Oxygen Therapy

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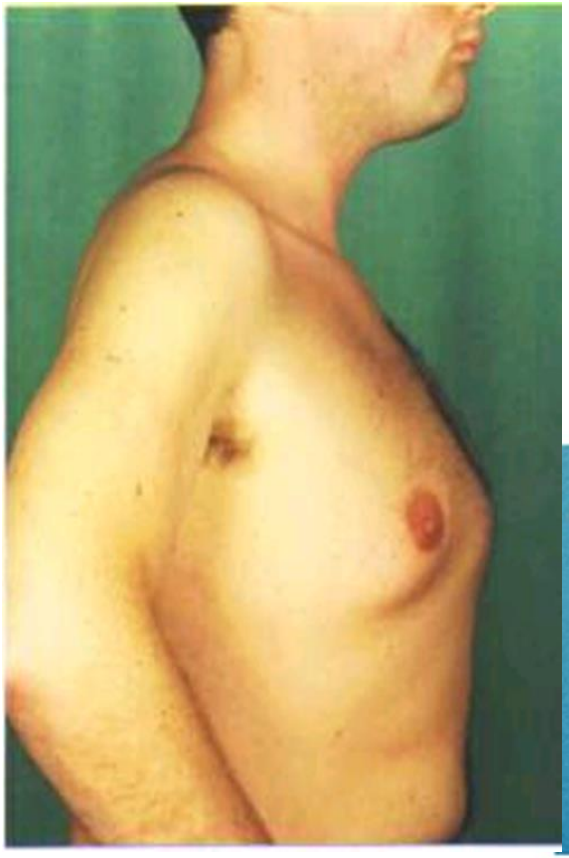
Anterior/posterior diameter 1:2

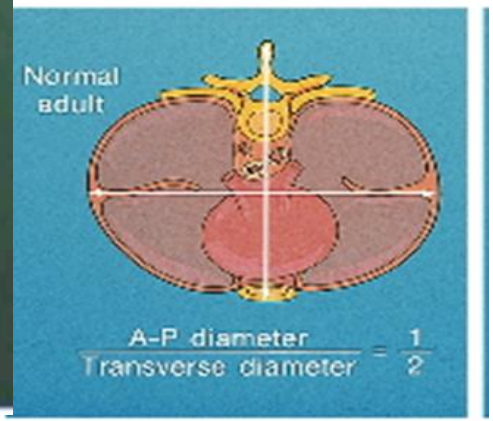
Barrel chest anterior-posterior diameter = 2:2

Pigeon chest

Sternum protrudes outward

anterior-posterior diameter





Oxygen Therapy

- Respiration: is the process of gas exchange between the individual and the environment
- Oxygen is a colorless, odorless, tasteless gas that is essential for the body to function properly and to survive.
- Oxygen Therapy: the medical administration of supplemental oxygen is considered to be a process similar to that of administering medications and requires similar nursing actions.

O2 Therapy : Indications

- Documented hypoxemia as evidenced by PaO2 < 60 mmHg(normal 80-100) or SaO2 < 90%(normal 95-99) on room air
- Severe respiratory distress (acute asthma or pneumonia)
- Severe trauma, chronic obstructive pulmonary disease (COPD, and chronic asthma)
- Acute myocardial infarction
- Short term therapy (Post anesthesia recovery)

Some term

- Dyspnea: difficulty breathing.
- : increase in the amount of extravascular fluid in the lung
- tachypnea: Breathing rate greater than 20 breaths per minute.
- Crackles: heard in the lungs—air moving through fluid in alveoli and small airways on inspiration and expiration.
- Cyanosis: blue or purple coloration of skin or mucous membrane due to lack of oxygenation).

- **Eupnea**: Normal breathing is relaxed, effortless, and regular at 14-20 breath\minute
- **Tachypnea:** Rapid shallow breathing is a rate above 20 breaths per minute, associated with increased activity or a disease process
- **Bradypnea**: slow breathing is a rate blow 12 breath per minute with normal depth and rhythm, associated with Sedation , anesthesia
- **Apnea** is the absence of respirations
- **Hypoxemia**: reduced oxygen levels in the blood

- hemothorax: partial or complete collapse of the lung due to blood accumulating in the pleural space
- pleural effusion: abnormal accumulation of fluid in the pleural space
- pneumothorax: partial or complete collapse of the lung due to positive pressure in the pleural space (collection of air in the pleural space)

Oxygen Delivery Systems

Nasal Cannula

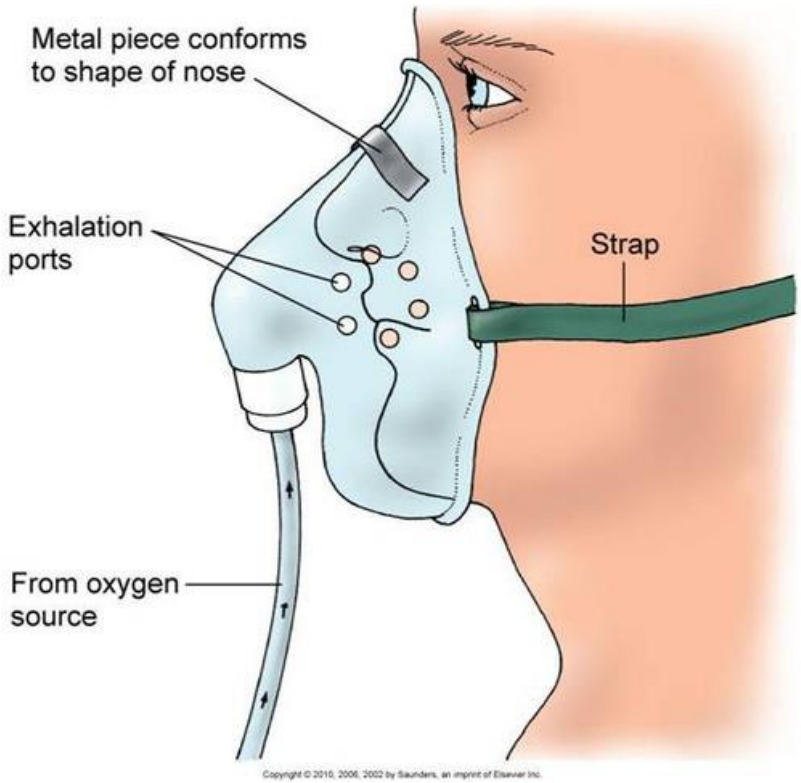
The nasal cannula (nasal prongs) is the most common and inexpensive device used to administer oxygen.

- low-flow system
- Can use continuously with meals and activity
- Easily dislodged, not as effective is a patient is a mouth breather or has blocked nostrils or a deviated septum or polyps.

Nasal Cannula

Simple face mask

- low-flow system
- A mask fits over the mouth and nose of the patient
- Can cause skin breakdown



Non re-breather mask

- high-flow system
- It has a series of one-way valves between the mask and the bag and the covers on the exhalation ports.
- These masks have a risk of suffocation if the gas flow is interrupted.

Partial Rebreather Mask

- high-flow system
- The bag should always remain partially inflated. The flow rate should be high enough to keep the bag partially inflated.
- Used short term for patients who require high levels of oxygen.
- The partial re-breather bag has no one-way valves, so the expired air mixes with the inhaled air.

Venturi mask

- high-flow system
- consisting of a bottle of sterile water, corrugated tubing, a drainage bag,

air/oxygen ratio nebulizer system, and a mask that works with the corrugated tubing.