

Upper Respiratory Tract

Structures involved:

1. nose and nasal passages
2. pharynx
3. larynx
4. trachea

conducting zone—all other structures air passes through until they reach the **respiratory zone**, which is the actual sites of gas diffusion between lungs and blood—begin at respiratory bronchioles (microscopic).

Nose and nasal passages (speed of air flow is decreased by the nasal conchae):

1. clean air
2. moisten air (humidify it)
3. warm air (as it passes through turbinates it reaches body temperature)

Homeostatic imbalances:

Cold viruses, *Streptococcal* bacteria can cause “rhinitis” –cold symptoms; sometimes continues down respiratory tract or into the paranasal sinuses.

The auditory tubes (eustacian tubes) open from the middle ear into the nasopharynx; this is critical for pressure equalization. However, it also can allow middle ear infections after a cold. The tonsils help trap and prevent infection.

The Larynx (Voice Box)

1. Protected by elastic cartilage called the epiglottis, which blocks food from entering trachea
2. Voice production

Structure of larynx:

*9 cartilages (all hyaline except epiglottis, which is elastic cartilage)

*Thyroid cartilages are largest; found on anterior surface (palpate as “Adam’s Apple)

--testosterone during puberty increases size

*cough reflex stimulated if solid or liquid enter larynx (doesn’t work when unconscious!)

*true vocal cords (elastic connective tissue) produce sound

*stratified squamous epithelium above the larynx; ciliated columnar below

Voice Production:

Muscles on the cartilages of the larynx can change the tension and length of the vocal cords to produce sounds of different pitch (wide opening for deep tones and narrow opening for high-pitches)

*testosterone during puberty increases the length and thickness of cords—this causes them to vibrate more slowly (deeper sounds)

Homeostatic imbalance:

Laryngitis: swollen vocal cords