

CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP)

1. Level: AEMT, Paramedic
2. Purpose: CPAP has been shown to rapidly improve vital signs, gas exchange, the work of breathing, decrease the sense of dyspnea, and decrease the need for endotracheal intubation in patients who suffer from dyspnea from congestive heart failure and acute cardiogenic pulmonary edema. CPAP is also helpful in improving dyspnea associated with asthma and other reactive airway presentations.
3. Indications:
 - 3.1. Dyspnea/Hypoxemia secondary to congestive heart failure, acute cardiogenic pulmonary edema, asthma, COPD exacerbation, drowning **and**
 - 3.1.1. is awake and oriented
 - 3.1.2. has the ability to maintain an open airway (GCS > 10)
 - 3.1.3. has a respiratory rate > 24
 - 3.1.4. has a systolic blood pressure > 90 mmHg
 - 3.1.5. is using accessory muscles during respirations
 - 3.1.6. is 13 year of age or older
 - 3.2. Pre-oxygenation with Ketamine Assisted Ventilations
 - 3.2.1. CPAP devices can be used in the dissociated patient secondary to Ketamine.
4. Contraindications:
 - 4.1. Pneumothorax
 - 4.2. Respiratory arrest
 - 4.3. Agonal respirations
 - 4.4. Unconscious (unless procedurally sedated with ketamine)
 - 4.5. Systolic blood pressure < 90
 - 4.6. Shock associated with cardiac insufficiency
 - 4.7. Penetrating chest trauma
 - 4.8. Persistent nausea/vomiting
 - 4.9. Facial anomalies i.e. facial trauma
 - 4.10. History of upper GI bleeding or history of recent gastric surgery
5. Pulmodyne O2 Max Procedure:
 - 5.1. Place the patient in a sitting position.
 - 5.2. Explain procedure to patient.
 - 5.3. Attach O2 Max Mask to the circuit.
 - 5.4. Set PEEP (Positive End Expiratory Pressure) Valve to 5 cmH2O pressure. PEEP may be titrated to a MAXIMUM of 15 cmH2O pressure.
 - 5.5. Attach device to High Pressure Port on portable oxygen regulator or connect the device directly to the Main Oxygen utilizing a QuickConnect.
 - 5.6. Secure the mask with the provided straps
 - 5.7. Adjust the mask off the nose by squeezing the tabs on the forehead support.
 - 5.8. Instruct patient to breathe in through their nose slowly and exhale through their mouth as long as possible
 - 5.9. Check for air leaks
 - 5.10. Monitor and document the patient's respiratory response to the treatment.
 - 5.10.1. All patients on CPAP should have continuous EtCO2 monitoring.
 - 5.11. Continue to coach the patient to keep the mask in place.
 - 5.12. If respiratory status deteriorates, remove the device and provide BVM and/or endotracheal intubation.
6. Considerations:
 - 6.1. CPAP therapy should not be discontinued unless the patient cannot tolerate the mask or experience respiratory distress worsening to respiratory failure.

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- 6.2. Advise the receiving hospital as early as possible that the patient is on CPAP so they can be prepared for the patient's arrival. The mask will adapt to any hospital CPAP/BiPAP machine as long as it has a standard respiratory connection.
- 6.3. Do not remove CPAP until hospital therapy is ready to be placed on the patient.
- 6.4. Monitor for gastric distension.
- 6.5. Frequent assessment of vital signs (q 5 minutes) is paramount with patients receiving CPAP.
- 6.6. Documentation should include the response to treatment, any adverse reactions, CPAP pressure in cmH₂O pressure, EtCO₂.