Medication: Oxygen	PDN: 6966.05	Last Updated: May 5 2024	PMD: Andrew Travers*	PDC: Teena Robinson*	

OXYGEN

1.0 Classification

- Element/gas

2.0 Mechanism of Action

- Increases oxygen levels by increasing:
  - Inspired percentage of oxygen
  - Oxygen concentration in the alveoli
  - Arterial oxygen levels
  - Oxygen delivered to tissues

3.0 Indications

- Hypoxia

4.0 Contraindications

- No absolute contraindications but should only be given with hypoxia and not to obtain a state of hyperoxia.

5.0 Precautions

- Oxygen is a vasoconstrictor; aiming to achieve an SpO_2 of 100% can be detrimental in situations such as ischemic chest pain or ROSC.
- Some patients with COPD are at risk of being CO_2 retainers. Monitor closely if providing these patients with supplemental oxygen.

6.0 Route

- May be given passively or actively with various devices, including:
  - Nasal cannula
  - Nebulizer
  - Non-rebreather
  - Bag-valve-mask
  - Venturi (patient may have their own)
  - CPAP

7.0 Dosage

- Appropriate delivery device and flow rate should be chosen to obtain an SpO_2 based on the patient's condition:
  - Ischemic chest pain: 94-96%
  - ROSC: 92-98%
  - Sepsis: 94-99%
  - Stroke: 92-99%
  - Respiratory distress: > 92%
  - Patient with COPD: 88-92%
  - Allergic reaction: > 92%
  - Burns with airway/respiratory involvement: 100%
  - As directed by [1] Special Patient Program, [2] Clinical Support Paramedic and/or [3] Medical Communications Centre Physician

8.0 Supplied

- Oxygen tanks of 3 sizes:
  - M = 3000 L volume (tank factor 1.56)
  - E = 660 L volume (tank factor 0.28)
  - D = 400 L volume (tank factor 0.16)
- **Note:** Calculation for time remaining in tank equals = $\frac{\text{[Pressure on gauge – 200 psi] x tank factor}}{\text{Flow rate (lpm)}}$

CPAP pressures based on oxygen flow

Flowsafe® II disposable CPAP system		**Rescuer® II Compact CPAP system**	
O_2 Flow (lpm)	**CPAP/PEEP (cm H_20)**	**O_2 Flow (lpm)**	**CPAP/PEEP (cm H_20)**
6	2-3	4	5
8-9	5	5	7.5
10-12	7.5	6	10
13-14	10	7	12
Flush	13 (Max)	8	15 (Max)

9.0 May Be Given By

- EMR/PCP/ICP/ACP/CCP

10.0 Adverse Effects

- Light-headedness
- Respiratory failure in a small number of patients who are CO_2 retainers

11.0 Special Notes

- If patients are within their targeted oxygen saturation, it is not necessary to administer supplemental oxygen.

12.0 References

- All Clinical Practice Guidelines outline the role of supplemental oxygen when managing the various emergencies.

*Electronically Signed