TOPICS

- Gross anatomy and bistology of the respiratory system of 75
 Muscles of respiration

 - Mechanism of respiration
 - Gaseous exchange
 - Regulation of respiratory processes
 - Alkalosis and acidosis
 - Lung volumes, capacities, compliance
 - Common disorders of the respiratory system



COMPONENTS OF THE RESPIRATORY SYSTEM Nose (Nasal cavity).uk Pharynx Notesale, 5 Pharynx (Adam's apple) Trachea Bronchi (primary, secondary, tertiary)→ Lungs Bronchioles \rightarrow alveolar ducts \rightarrow Alveoli (tiny air sacs)

Direction of air flow (air passage)

LARYNX (Voice box) • Connects the phasy is with the trachea • Responsible for

- - Voice production

 Guarding the trachea against entry of food and liquid when swallowing





MECHANISM OF RESPIRATION

- The respiratory intesale.co.uk
 Involve in a screasing and decreasing
 - the volume of the thoracic cavity
 - The pressure decreasing or increasing proportionately
 - -The respiratory muscles consist of
 - The intercostal muscles
 - The diaphragm

INSPIRATION

- Process of breathing from air
 Respiratory muscles and diaphragm contract - the rib cage rises, diaphragm descends
- Thoracic cavity volume increases
- Lungs expand and its volume increases
- The pressure inside the lungs drops below the atmospheric pressure
- Atmospheric air rich in oxygen flows down the pressure gradient into the lungs



Figure 23-11b Principles of Anatomy and Physiology, 11/e

GASEOUS EXCHANGE

- Results from pressure differences O_2 pressure In the given the alveolds ~ 100 mm Hg
 - In the blood in the capillary ~ 40 mm Hg
 - $-PO_2$: alveolus > capillary
 - O₂ diffuses from alveoli to capillary blood
- CO₂ pressure
 - In the air in the alveolus ~ 40 mm Hg
 - In the blood in the capillary ~ 46 mm Hg
 - PCO_2 : capillary > alveolus
 - CO₂ diffuses from capillary blood to the alveolus

LUNG VOLUME MEASUREMENTS

- Measurement of the mount of air -that the pages may contain at various points in the respiratory cycle
 - Using an instrument spirometer
- Used for pulmonary function testing
 - -To evaluate the status of the lungs
 - To detect lung disorders

SOME COMMON DISORDERS OF THE

- Asthma Notesale Notesale 75 Narrowing of the bronchi (lung passageways) making breathing difficult
 - May be accompanied by wheezing sound
- **Bronchitis**
 - Inflammation of the bronchi
 - Usually following infection
- Hiccup
 - sudden, involuntary contractions of the diaphragm