









•	 A) Upper Respiratory Tract (URT) paranasal structures a) external nares b) nasal cavity and septum c) nasal conchae d) nasal meatuses e) olfactory epithelium f) paranasal sinuses g) ciliated pseudostratified epithelium pharynx a) internal nares b) auditory tubes c) oropharynx a) latryngopharynx B) Lower Respiratory Tract (LRT) layrnx thyroid & cricoid cartilage vocal box trachea "C" rings of cartilage carina receptors sensitive to 	 3) lungs (right lung = three lobes; left lung = two lobes) a) pleural membranes b) bronchi c) bronchioles d) terminal bronchioles e) smooth muscles within bronchiole walls i) parasympathetic NS activates (using histamine) bronchiole smooth muscle (constriction) ii) sympathetic NS inhibits (using epinephrine) bronchiole smooth muscle (dilation) f) alveolar ducts g) alveolar sacs h) alveoli ii) septal cells - produce surfactant iii) macrophage (Kuppfer cells) - remove alveolar surface area = 750 sqft v) alveolar surface area site of external respiration





















































Table 25.1	Major Structures of the Upper Respiratory Tract		
Structure ¹	Anatomic Description	Functions	
Nasal cavity	Anterior facial projection, covered by skin; internal space within nose contains openings for air entry into respiratory system; subdivided into left and right portions by nasal septum in midline; paired nasal conchae on lateral walls of nasal cavity create air turbulence	Hairs at entry filter large particles; mucus helps cleanse air; blood vessels and mucus in nasal cavity help warm and moisten inhaled air; nasal conchae enable turbulent air to remain in nasal cavity long enough to be cleansed, moistened, and warmed; nasal cavity serves as chamber for sound resonance	
Paranasal sinuses	Mucosa-lined air spaces within the frontal, ethmoid, sphenoid, and maxillary bones	Cleanse air; serve as chambers for sound resonance; lighten weight of skull	
Pharynx	Tubular passageway connecting nasal and oral cavities to larynx and esophagus; composed of nasopharynx, oropharynx, and laryngopharynx; also called the throat	Acts as air passage between nasal cavity and larynx and as passageway for swallowed food and drink between oral cavity and esophagus	























































Nose and Pharynx • Pharynx Nose Common opening for • External nose digestive and Nasal cavity respiratory systems • Functions • Three regions Passageway for air Nasopharynx Cleans the air Oropharynx • Humidifies, warms air Laryngopharynx Smell • Along with paranasal sinuses are resonating chambers for speech






















































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 Consists of the parts found in the thoracic cavity: the lower trachea and the lower trachea and the lungs.

Lower Respiratory System Structures

- The larynx goes directly into the trachea or the windpipe.
 The trachea is a tube approximately.
- The trachea is a tube approximately 12 centimeters in length and 2.5 centimeters wide.
- The trachea is kept open by rings of cartilage within its walls.
- Similar to the nasal passages, the trachea is covered with a ciliated mucous membrane.
- Usually the cilia move mucus and trapped foreign matter to the pharynx.
- After that, they leave the air passages and are normally swallowed.
- The respiratory system cannot deal with tobacco smoke very keenly.
- Smoking stops the cilia from moving. Just one cigarette slows their motion for about 20 minutes. The tobacco smoke increases the amount of mucus in the air passages. When smokers cough, their body is attempting to dispose of the extra mucus.























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- Respiratory bronchioles lead to alveolar ducts, then to terminal clusters of alveolar sacs composed of alveoli
- Approximately 300 million alveoli:
 Account for most of the lungs' volume
 Provide tremendous surface area for gas exchange

Respiratory Zone

- Each bronchiole ends in a tiny air chamber that looks like a bunch of grapes.
- Each chamber contains many cupshaped cavities known as alveoli.
- The walls of the alveoli, which are only about one cell thick, are the respiratory surface.
- They are thin, moist, and are surrounded by several numbers of capillaries.
- The exchange of oxygen and carbon dioxide between blood and air occurs through these walls.
- The estimation is that lungs contain about 300 million alveoli. Their total surface area would be about 70 square meters.
- That is 40 times the surface area of the skin.
- Smoking makes it difficult for oxygen to be taken through the alveoli.




































































































