



Stomato 202

Lecture 6

Helper Team

StomatoLec6

Speech

• Speech mechanism

- Speech is a learned reflex. Once developed it becomes innate function يعني بنتعلمها الاول بعد كده بتبقى تلقائية
- Speech is controlled by special neural centers in cerebral cortex
- Controlling an air stream outgoing from lungs to lips produces speech sounds
- Speech depends on adequate:
 - 1) Hearing
 - 2) Intelligence
 - 3) Learning
 - 4) Environment

❖ Stages of speech mechanism

1. Respiration

- Air is the raw material for speech production (هو المادة الاساسية)
- During **exhalation**, air is modified to produce a certain voice
- During long sentences, the person needs to pause to refill his lung with air which is necessary to continue speaking

2. Phonation

- It is the **friction** of air with vocal cords in the larynx (الحنجرة) to produce sound

3. Resonance

- It is changing size and form of pharyngeal tract to produce sound
- **Velopharyngeal valve**: the velum of soft palate and pharyngeal wall

عبارة عن صمام بيتكون من اخر حثة في ال soft palate مع الجدار الخلفي لل pharynx

- Example of resonance: separation of nasopharynx through contact of the soft palate with pharyngeal wall

4. Articulation

- 1) the final character of a speech sound
- 2) produced by temporary obstruction (اعاقة للهوا الي طالع) of air stream through:

a. contact of lips M

b. tongue T

c. teeth Th

d. palate R

e. alveolar ridge supporting natural teeth D

❖ speech organs (lung → lips):

- lung
- larynx
- epiglottis
- pharynx
- soft palate
- hard palate
- teeth
- tongue
- nasal cavity
- lips

❖ types of sounds:

1) according to behavior of vocal cords:

- a) **phonated sounds**: sounds affected by vibration of the vocal cords (voiced sound e.g. vowels, **b**, and **v**)
- b) **breathed sounds**: sounds produced by just narrowing of the vocal tract (e.g. **f** and **p**)

2) according to freedom of air stream:

a) vowels (A, I, U, E, O)

b) consonants:

- 1. Bilabial sounds: (m, b)**
- 2. Labiodental sounds: (f, v)**
- 3. Linguodental sounds: (th)**
- 4. Linguoalveolar sounds: (t, d, s, z)**
- 5. Linguopalatal sounds: (sh, ch, j, r)**
- 6. Linguovelar sounds: (k, g, h)**

3) according to direction of air stream:

a) oral sounds:complete closure of velopharyngeal sphincter directing air into **oral cavity**

b) nasal sounds:incomplete closure of velopharyngeal sphincter directing air to nasopharynx (**m, n, and ng**)

