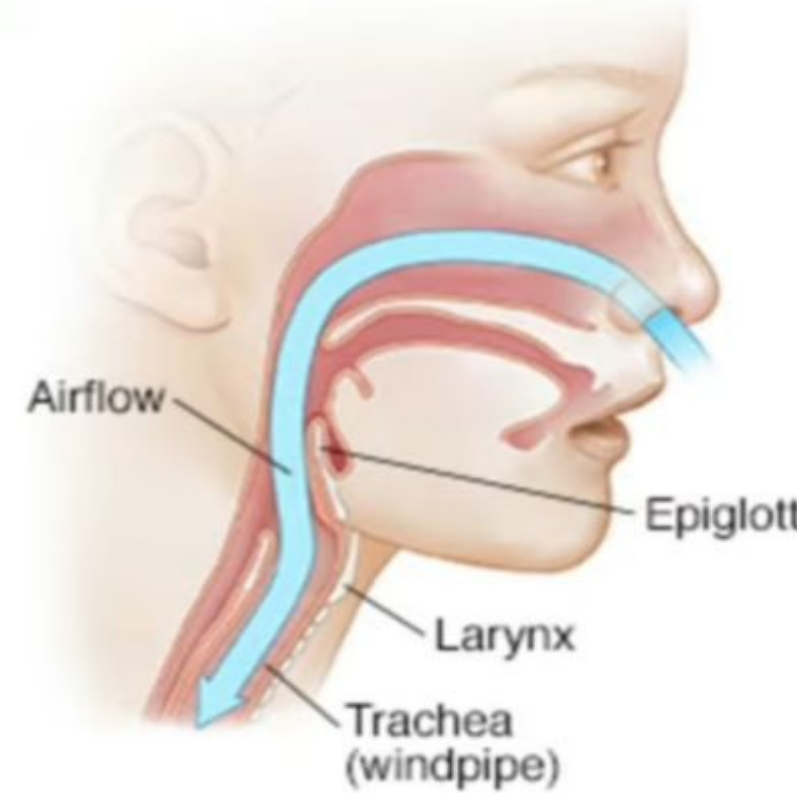
- Larynx is in the neck and it has several parts:
 1. Its main structure is **Cartilage**.

Cartilage: It is a material that is similar to bone but less hard. If you press down on your nose, the hard part that you can feel is cartilage. The larynx's structure is made of two large cartilages.



4.1 The Larynx

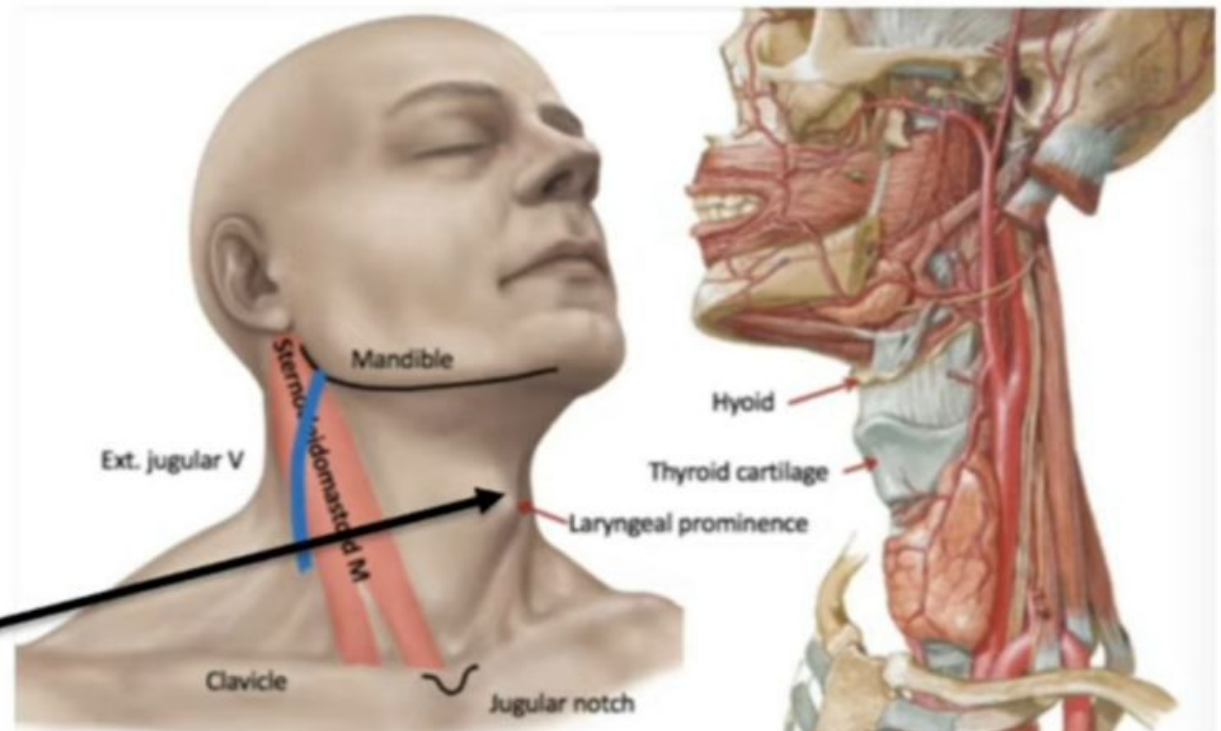
These are hollow and are attached to the top of the **trachea**; when we breathe, the air passes through the **trachea** and the **larynx**.



4.1 The Larynx

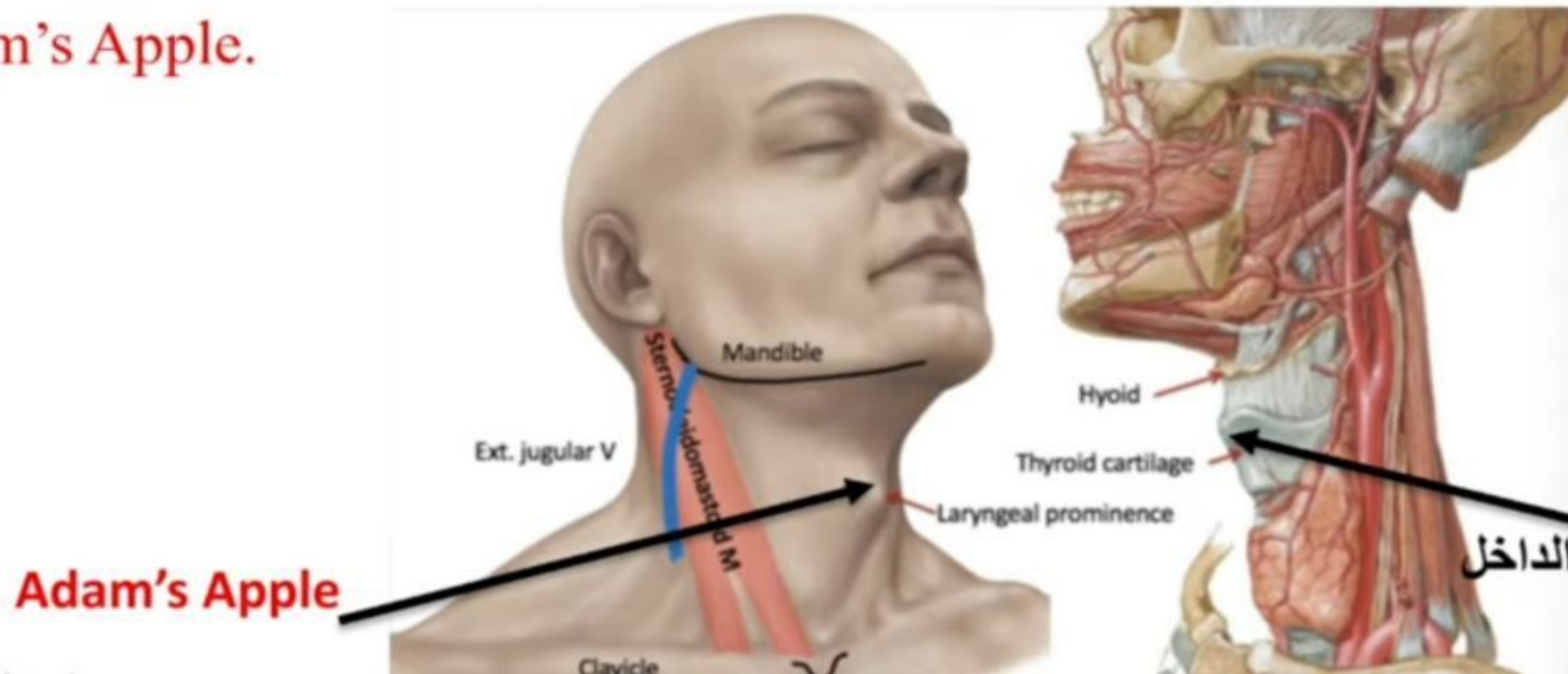
The front of the larynx comes to a point and you can feel this point at the front of your neck - particularly if you are a man and/or slim. This point is commonly called the **Adam's Apple**.

Adam's Apple



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vocal folds

At the front the **vocal folds** are joined together and fixed to the inside of the **thyroid cartilage**. At the back they are attached to a pair of small cartilages called the **arytenoid cartilages** so that if the arytenoid cartilages move, the vocal folds move too.

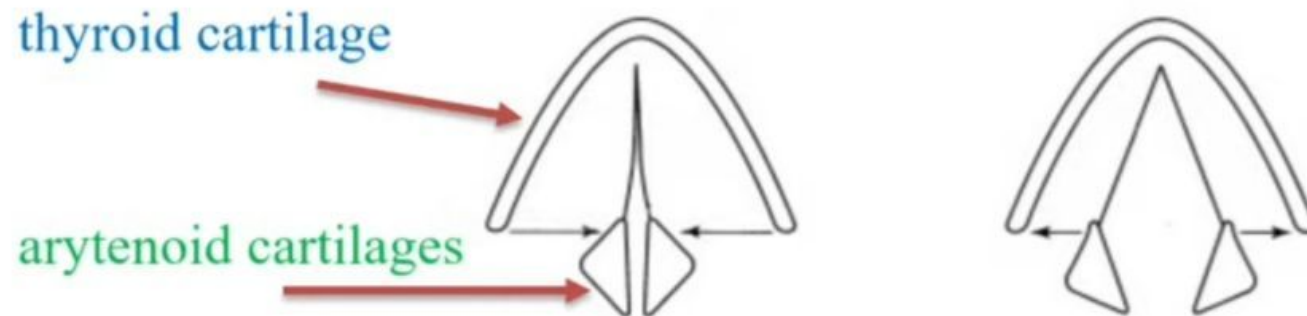


Fig. 12 Arytenoid cartilages causing closing and opening of the glottis

vocal folds

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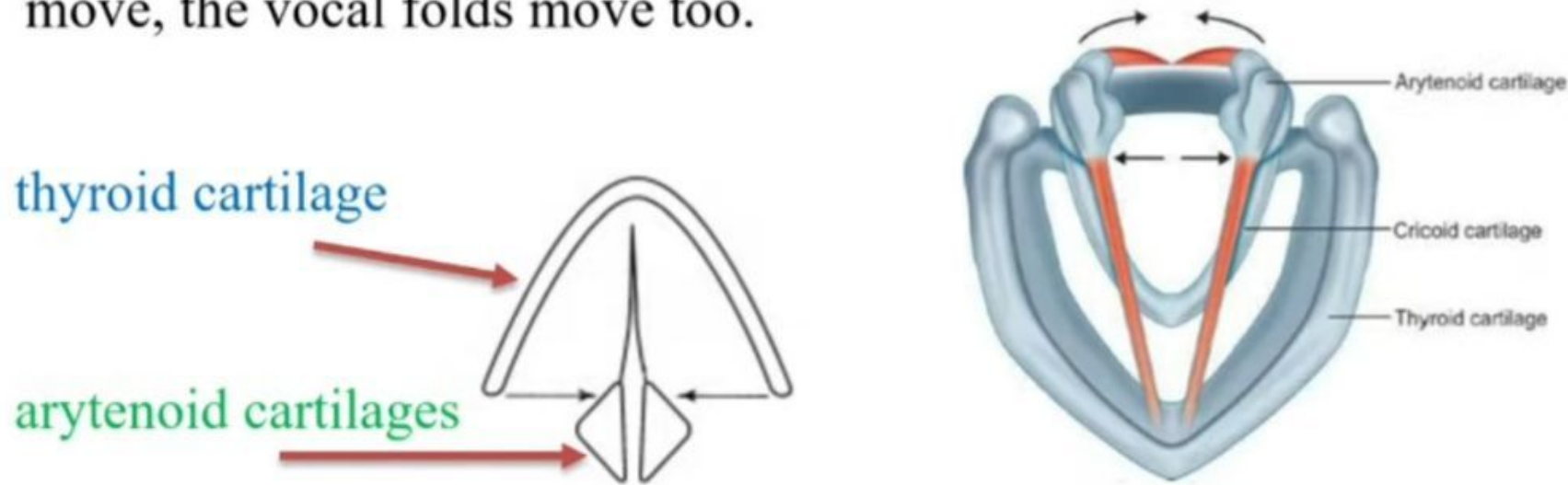
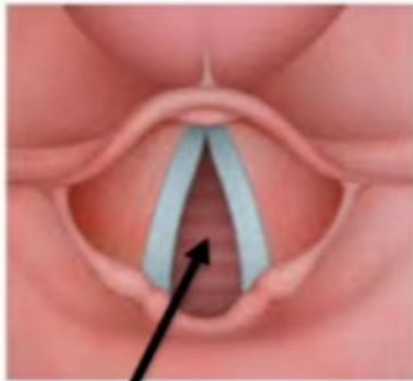


Fig. 12 Arytenoid cartilages causing closing and opening of the glottis

Glottis

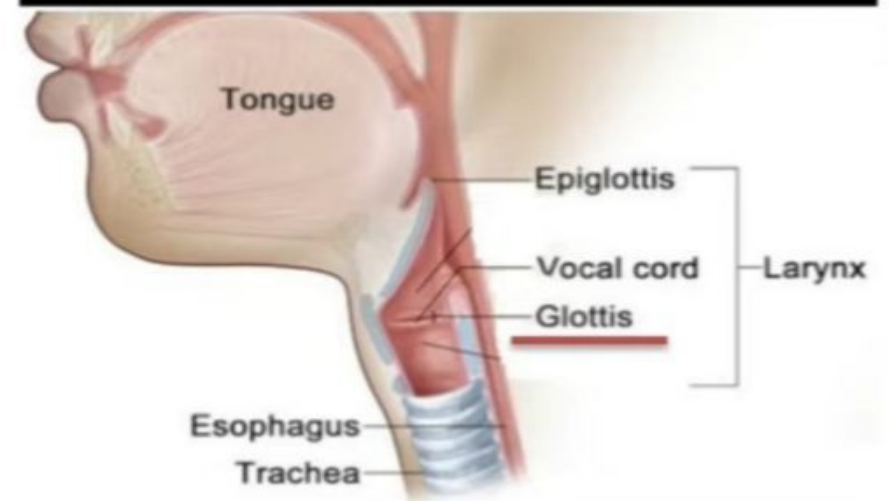
It refers to the opening between the **vocal folds**. If the **vocal folds** are apart we say that the **glottis** is open; if they are pressed together we say that the **glottis** is closed.



glottis is open



glottis is closed



Glottis

Four states of the glottis



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graph TD; A[Four states of the glottis] --> B[Wide part]; A --> C[Narrow glottis]; A --> D[Position for Vocal fold vibration]; A --> E[Vocal folds tightly closed];
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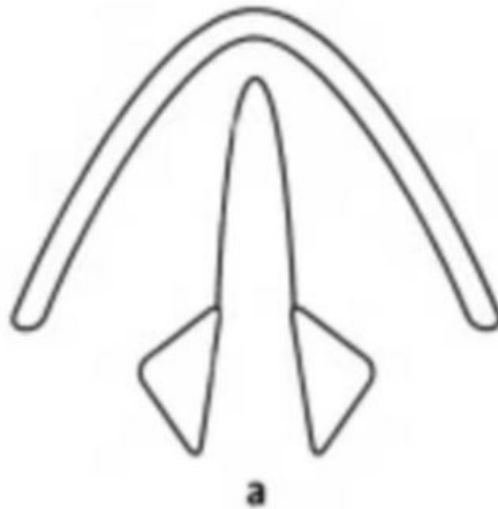
Wide part

**Narrow
glottis**

**Position for
Vocal fold vibration**

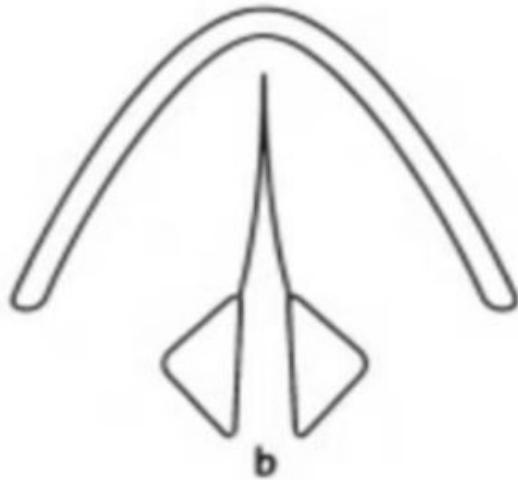
**Vocal folds
tightly closed**

The vocal folds are wide apart for normal breathing and usually during voiceless consonants like p, f, s (Fig. a). Your vocal folds are probably apart now.



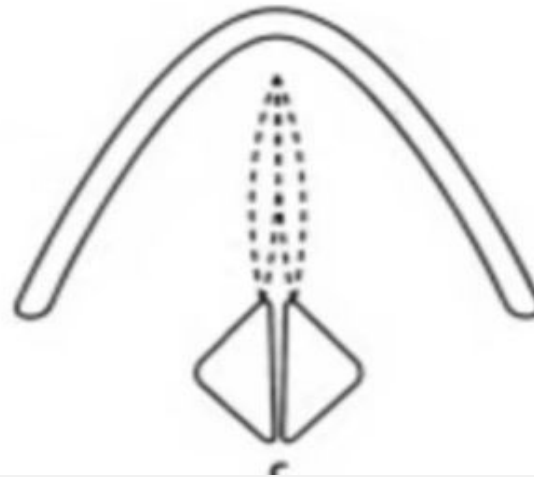
2. Narrow glottis

If air is passed through the glottis when it is narrowed as in Fig. b, the result is a fricative sound for which the symbol is **h**. The sound is not very different from a whispered vowel. It is called a **voiceless glottal fricative**.



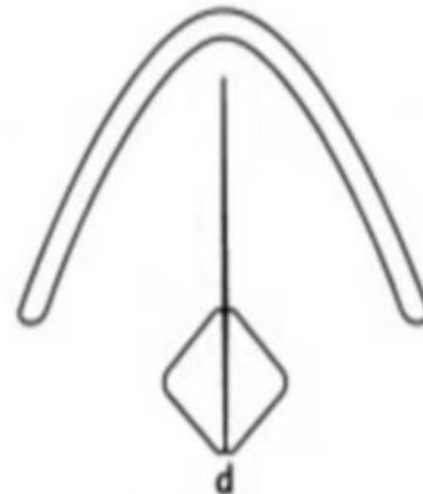
3. Position for vocal fold vibration

When the edges of the vocal folds are touching each other, or nearly touching, air passing through the glottis will usually cause vibration (Fig.c). Air is pressed up from the lungs and this air pushes the vocal folds apart so that a little air escapes.



4. Vocal folds tightly closed

The vocal folds can be firmly pressed together so that air cannot pass between them (Fig. d). When this happens in speech we call it a glottal stop or glottal plosive, for which we use the symbol ʔ.



4.2 Respiration and voicing

When air is moved out of the lungs we say there is **an egressive pulmonic air stream**. All speech sounds are made with some movements of air.

4.2 Respiration and voicing

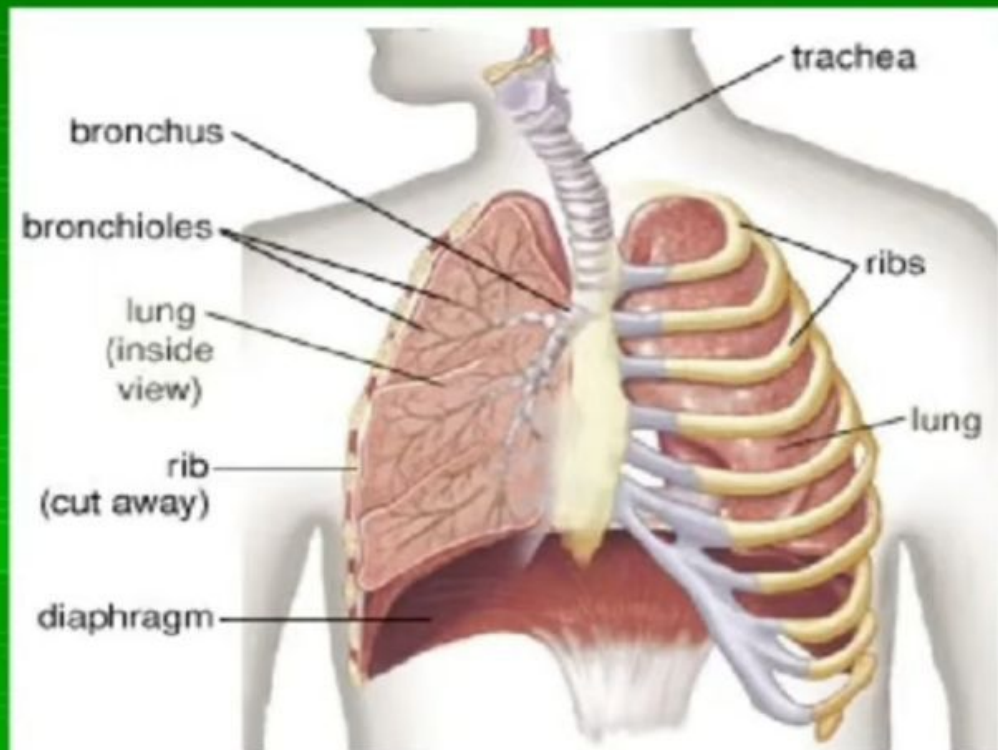
How air is moved in and out of the lungs?

The lungs are like sponges that can be filled with air and they are contained within the rib cage. If the rib cage is lifted upper and outwards there is more space in the chest for the lungs and they expand with the result they take in more air.

4.2 Respiration and voicing

How air is moved in and out of the lungs?

If we allow the rib cage to return to its rest position quite slowly, some of the air is expelled and can be used for producing speech sounds. If we wish to make the **egressive pulmonic air stream** continue without breathing in again. (for example, when saying a long sentence and not waiting to be interrupted). We can make the rib cage press down on the lungs so that more air is expelled.



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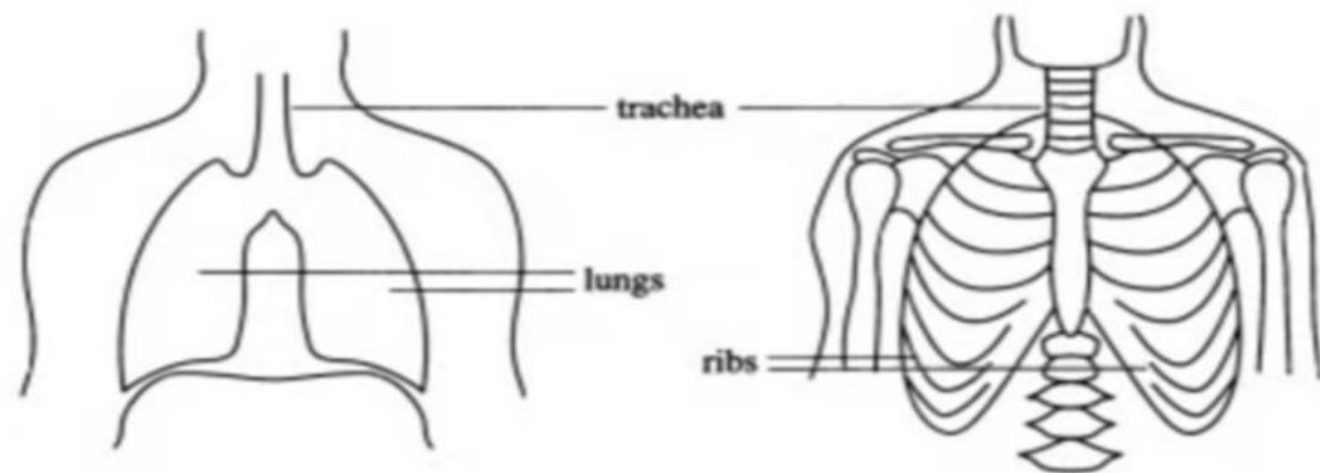


Fig. 14 The lungs and the rib cage

Different variations in the vocal folds for different voicing

- 1. Variations in intensity:** We produce voicing with high intensity for shouting, for example, and with low intensity for speaking quietly.
- 2. Variations in Frequency:** If the vocal folds vibrate rapidly, the voicing is at high frequency; if there are fewer vibrations per second the frequency is lower.

Different variations in the vocal folds for different voicing

3. **Variations in Quality:** We can produce different sounding voice qualities, such as those we might call harsh, breathy, murmured.



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