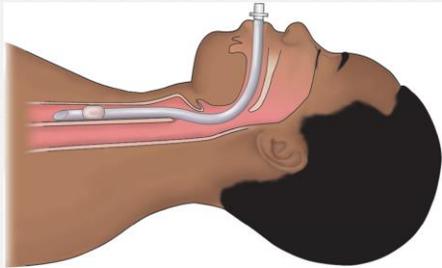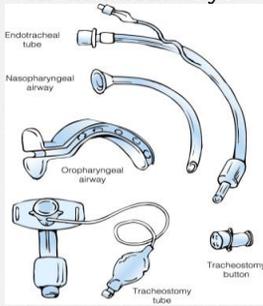# Care of a Patient on a Ventilator

R.Thomas

Endotracheal Tube

Artificial Airways

Tracheostomy

❖ Surgical procedure in which an opening is made into the trachea

❖ The indwelling tube inserted into the trachea is called a tracheostomy tube (Fig. 21-7)

❖ Preventing Complications Associated With Endotracheal and Tracheostomy Tubes, refer to Chart 21-8

❖ Guidelines for performing tracheal suctioning, refer to lww.com/Brunner14e
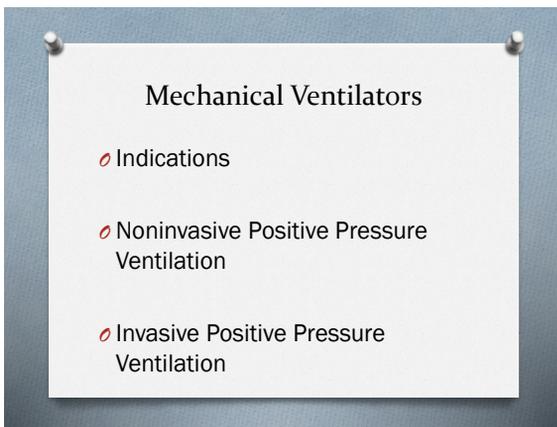
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Nursing Management of Tracheostomy

❖ Continuous monitoring and assessment

❖ Maintain patency by proper suctioning

❖ Semi-Fowler

❖ Administer analgesia and sedatives

❖ Provide an effective means of communication

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Mechanical Ventilators

o Indications

o Noninvasive Positive Pressure Ventilation

o Invasive Positive Pressure Ventilation

Ventilator Modes

- Continuous mandatory ventilation (CMV)
- Assist- Control Ventilation (A/C)
- Intermittent Mandatory Ventilation (IMV)
- Synchronized Intermittent Mandatory Ventilations (SIMV)
- Pressure Support Ventilation (PSV)
- Airway Pressure Release Ventilation (APRV)
- Proportional Assist Ventilation (PAV)

Ventilator Settings

- Controlling mode
- Tidal Volume (TV)
  - Amt of air inhaled & exhaled in 1 cycle
- PEEP (Positive End Expiratory Pressure)
- FiO2 (fraction of inspired O2)
  - % O2 in inhaled volume
- Rate
- Minute ventilation
  - RR x TV
  - ↑ mv → PaCO2 ↓/ ↓ mv → PaCO2 ↑
- Alarm settings

Care of Patient on Ventilator

- Airway
- Gas exchange
- Prevent complications
- Weaning

Nursing Process: Planning

- ❖ Goals include:
  - o Maintenance of patent airway
  - o Optimal gas exchange
  - o Absence of trauma or infection
  - o Attainment of optimal mobility
  - o Adjustment to nonverbal methods of communication
  - o Successful coping measures

Collaborative Problems

- ❖ Ventilator problems
- ❖ Alterations in cardiac function
- ❖ Barotrauma
- ❖ Pulmonary infection and sepsis
- ❖ Delirium

Nursing Interventions

- ❖ Enhancing gas exchange
- ❖ Promoting effective airway clearance
- ❖ Preventing trauma and infection
- ❖ Promoting optimal level of mobility
- ❖ Promoting optimal communication
- ❖ Promoting coping ability

Enhancing Gas Exchange: Interventions

- ❖ Judicious use of analgesics to relieve pain without suppressing respiratory drive
- ❖ Frequent repositioning to diminish the pulmonary effects of immobility
- ❖ Monitor for adequate fluid balance:
  - o Assess peripheral edema
  - o I&O and daily wts
- ❖ Administer medications to control primary disease

Effective Airway Clearance: Intervention

- ❖ Assess lung sounds at least every 2 to 4 hours
- ❖ Measures to clear airway: suctioning, CPT, position changes, promote increased mobility
- ❖ Humidification of airway
- ❖ Administer medications

Trauma and Infection: Interventions

- ❖ Infection control measures
- ❖ Tube care
- ❖ Cuff management
- ❖ Oral care
- ❖ Elevation of HOB

Other Interventions

- ❖ ROM and immobility
- ❖ Communication methods
- ❖ Stress reduction techniques
- ❖ Interventions to promote coping
- ❖ Include in care: family teaching, and the emotional and coping support of the family

Weaning #1

- ❖ Process of withdrawal of dependence upon the ventilator
- ❖ Three stages:
  - o Patient is gradually removed from the ventilator
  - o Then from either the endotracheal or tracheostomy tube
  - o And finally from oxygen
- ❖ Successful weaning is a collaborative process