

Chapter 13: Respiratory Emergencies

Key Intro Points

- Oxygen cannot be interrupted for more than 5-10 minutes without severe consequences
- Dyspnea is difficult or labored breathing along with the feeling of shortness of breath

Anatomy

- Airway begins at the lips and nostrils and ends at the lung tissue
- The airway is divided into at the vocal cords into two parts
 - Upper airway
 - Lower airway
- The diaphragm and chest wall muscles mechanically expand the chest cavity, sucking outside air

through the airway branches into the lung's many alveoli

- Because of the high oxygen concentration in the air and the low concentration of CO₂, gas

exchange is driven by CO₂

Normal

- Rate (changes with age)
 - Infants = 20-25 bpm
 - Child = 15-20 bpm
 - Adult = 12-20 bpm
- Rhythm

Equal in duration and the time between breaths is equal

Quality

Breaths should have little to no internal noises and shouldn't be noticeable except when exercising

Common Respiratory Emergencies

Obstruction/choking

The most common cause of airway obstruction is the tongue

A relaxed tongue can block the airway

- Chronic Obstructive Pulmonary Disease (COPD)
 - A group of lung diseases that progressively block the lower airway passages
 - COPD is most often caused by long term smoking or prolonged exposure to irritants such

as chemicals or dust

- Asthma
 - A related form of COPD characterized by sudden, recurrent bronchial constriction and increased mucus production
 - The cause of asthma is largely unknown but researchers think that it could be due to genetics and environment
- Hyperventilation
 - Caused by abnormally low levels of CO₂ in the blood
 - It is usually benign
- Pulmonary Embolism
 - A very serious/possibly life threatening disorder

- It is a condition that occurs when a clot or foreign body travels through the bloodstream

to the pulmonary artery, causing a blockage of blood flow in the lungs, eventually impairing gas exchange

Breathing

Most often, the blockage is caused by a blood clot but can also be due to bubbles, fat and tumors

Spontaneous pneumothorax

- An accumulation of air within the pleural space (space between the lung and the inner chest wall)

- The most common cause is a traumatic injury to the chest wall, ribs or lungs
- Can cause severe hypoxia (condition in which the body is deprived of adequate oxygen supply)

Assessment

- As you approach the patient, note whether the patient seems like they are in respiratory distress or whether their breathing is either absent or noisy
- Signs or symptoms of respiratory emergency

Choking or gagging, inability to speak, panting, gasping, open-mouthed breathing, tachypnea (greater than 30 rpm in adults), bradypnea (fewer than 10 rpm in adults), nasal flaring, sitting in the tripod position

Management

- If the patient is choking and they can't clear their own airway use the heimlich maneuver
- Administer oxygen through a nonrebreather for obvious respiratory distress, nasal cannula for

very mild shortness of breath

- Patroller may need to assist in the administration of an inhaler for asthma