

# OXYGEN

## PHARMACOLOGY & MECHANISM OF ACTIONS:

- ❑ Medical gas
- ❑ Oxygen added to the inspired air raises the amount of oxygen in the blood, and therefore the amount delivered to tissues.
- ❑ Breathing in most people is regulated by small changes in acid/base balance and carbon dioxide levels. It takes relatively large drops in blood oxygen concentration to stimulate respiration.

## INDICATIONS:

- ❑ Suspected hypoxemia or respiratory distress from any cause
- ❑ Acute chest pain in which a myocardial infarction is suspected
- ❑ Shock (decreased oxygenation of tissues) from any cause
- ❑ Major trauma
- ❑ Carbon monoxide poisoning
- ❑ Cardiopulmonary arrest

## CONTRAINDICATIONS:

- ❑ Use in an environment with open flame or oxidizing chemicals

## ADMINISTRATION:

	ADULT	PEDIATRIC	
<b>EMR</b>	<ul style="list-style-type: none"> <li>❑ Low flow 1-2 L/min – patients with chronic lung disease; SpO<sub>2</sub> &gt;95%</li> <li>❑ Moderate flow 4-6 L/min – medical and/or trauma patients with mild to moderate respiratory distress.</li> <li>❑ High flow 10-15 L/min – medical and/or trauma patients with severe respiratory distress</li> </ul>	SAME AS ADULT	<b>EMR</b>

## PRECAUTIONS & SIDE EFFECTS:

- ❑ None noted

## SPECIAL NOTES:

- ❑ Restlessness may be an important sign of hypoxia.
- ❑ Oxygen toxicity (overdose) is not a hazard during acute administration, except in patients with COPD.
- ❑ Nasal prongs work equally well on nose and mouth breathers.
- ❑ If the patient has a slow ineffective respiratory rate or low ineffective tidal volume, do not use a cannula or mask for oxygen therapy. Assist volume and rate with a bag-valve-mask and high flow oxygen.
- ❑ A small percentage of patients with chronic lung disease breathe only when they are hypoxic. Administration of moderate to high flow oxygen may shut off their respiratory drive. Do not withhold oxygen because of this possibility. Be prepared to assist ventilation if needed. ETCO<sub>2</sub> is the best indicator if it is functioning appropriately.
- ❑ For low-flow and moderate-flow oxygen, use a nasal cannula. For high-flow oxygen administration, use a simple or non-rebreather mask as necessary.

## OXYGEN (CONTINUED)

- **The following general safety precautions should be taken to avoid explosions, tank ruptures and fires from oxygen regulators:**
  - Always “crack” cylinder valves (open the valve just enough to allow gas to escape for a very short time) before attaching regulators in order to expel foreign matter from the outlet port of the valve.
  - Always follow the regulator manufacturer’s instructions for attaching the regulator to an oxygen cylinder.
  - Always use the sealing gasket specified by the regulator manufacturer.
  - Always inspect the regulator and seal before attaching it to the valve to ensure that the regulator is equipped with only one clean, new, crush-type gasket (single use, not reusable, typically Nylon ®) that is in good condition.
  - Always be certain the valve, regulator and gasket are free from oil or grease. Oil or grease contamination is widely known to contribute to ignition in oxygen systems.
  - Tighten the T-handle firmly by hand, but do not use wrenches or other hand tools that may over-torque the handle.
  - Open the post valve slowly. If gas escapes at the juncture of the regulatory and valve, quickly close the valve. Verify the regulator is properly attached and the gasket is properly placed and in good condition. If you have any questions or contact your supplier.