

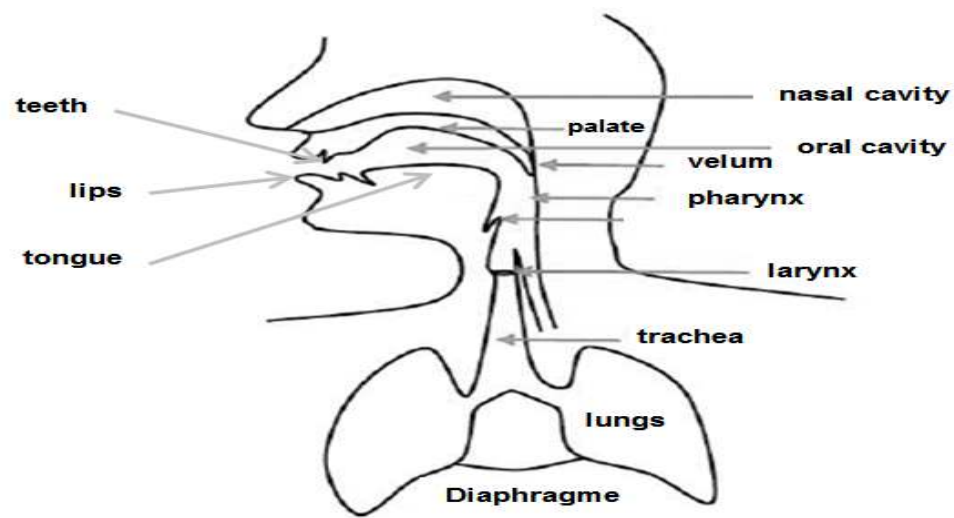
First Year English Phonetics

Lesson: Speech Mechanism

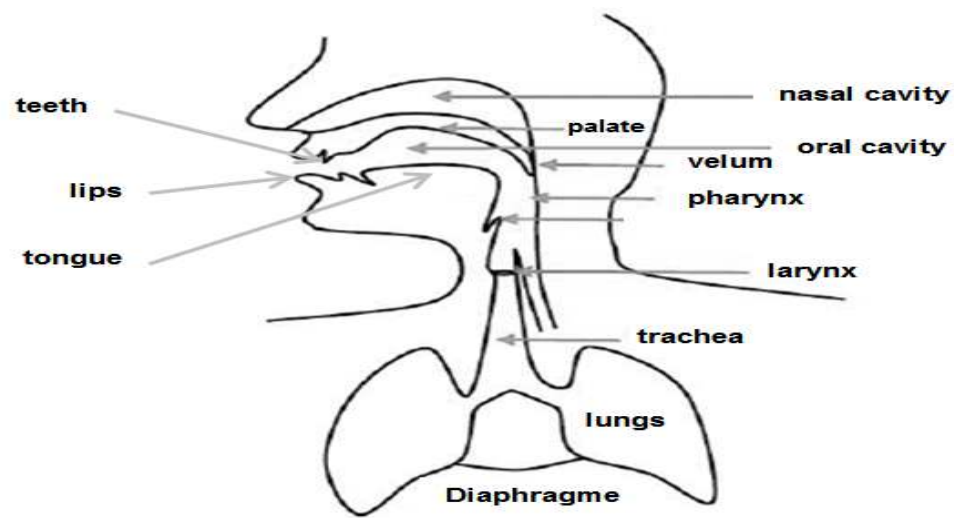
Human Speech Process

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Human Organs of Speech



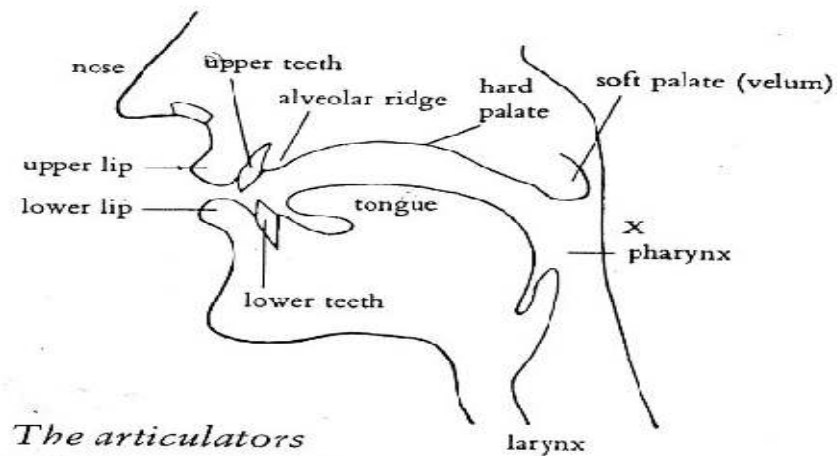
Human Organs of Speech

(1) - Resonators (Vocal tract)

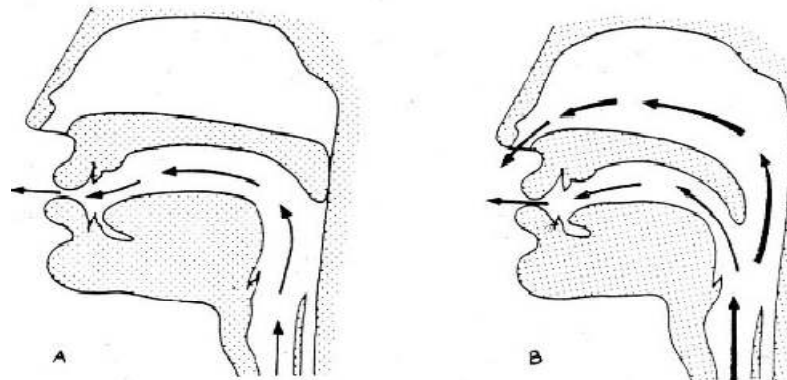
1- Oral cavity 2- Nasal cavity 3- Pharyngeal cavity

(2) - Articulators (Organs of speech)

- 1- Active articulators: a) Upper & lower lips
b) Different parts of the tongue
c) Velum (soft palate)
- 2- Passive articulators: a) upper teeth
b) Alveolar/teeth ridge
c) hard palate



- (3)- State of the velum:** a) Raised (to touch the back wall of the pharynx) (nasal cavity closed).
The air escapes through the mouth and the nose. The result is an oral sound
- b) Lowered (to be away from the back wall of the pharynx) (nasal cavity open)
The air escapes though the nose. The result is a nasal sound



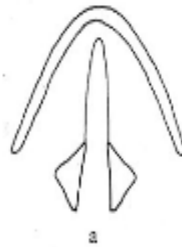
A) Production of oral sound

B) Production of nasal sound

- (4) Action of the vocal chords:**
- a) Apart (no vibration for voiceless sounds)
 - b) lightly together (with vibration for voiced sounds)
 - c) Tightly together (for a glottal stop)



Tightly together

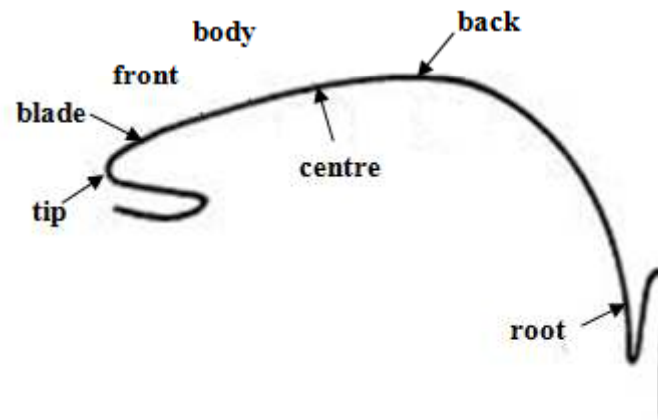


Apart



Lightly together

Different parts of the tongue



(1) Physical functions of human speech organs

- Quick and complicated chains of events. **Result:** Speech manifestation
- Step 1: Psychological related to the brain. Brain + message + organs of speech. **Result:** acoustic disturbances in the air
- Step 2: Physical: Egressive pulmonary breath (airstream). **Result:** speech sound
- Step 3: Air / expelled upward from the lungs through the trachea towards the larynx. **Result:** 1st obstruction (voicing process)
- Step 4: Air goes through the different cavities (resonators). **Result:** the air is submitted to a new shape (resonance) = pharyngeal / oral / nasal sound
- Step 5: Air, then goes through the oral cavity (mouth). **Result:** free / obstructed (complete / partial) (articulated air)

Four speech processes:

- 1) Respiratory Process: (lungs + trachea + nose)
- 2) Phonation Process: (actions of the vocal chords)
- 3) Resonance Process: (Functions of the cavities/resonators)
- 4) Articulation Process: (Function of the active & passive articulators)

(2) Physiological Functions of Human speech organs

1- diaphragm: helps the lungs to contract to perform respiratory process

2- lungs: a- breathing process: inhale & exhale air

b- send the oxygen to the blood cells

c- remove the impurities

d- send out Carbon dioxide and other waste gases

} make the body survive

3- nasal cavity: smells, clean, heat & humidifies the air that is breathed in

4- teeth: used for the digestion of food (chewing process)

5- tongue: tastes, moisten & help in the digestion of food

6- vocal chords: close to prevent food from going down the wrong way (respiratory passage)

Note: Most organs involved in the physiological functions have physical functions