

# My Intubated Patient Is More Hypoxemic... Now What Do I Do?

## 1) Check equipment, consider calling the respiratory therapist for help

Ensure the following:

- Patient remains connected to the ventilator circuit and circuit is intact
- No inadvertent changes  $F_{I}O_2$ , PEEP or other settings
- Endotracheal tube is patent and remains in correct position

If the ventilator pressure alarm is sounding, consult the card on “The Peak Pressure Has Increased”

## 2) Examine the patient and evaluate their interaction with the ventilator

- Listen for bilateral breath sounds. If breath sounds are asymmetric, consider pneumothorax or lung collapse and evaluate accordingly
- If patient is agitated and having repeated peak pressure alarms, administer intravenous fentanyl bolus and consider increasing propofol

## 3) Obtain diagnostic studies

Arterial Blood Gas (venous blood gases cannot be used to assess oxygenation)  
Chest radiograph

## 4) Adjust the ventilator to improve oxygenation

The two parameters on the ventilator that address oxygenation are  $F_{I}O_2$  and PEEP

- Increase  $F_{I}O_2$
- If this does not resolve the situation, increase PEEP by 5 cm  $H_2O$ 
  - Expect a slow rise in oxygen saturation with increased PEEP
  - May cause paradoxical worsening of oxygenation → return to previous PEEP
  - May cause hypotension → return to previous PEEP
- **Call for Help!** if these maneuvers do not resolve the situation. Discuss other strategies with your critical care consultant

## 5) Treat reversible causes of hypoxemia if present

- Suction the patient to clear any mucus in the endotracheal tube or central airways
- If chest radiograph reveals lobar or whole lung collapse, start chest physiotherapy
- If worsening edema pattern on chest radiograph, consider diuresis or new diagnosis of ARDS (see ARDS sheet)

## 6) Optimize other factors that affect oxygen delivery

- Check hemoglobin and transfuse red blood cells if  $[Hb] < 7$  g/dL
- Check  $S_{c}vO_2$  and call for help if  $< 60\%$
- Review medications for those that can cause pulmonary vasodilation (e.g., calcium channel blockers) as this may worsen ventilation-perfusion matching

**Critical Care Skills for Non-Critical Care Providers**  
**Worsening Hypoxemia on the Ventilator**