

Essentials of Human Anatomy & Physiology

Seventh Edition

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Chapter 13

The Respiratory System

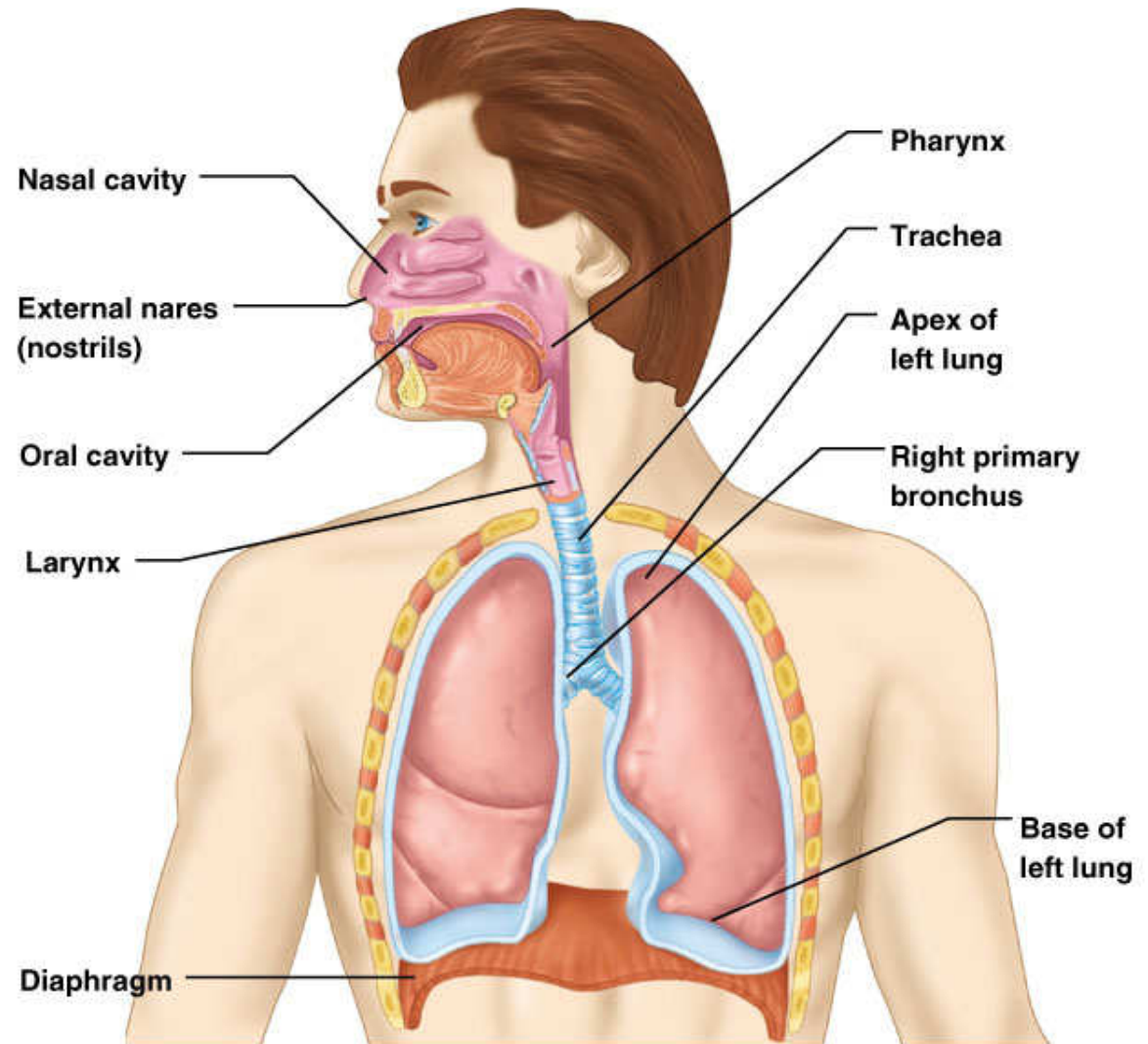
Slides 13.1 – 13.30

Lecture Slides in PowerPoint by Jerry L. Cook

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Organs of the Respiratory system

- Nose
- Pharynx
- Larynx
- Trachea
- Bronchi
- Lungs – alveoli



Function of the Respiratory System

1. Oversees gas exchanges between the blood and external environment
2. Exchange of gasses takes place within the lungs in the alveoli
3. Passageways to the lungs purify, warm, and humidify the incoming air

The Nose

- The only externally visible part of the respiratory system
- Air enters the nose through the external nares (nostrils)
- The interior of the nose consists of a nasal cavity divided by a nasal septum

Upper Respiratory Tract

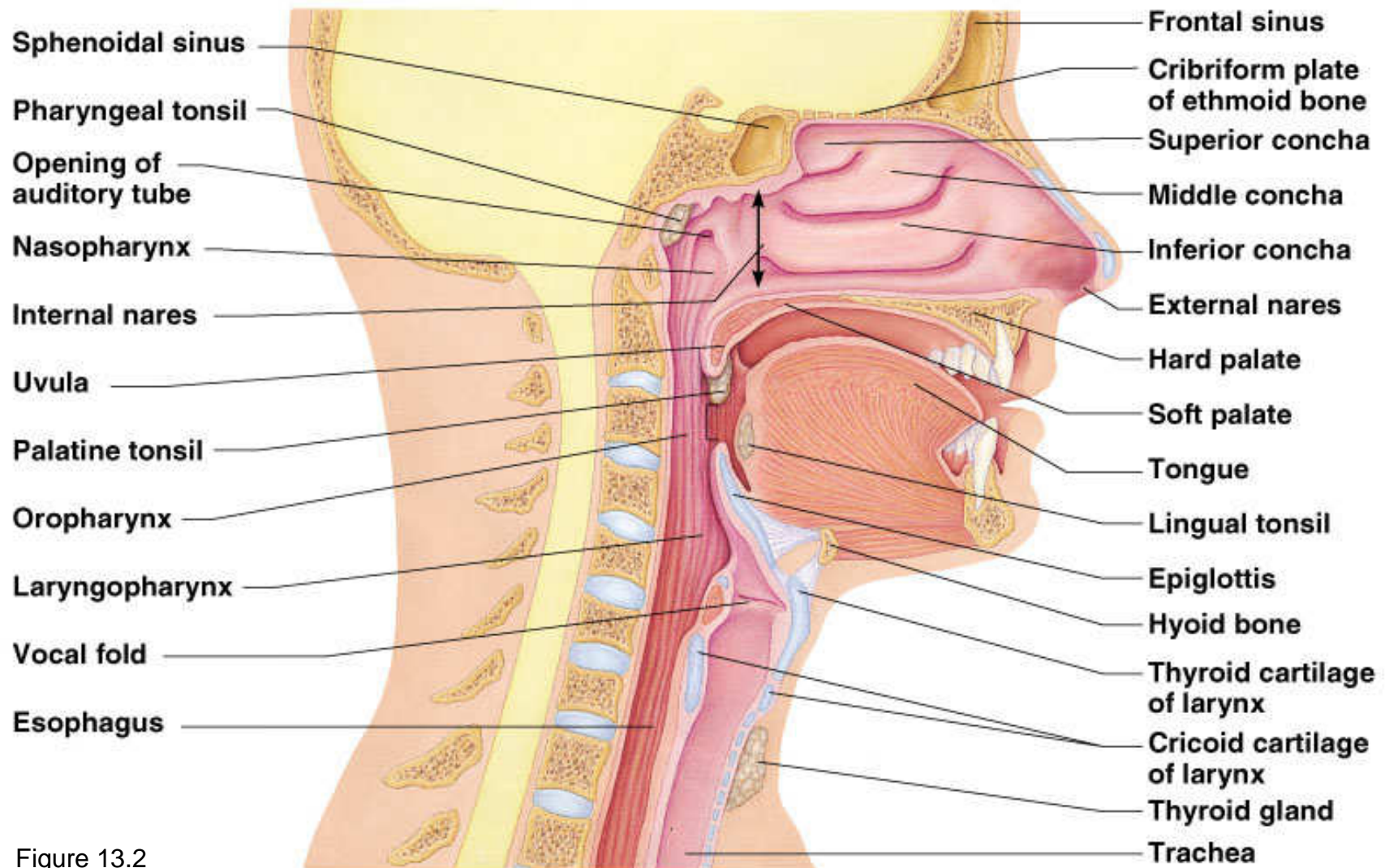


Figure 13.2

Anatomy of the Nasal Cavity

- Olfactory receptors are located in the mucosa on the superior surface
- The rest of the cavity is lined with respiratory mucosa
 - Moistens air
 - Traps incoming foreign particles

Anatomy of the Nasal Cavity

- Lateral walls have projections called conchae
 - Increases surface area
 - Increases air turbulence within the nasal cavity
- The nasal cavity is separated from the oral cavity by the palate
 - Anterior hard palate (bone)
 - Posterior soft palate (muscle)

Paranasal Sinuses

- Cavities within bones surrounding the nasal cavity
 - Frontal bone
 - Sphenoid bone
 - Ethmoid bone
 - Maxillary bone

Paranasal Sinuses

- Function of the sinuses
 - Lighten the skull
 - Act as resonance chambers for speech
 - Produce mucus that drains into the nasal cavity

Pharynx (Throat)

- Muscular passage from nasal cavity to larynx
- Three regions of the pharynx
 - Nasopharynx – superior region behind nasal cavity
 - Oropharynx – middle region behind mouth
 - Laryngopharynx – inferior region attached to larynx
- The oropharynx and laryngopharynx are common passageways for air and food