

Continuous Positive Airway Pressure (CPAP)

Indications: Conscious patients who require positive pressure ventilation to:

1. Correct hypoxemia that is refractory to passive oxygenation (e.g. NRB, NC), and/or
2. Decrease work of breathing and improve ventilation (e.g. COPD, asthma, pulmonary edema).

Contraindications:

1. Unconscious patients and/or loss of protective airway reflexes,
2. Active vomiting or gastrointestinal bleeding,
3. Head trauma with signs of increased ICP and/or facial fractures, or
4. Suspected pneumothorax.

GENERAL CONSIDERATIONS:

- If the patient requires positive pressure ventilation but is **unresponsive and/or not protecting their airway, they must be ventilated via BVM or EGD.**
- If CPAP is being utilized, it is recommended that in-line capnography be used as well.
- The administration of positive pressure ventilation should be used cautiously in certain circumstances:
 - Hypotension (SBP<90mmHg): CPAP may reduce cardiac preload, which can exacerbate hypotension.
 - COPD/Asthma: Modest amount of CPAP ($\leq 5\text{cmH}_2\text{O}$) may improve ventilation by helping to splint open airways, but high levels ($>10\text{cmH}_2\text{O}$) may impair exhalation and worsen overall ventilation.

PROCEDURE:

1. **Connect oxygen** to the CPAP mask and verify flow.
2. **Consider the need to administer other medications** prior to securing the mask (e.g. nitroglycerin, nebulized bronchodilators).
3. **Set initial PEEP** to $5\text{cmH}_2\text{O}$.
4. **Help the patient tolerate the mask** by slowly holding it up to the patient's face (or asking them to hold it) for the first few breaths.
5. If tolerated, **secure the mask onto the face** using straps. Adjust the fit to minimize air leak.
6. **Assess the patient's comfort and response** to PEEP.
7. If tolerating $5\text{cmH}_2\text{O}$, **consider increasing the PEEP** by $2\text{-}3\text{cmH}_2\text{O}$ at a time to find the highest level that is comfortable and tolerable for the patient.
8. **Reassess** breath sounds, oxygen saturation, and blood pressure periodically.

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