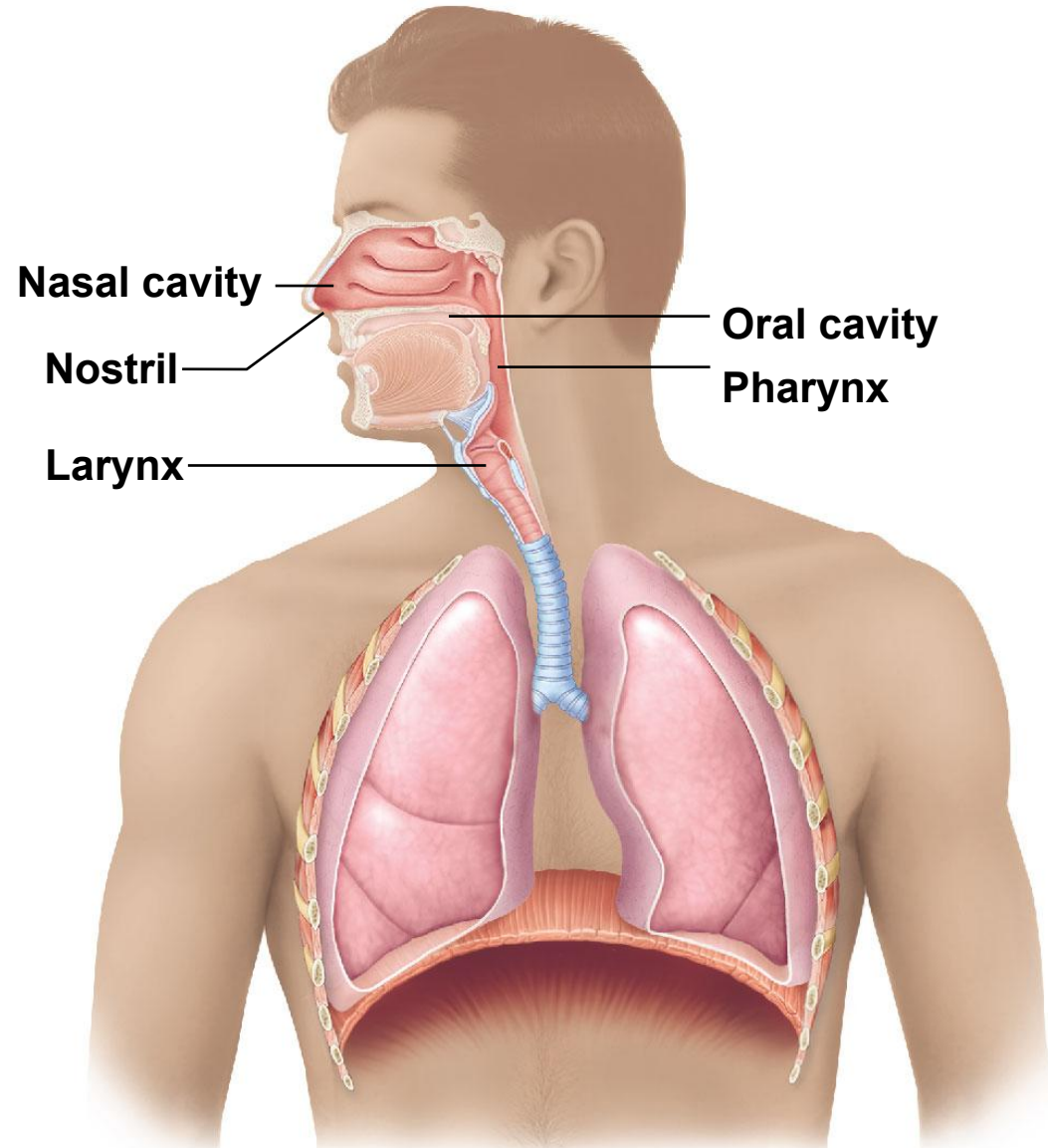


# Function of the Respiratory System

- The function of the respiratory system is to **provide oxygen to the body, dispose of carbon dioxide, and help regulate blood pH.**
  - Without oxygen, cells would die
  - Too much CO<sub>2</sub> will cause the blood pH to become acidic, which interferes with cell function

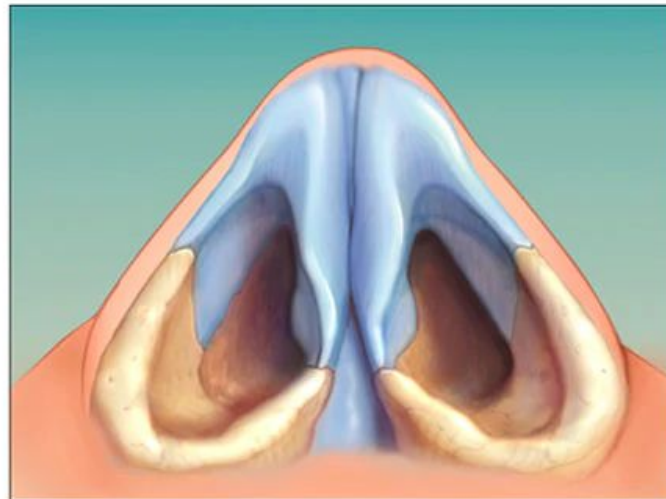
# Organs of the Upper Respiratory System

- **Nose**
- **Pharynx**
- **Larynx**



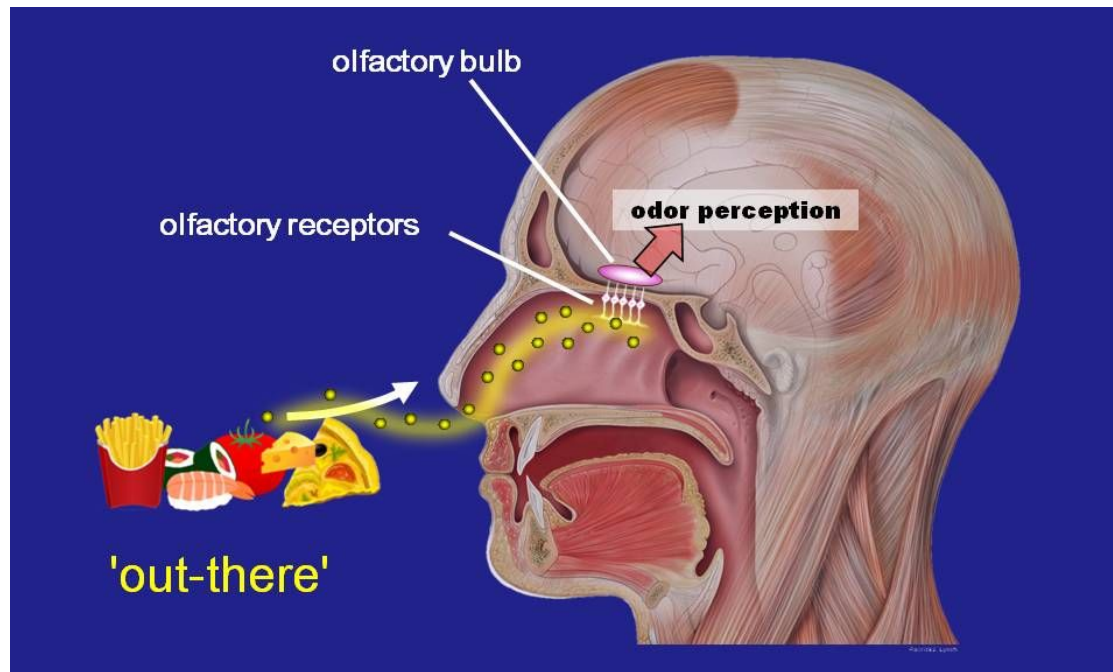
# The Nose

- The only **externally visible** part of the respiratory system
- **Nostrils** are the route through which **air enters the nose**
- **Nasal cavity** is the **interior** of the nose
- **Nasal septum** divides the nasal cavity

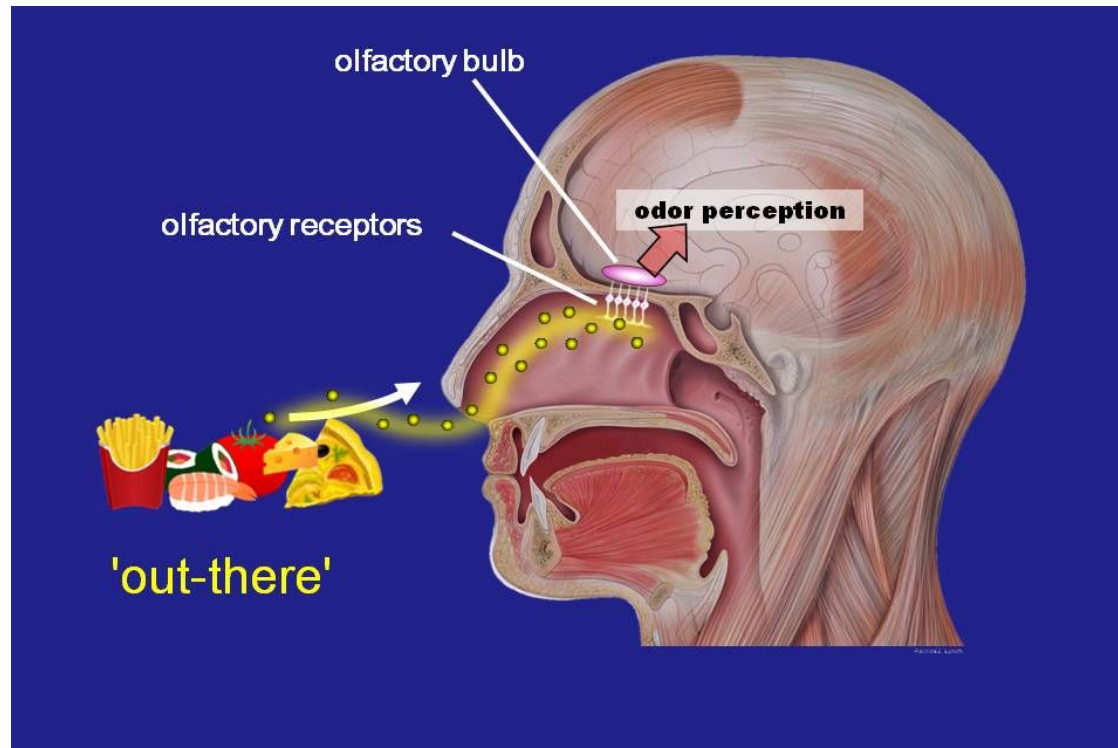


# The Nose

- The nose is lined with **mucosa- epithelial tissue that secretes mucus**
- **Olfactory receptors** are located in the mucosa on the superior surface
  - Responsible for sense of **smell**

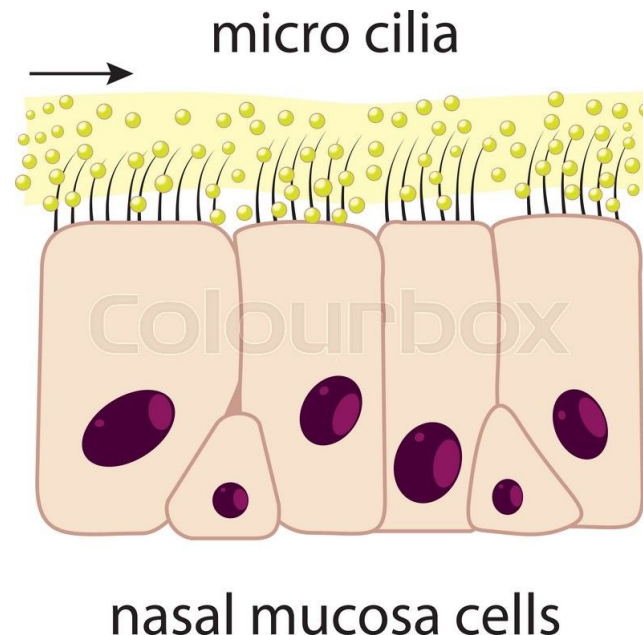


# Which type of nerves would be found in the mucosa of the nasal cavity?



# The Nose

- The rest of the cavity is lined with respiratory mucosa, which:
  - **Moistens and warms air**
  - **Traps incoming foreign particles**
  - **Enzymes in the mucus destroy bacteria**



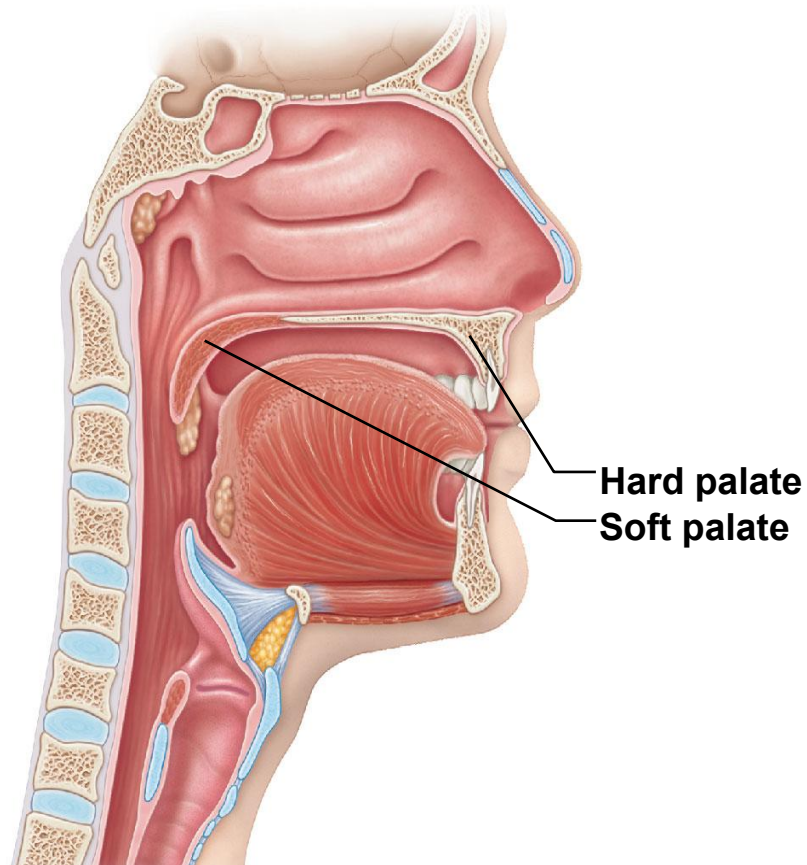
# Why is nose breathing preferred to mouth breathing?



Students, write your response!

# The Nose

- The **palate** separates the **nasal cavity** from the **oral cavity**
  - The “roof of your mouth





**What is the importance of having an intact palate?**

**What would happen if you did not have a palate?**



Students, write your response!

**If the palate does not develop, a cleft palate and/or cleft lip will arise. This can lead to problems eating, swallowing, speaking, and more.**



Cleft palate



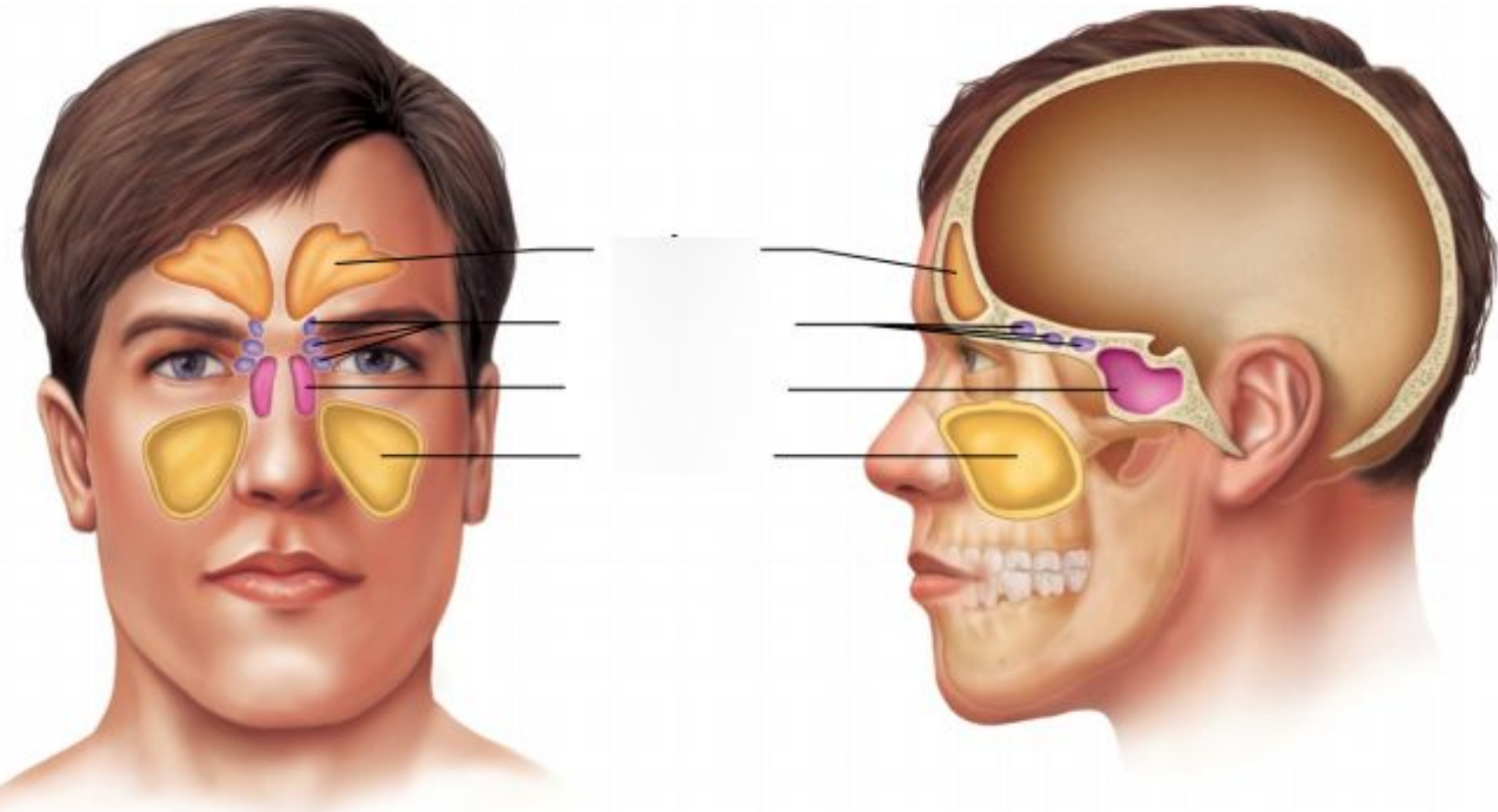
Cleft lip and cleft palate



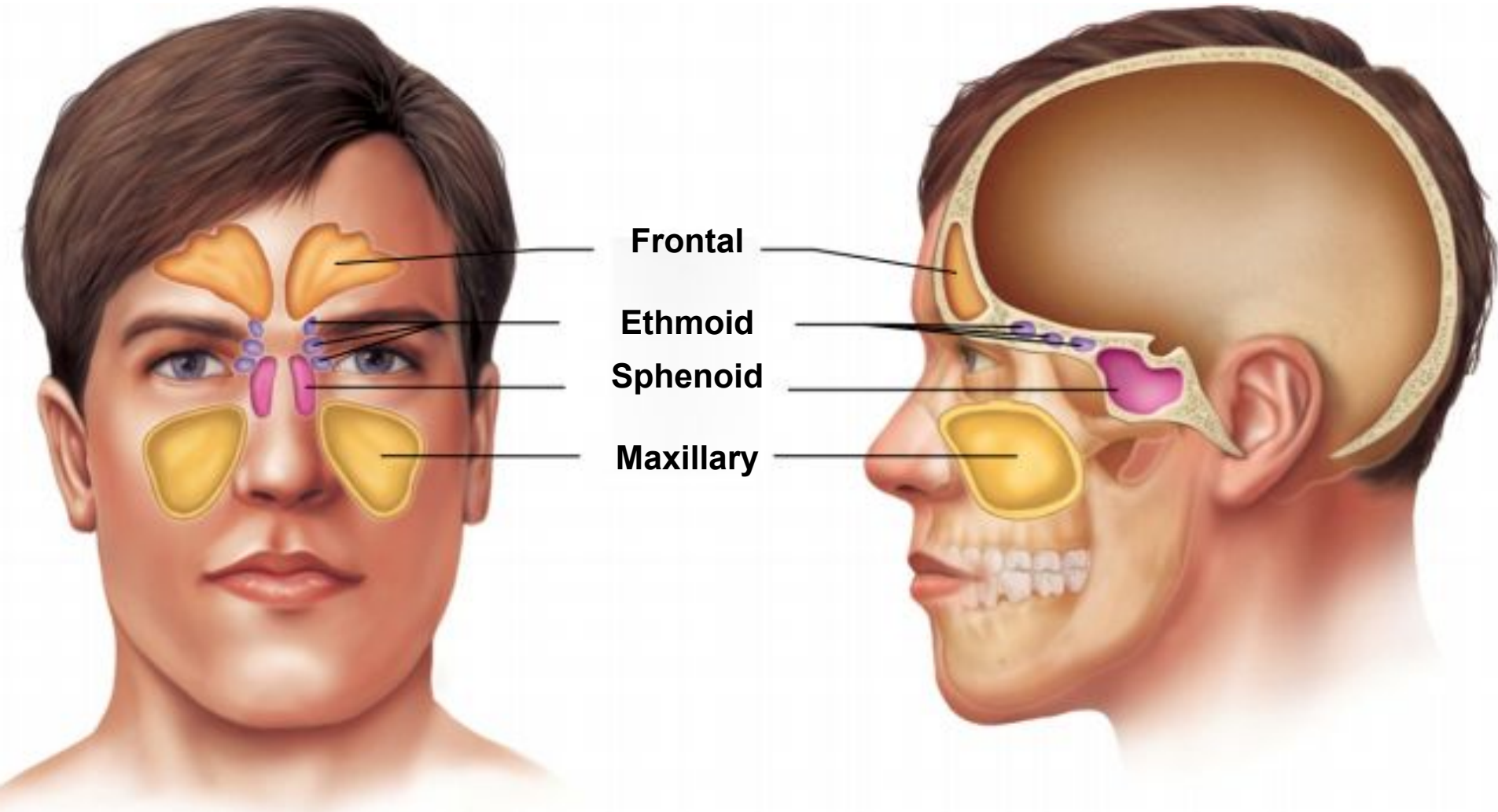
# The Nose

- Paranasal sinuses are **cavities within the frontal, sphenoid, ethmoid, and maxillary** bones surrounding the nasal cavity
- Functions:
  - **Lighten the skull**
  - **Act as resonance chambers for speech**
  - **Produce mucus**

# Label the four pairs of sinuses: Frontal, Ethmoid, Maxillary, Sphenoid



# Label the four pairs of sinuses: Frontal, Ethmoid, Maxillary, Sphenoid



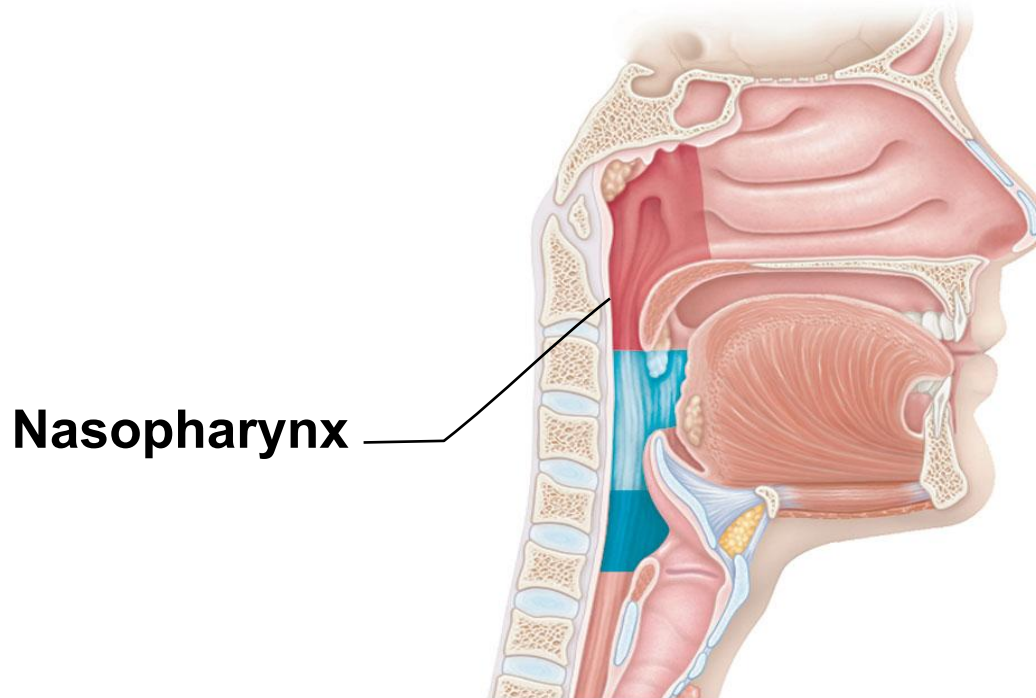
# The Pharynx

- Commonly called the **throat**
- Muscular passageway from **nasal cavity to larynx**
- Three regions of the pharynx
  1. **Nasopharynx**
  2. **Oropharynx**
  3. **Laryngopharynx**

# The Pharynx

## 1. Nasopharynx:

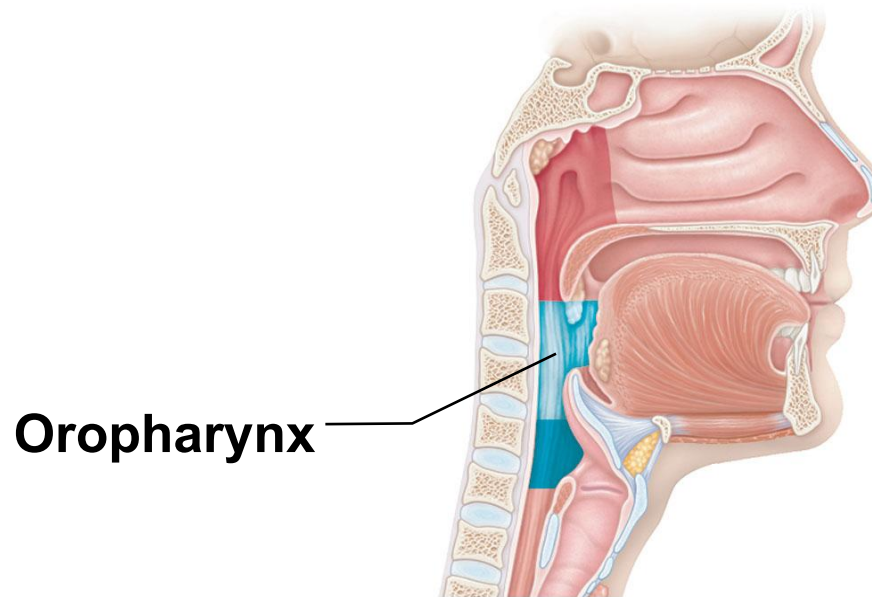
- **Superior** region behind nasal cavity
- Allows you to **breathe through your nose**



# The Pharynx

## 2. Oropharynx:

- **Middle** region behind mouth
- Passageway for **food moving from the mouth to the esophagus** and for **air moving from the nasal cavity to the oral cavity**



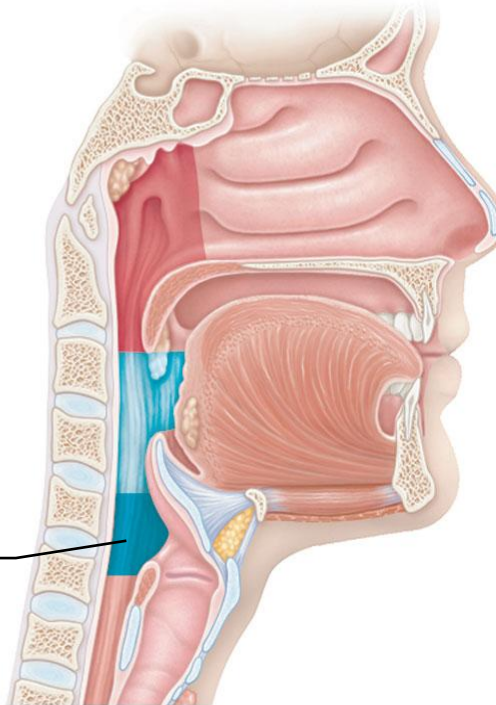


# The Pharynx

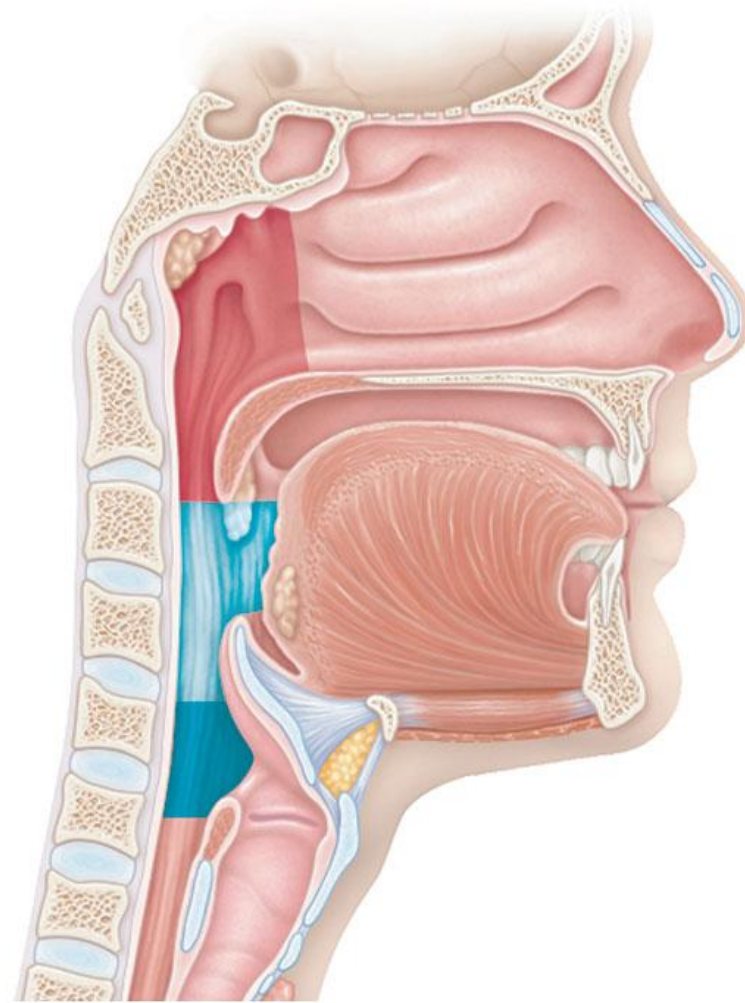
## 3. Laryngopharynx:

- **Inferior** region attached to larynx
- **Passageway for both food and air**

Laryngopharynx

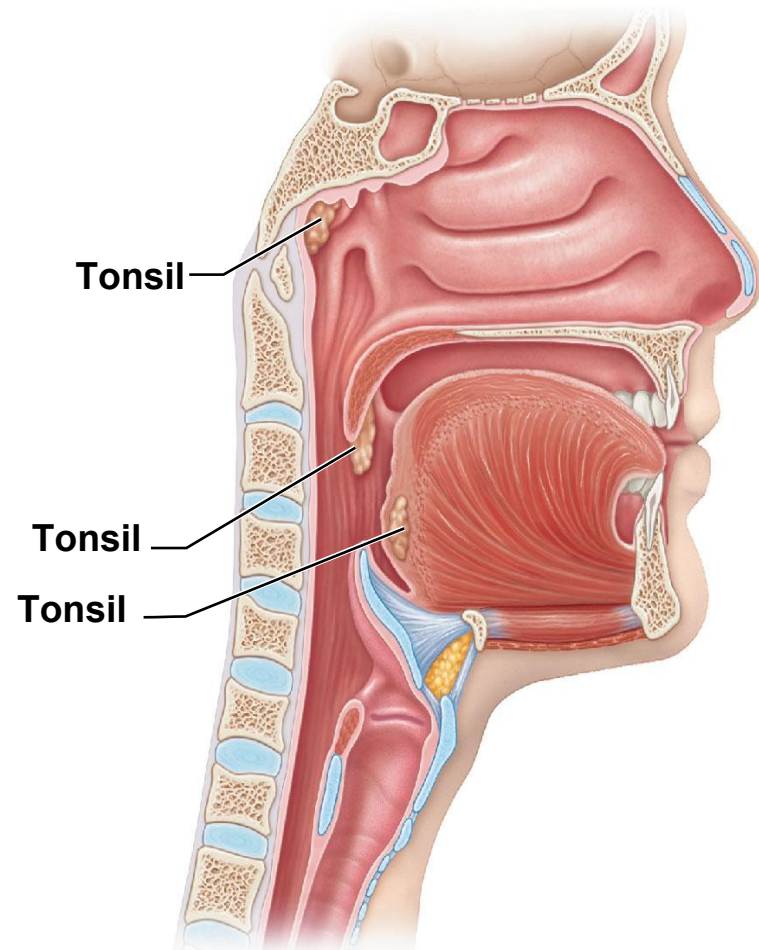


**Label the nasopharynx, oropharynx, and laryngopharynx.**



Students, draw anywhere on this slide!

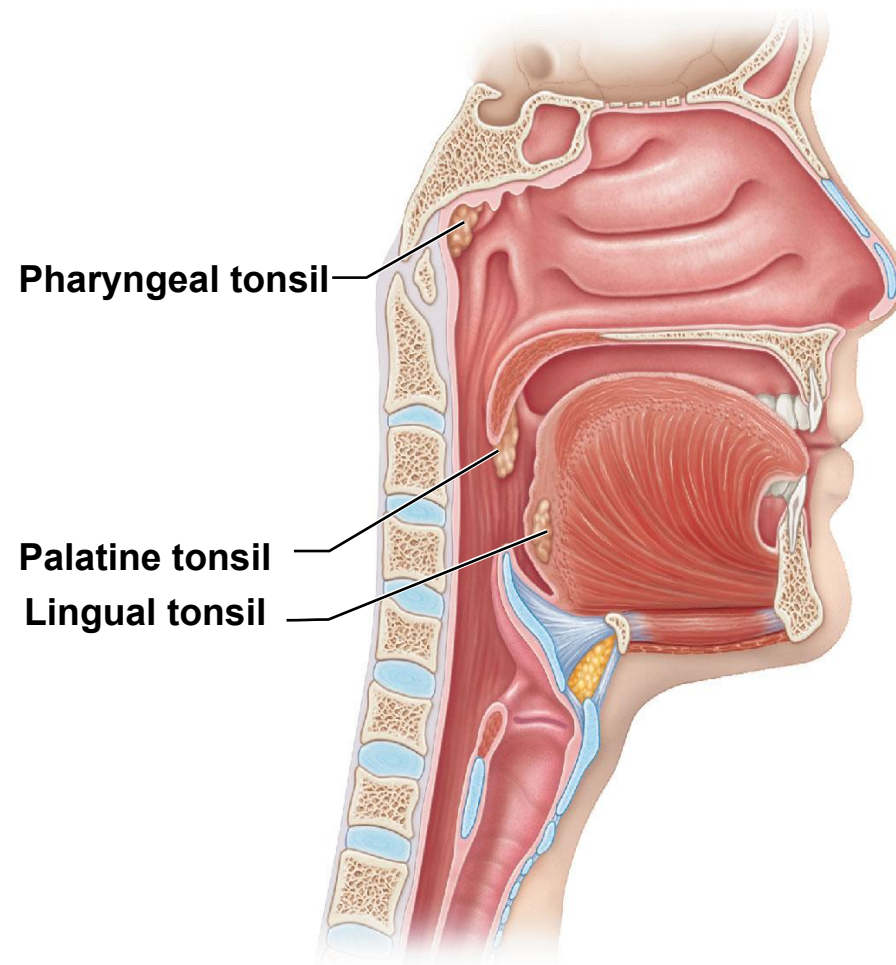
**Tonsils play a role in protecting the body from disease. What other body system are tonsils a part of?**



Students, write your response!

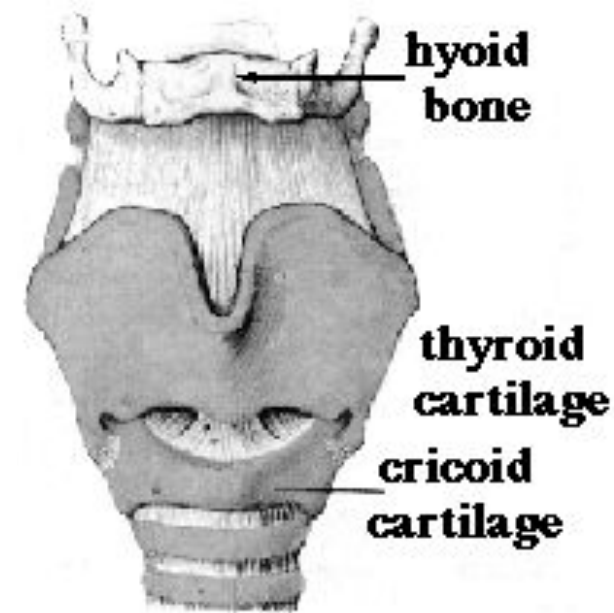
# The Pharynx

- Tonsils are clusters of lymphatic tissue that play a role in protecting the body from infection
  - **Pharyngeal tonsil** (adenoid), a single tonsil, is located in the nasopharynx
  - **Palatine tonsils** (2) are located in the oropharynx
  - **Lingual tonsils** (2) are found at the base of the tongue



# The Larynx

- Commonly called the **voice box**
- Located **inferior to the pharynx**
- Made of eight rigid hyaline cartilages
  - **Thyroid cartilage (Adam's apple)** is the largest and **protects the vocal folds**
  - The **cricoid cartilage** sits just inferior to the thyroid cartilage in the neck and **aids in opening and closing the airway for speech production**



# The Larynx

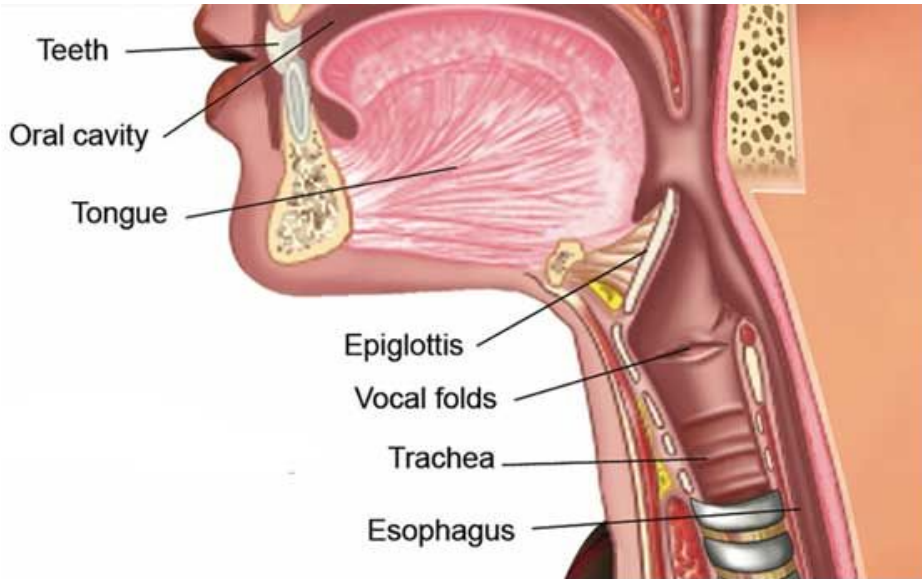
- Routes air and food into proper channels
- Plays a role in speech



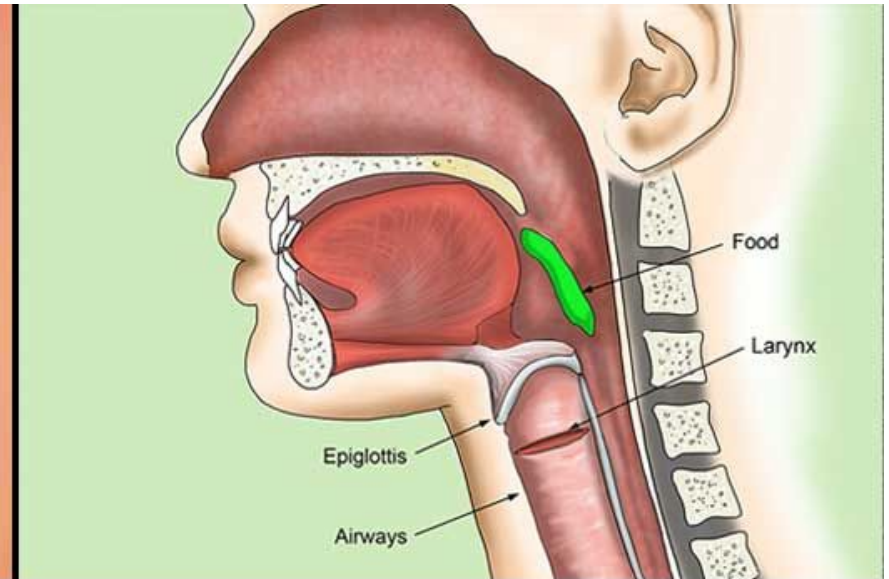
# The Larynx

- The epiglottis is a **spoon-shaped flap of elastic cartilage that protects the superior opening of the larynx**
  - **Routes food** to the posteriorly situated esophagus and **routes air** toward the trachea
  - During swallowing, the epiglottis rises and forms a lid over the opening of the larynx

# What would happen if the epiglottis did not cover the larynx during swallowing?



Position of Epiglottis when food is not passing.



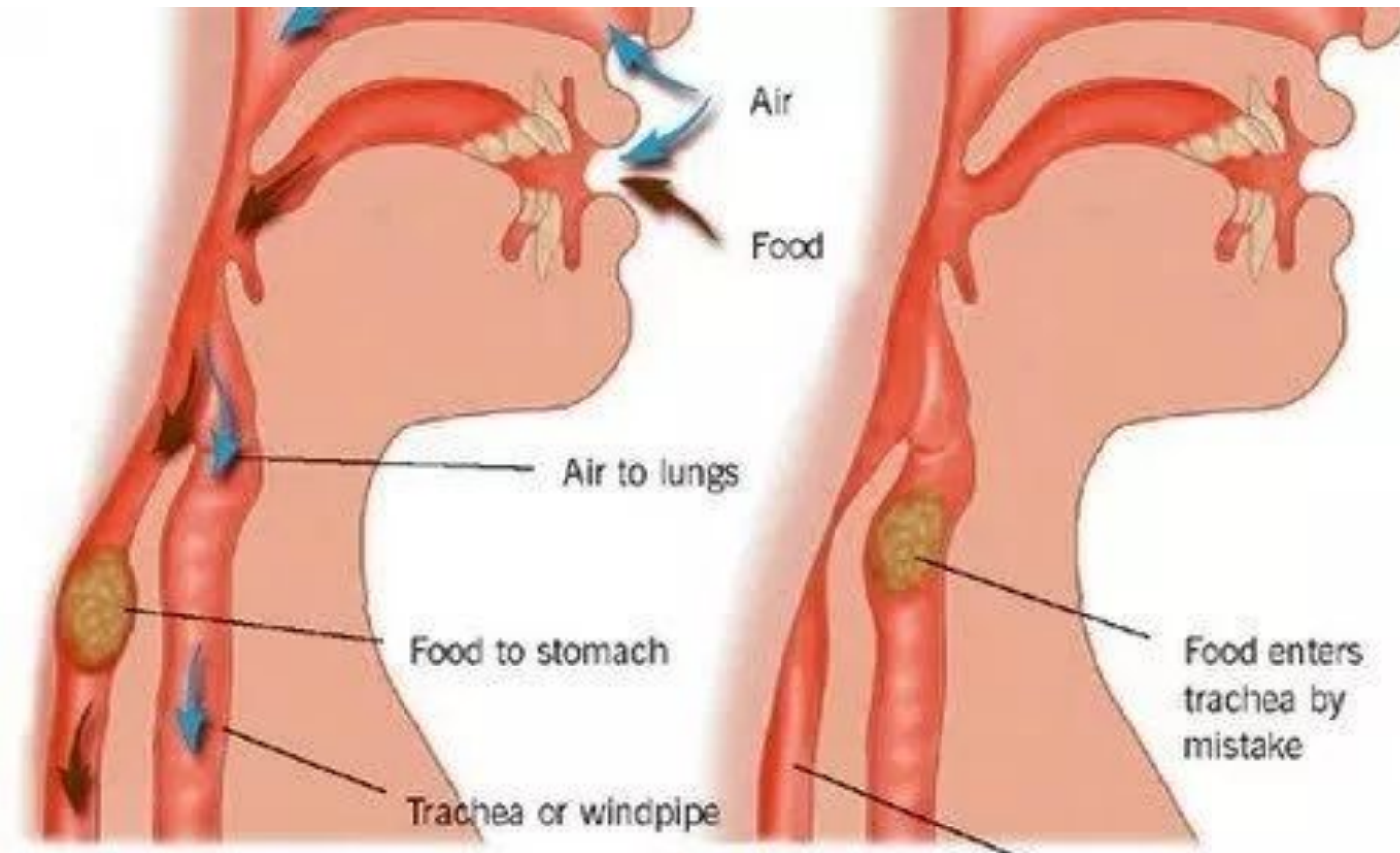
Position of Epiglottis when food is passing.



Students, write your response!

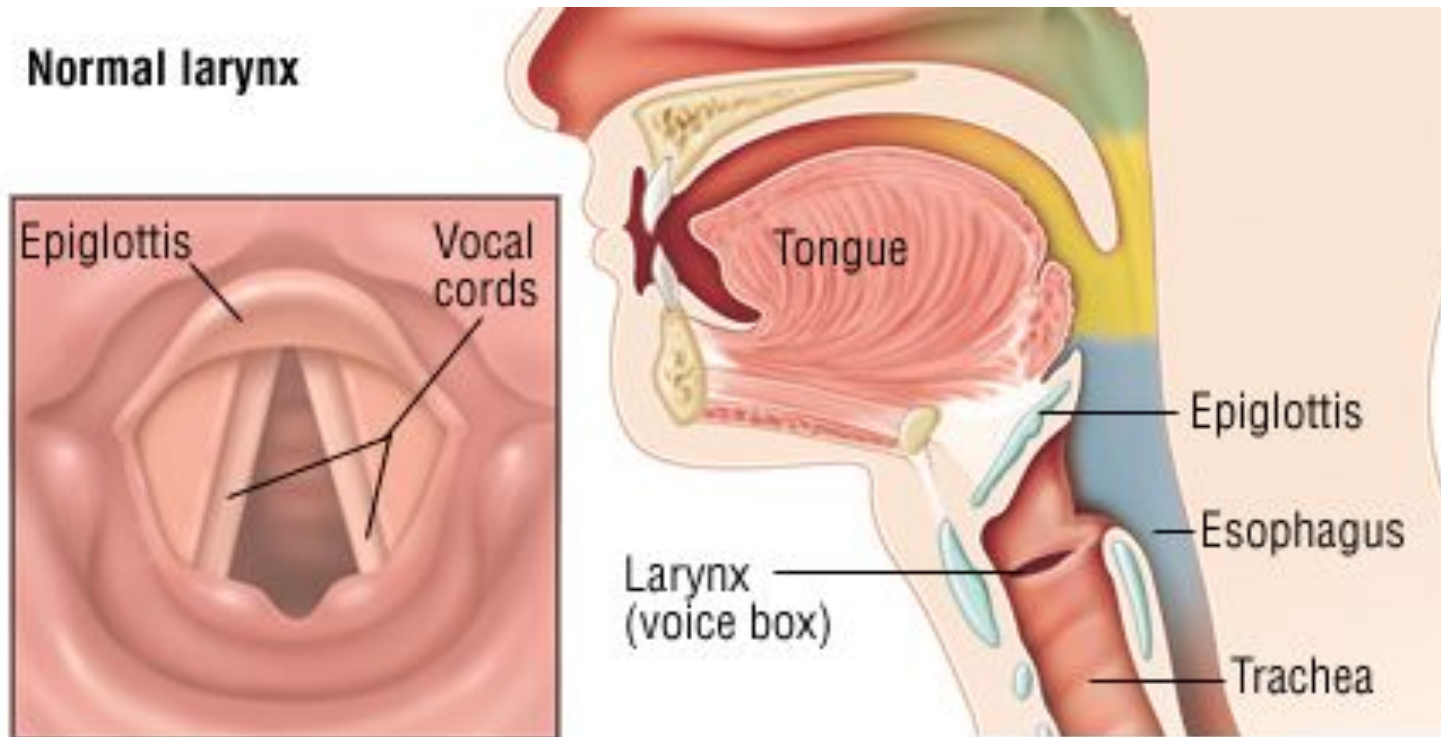


**If the epiglottis did not cover the larynx, food could enter the trachea and cause choking.**



# The Larynx

- Vocal folds (true vocal cords)
  - **Vibrate with expelled air**
  - **Allow us to speak**
- The **glottis** includes the vocal cords and the opening between the vocal cords



# How does the motion of vocal cords change the pitch of your voice?



Students, write your response!

**When vocal cords are vibrating slower, the pitch is lower. When vocal cords are vibrating faster, the pitch is higher.**

