Chapter 30

Oxygen Needs

Lesson 30.1

- Define the key terms and key abbreviations in this chapter.
- Describe hypoxia and abnormal respirations.
- Explain the measures that promote oxygenation.
- Describe the devices used to give oxygen.

Lesson 30.1 (Cont.)

- Explain how to safely assist with oxygen therapy.
- Perform the procedures described in this chapter.
- Explain how to promote PRIDE in the person, the family, and yourself.

Oxygen

- Oxygen (O_2) is a gas.
  - It has no taste, odor, or color.
  - It is a basic need required for life.
- Death occurs within minutes if breathing stops.
- Brain damage and serious illness can occur without enough oxygen.

Altered Respiratory Function

- Hypoxia means that cells do not have enough oxygen.
  - Early signs include restlessness, dizziness, and disorientation.
- Adults normally have 12 to 20 respirations per minute.
- Normal respirations are quiet, effortless, and regular.
  - Both sides of the chest rise and fall equally.

Abnormal Respirations

- The following breathing patterns are abnormal:
  - Tachypnea is rapid breathing.
  - Bradypnea is slow breathing.
  - Apnea means lack or absence of breathing.
  - Hypoventilation means respirations are slow, shallow, and sometimes irregular.
  - Hyperventilation means respirations are rapid and deeper than normal.
  - Dyspnea is difficult, labored, or painful breathing.
  - Cheyne-Stokes respirations gradually increase in rate and depth. Then they become shallow and slow.
  - Orthopnea means breathing deeply and comfortably only when sitting.
  - Kussmaul respirations are very deep and rapid.

Pulse Oximetry

- Pulse oximetry measures the oxygen concentration in arterial blood.
  - Oxygen concentration is the amount (percent) of hemoglobin containing oxygen.
    - The normal range is 95% to 100%.
  - A sensor attaches to a finger, toe, earlobe, nose, or forehead.
  - Oximeter alarms are set for continuous monitoring.
  - A good sensor site is needed.
- Oxygen sources include:
  - Wall outlet
  - Oxygen tank
  - Oxygen concentrator
  - Liquid oxygen system

Promoting Oxygenation

- To help meet oxygen needs, certain measures are common in care plans.
- Positioning
  - Breathing is usually easier in semi-Fowler's and Fowler's positions.
  - Persons with difficulty breathing often prefer the orthopneic position.
  - Position changes are needed at least every 2 hours.
- Deep breathing and coughing
  - Deep breathing moves air into most parts of the lungs.
  - Coughing removes mucus.

Assisting With Oxygen Therapy

- Disease, injury, and surgery often interfere with breathing.
  - When the amount of O_2 in the blood is less than normal (hypoxemia), the doctor orders oxygen therapy.
    - Oxygen is treated as a drug.
  - The doctor orders:
    - The amount of oxygen to give
    - The device to use
    - When to give it
  - Some people need oxygen constantly.
    - Others need it for symptom relief.

Devices That Deliver Oxygen

- The doctor orders the device to give oxygen.
  - Nasal cannula
  - Simple face mask
- The flow rate is the amount of oxygen given.
  - It is measured in liters per minute (L/min).
  - The nurse or respiratory therapist sets the flow rate.
  - The nurse and care plan tell you the person's flow rate.
  - When giving care and checking the person:
    - Always check the flow rate.
    - Tell the nurse at once if it is too high or too low.

Oxygen Safety

- You assist the nurse with oxygen therapy.
- You do not give oxygen.
- You do not adjust the flow rate unless allowed by your state and agency.
- You must give safe care.