Emergency and Critical Care



Acute Respiratory: Respiratory Failure



Objectives



- Review components of arterial blood gas (ABG)
- Describe respiratory failure
- Describe noninvasive and invasive mechanical ventilation
- Discuss management of the patient receiving ventilation
- Describe interventions to reduce the risk of ventilator associated pneumonia
- Describe Acute Respiratory Distress Syndrome (ARDS)
- Discuss management of the patient with ARDS

Key Terms



Using the prescribed texts and assigned reading, define the following terms:

- Acidemia
- Alkalemia
- pH
- PaCO₂
- PaO₂
- HCO3-
- Compensation

- $-SaO_2$
- Hypoxia
- Hypoxemia
- Hypercarbia

Key Terms



- Respiratory Failure
- Ventilation/Perfusion
 Mismatch
- Shunting
- Hypoxemia
- Hypercapnia
- ARDS

- Mechanical Ventilation
- Noninvasive positive pressure ventilation (NPPV)
- Ventilator associated pneumonia

Effective Respirations



- Central nervous system
- Pulmonary system
- Heart and vascular system

Failure of one or more system

Respiratory failure

Respiratory Failure



- Respiratory system unable to supply necessary oxygen
 - Maintain metabolism
 - Effectively eliminate carbon dioxide
- Acute respiratory failure
 - PaO2 < 50 mmHg</p>

OR

-PaCO2 > 50 mmHg

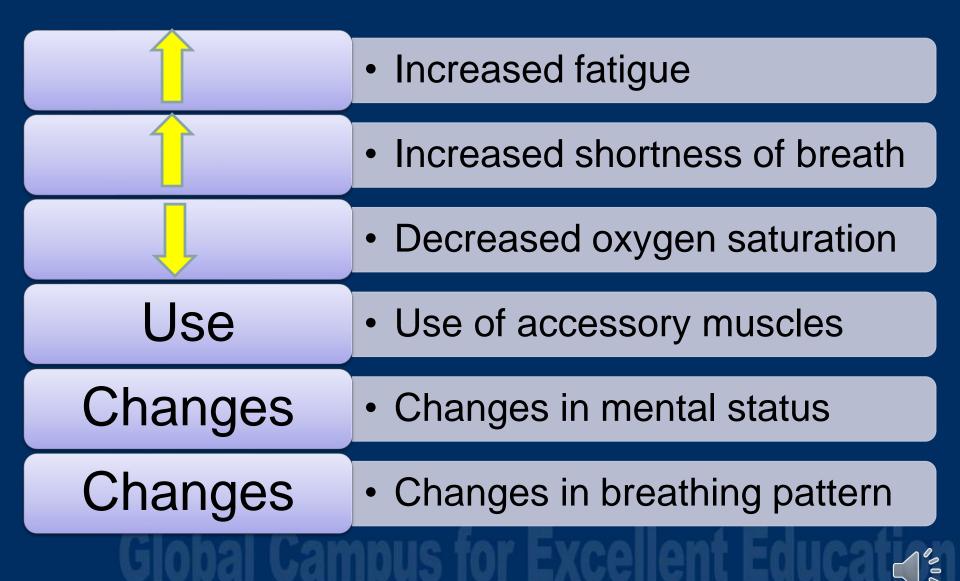
<u>AND</u>

Clinical symptoms



Clinical Symptoms of Respiratory Failure





Management of Respiratory Failure



- Maintain oxygenation
- Reverse bronchospasm
- Treat Cause
- Provide ventilatory assistance
 - Noninvasive positive pressure ventilation
 - Intubate and mechanical ventilation