

Cranial Nerve Innervation of the Upper Airway

Trigeminal nerve

Cranial Nerve 5 innervates the nose and nasopharynx

Glossopharyngeal nerve

Cranial Nerve 9 innervates the tongue, oropharynx, and upper portion of the epiglottis. CN 9 is responsible for the gag reflex

Vagus nerve

Cranial Nerve 10 innervates the larynx and lower portion of the epiglottis

Superior laryngeal nerve

- Internal branch** supplies sensory innervation above the vocal cords
- External branch** provides motor innervation to the crico thyroid (tensor)

Recurrent laryngeal nerve provides sensory innervation below the glottis and motor innervation to all **EXCEPT** the cricothyroid

Trigeminal

Glossopharyngeal

Vagus

- Superior laryngeal nerve block** can be performed at the level of the thyroid membrane bilaterally
- Damage to the recurrent laryngeal nerve unilaterally** causes hoarseness and/or vocal changes
- Damage to the recurrent laryngeal nerve bilaterally** causes aphonia and airway obstruction
- A partial injury to the RLN** may result in adducted vocal cords bilaterally causing acute obstruction
- A complete transection of the RLN** causes vocal cord paralysis in the paramedian position
- A partial injury may cause a more serious situation than a complete transection**