Anatomy of the larynx
Anatomy of the larynx
Laryngeal cartilages
Laryngeal cartilages

- Hyoid bone
- Epiglottis
- Superior horn of thyroid cartilage
- Thyroid cartilage lamina
- Thyroid cartilage
- Corniculate cartilage
- Arytenoid cartilage
- Vocal ligament
- Inferior horn of thyroid cartilage
- Cricoid cartilage
- Trachea
Cartilages of The Larynx
Extrinsic Ligaments of the Larynx
Extrinsic Ligaments of the Larynx

- Thyro-hyoid membrane
- Crico-tracheal membrane
Intrinsic Ligaments of the Larynx
Intrinsic Ligaments of the Larynx
Extrinsic Muscles

- Omohyoid
- Sternothyroid
- Inferior constrictor
- Stylopharyngeus
- Stylohyoid
Intrinsic muscles

**FUNCTION:** Close the glottis by adducting the arytenoid cartilages.

**Oblique Arytenoids**

**FUNCTION:** Close the glottis by adducting the arytenoid cartilages.

**Transverse Arytenoids**

**Posterior Cricoarytenoids**

**FUNCTION:** Attaches to the arytenoid cartilages. They abduct the vocal folds and widen the glottis. They are the only muscles that abduct the folds.

Muscles of the Larynx (posterior)
Intrinsic muscles

- Aryepiglottic muscle
- Oblique and transverse arytenoid muscles
- Thyroepiglottic muscle
- Thyroarytenoid muscle
- Posterior cricoarytenoid muscle
- Thyroid articular surface
- Cricothyroid muscle (cut away)
- Conus elasticus
- Lateral cricoarytenoid muscle
- Epiglottis
Intrinsic muscles
Laryngeal cavity

- Supraglottic region
- Glottic region
- Subglottic region
Normal Larynx

- posterior commissure
- proximal trachea
- true vocal fold
- false vocal fold
- anterior commissure
Blood supply
Innervation of the larynx
Innervation of the larynx
Innervation of the larynx
Vagus Nerve

Superior laryngeal nerve

Internal laryngeal nerve

Sensory above the vocal cords

External Laryngeal nerve

Motor to cricothyroid muscle

Sensory below the vocal cords

Motor to all intrinsic laryngeal muscles except cricothyroid

Recurrent laryngeal nerve
Action of Intrinsic Muscles

- Cricothyroid joint (pivot point of movement)
- Action of cricothyroid muscle: Lengthening (increasing tension) of vocal ligaments

- Action of posterior cricoarytenoid muscles: Abduction of vocal ligaments
- Action of lateral cricoarytenoid muscles: Abduction of vocal ligaments

- Action of arytenoid muscle: Adduction of vocal ligaments
- Action of vocalis and thyroarytenoid muscles: Shortening (relaxation) of vocal ligaments
Phonation

1. The pressure produced from the vocal folds oscillation is resonated through vocal tract and radiated from mouth as voice.

2. Self-excited oscillation occurs due to the interaction between vocal folds and expiratory air flow, and it becomes the source of voice's sound.

3. Expiratory air flow from the lungs reaches the larynx through the trachea.
Phonation
Larynx during phonation and quiet breathing

- Vocal Cords
- False Cords
- Arytenoid Cartilages