CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) DEVICE

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>SIGNS AND SYMPTOMS</th>
<th>CONTRAINDICATIONS</th>
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<tbody>
<tr>
<td>• Breathing patient whose condition is not improving with oxygen therapy</td>
<td>• Dyspnea and tachypnea &gt; 25</td>
<td>• Respiratory arrest / compromise</td>
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<td>• Respiratory distress or failure, due to pulmonary edema, CHF, or COPD</td>
<td>• Chest pain</td>
<td>• Agonal respirations</td>
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<td>• Patients 16 years of age or older</td>
<td>• Hypertension</td>
<td>• Unconscious</td>
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<td>• Carbon Monoxide poisoning &gt;10%</td>
<td>• Tachycardia</td>
<td>• Shock (cardiac insufficiency)</td>
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<td>• Flail segment without hypotension / shock</td>
<td>• Anxiety</td>
<td>• Pneumothorax - (with no chest tube)</td>
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<td></td>
<td>• Altered LOC</td>
<td>• Penetrating chest trauma</td>
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<td></td>
<td>• Rales and wheezes</td>
<td>• Persistent nausea and vomiting</td>
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<td></td>
<td>• Frothy sputum (severe cases)</td>
<td>• Facial anomalies, facial trauma</td>
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<td></td>
<td>• Accessory muscle use</td>
<td>• Known blebs</td>
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<td></td>
<td>• Retractions</td>
<td>• Unable to follow commands</td>
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<td></td>
<td>• SPO2 &lt; 94%</td>
<td>• B/P &lt; 90 systolic</td>
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PROCEDURE

1. Assure there is a patent airway and patient breathing are life sustaining.
2. Administer 100% oxygen via appropriate delivery system.
3. Perform appropriate patient assessment, including obtaining vital signs, SPO2 reading and cardiac rhythm.
4. Verbally instruct the CPAP procedure to the patient.
5. Apply CPAP device, starting at 5 cm H20.
6. Slowly titrate the pressure up to patient response. 10 cm H2O maximum.
7. Continuously reassess the patient, obtaining vital signs every 5 minutes.

1. Follow the appropriate set of standing orders for your specific device for continued treatment.
2. Contact medical control as soon as possible to allow for prompt availability of hospital CPAP equipment and respiratory personnel.

KEY POINTS

• The use of CPAP has long been recognized as an effective treatment for patients suffering from exacerbation of congestive heart failure.
• Utilize aerosol treatments in-line as defined in protocol.
• The use of CPAP for the treatment of patients who might otherwise receive endotracheal intubation holds several benefits:
  1. CPAP is a less invasive procedure with lesser risk of infection. This eliminates the possibility for adverse reactions following the administration of any antibiotics given for infection.
  2. CPAP eliminates the necessity of weaning the patient off an ET tube and ventilator.
  3. CPAP used prehospitaly reduces the need to intubate patients in the hospital.
  4. CPAP allows the alert patient to have a continued dialogue with his / her caregivers. This allows for the exchange of additional medical history. It also allows for the patient to be involved in the decision-making process for his / her care.
  5. CPAP should be used as a last resort only in asthmatic patents. Prepare to intubate and ventilate.
• Certain types of CPAP devices may only produce lower <50% Fio2, consider augmentation with nasal oxygen

For circumstances in which the patient does not improve or continues to deteriorate despite CPAP and / or medication therapy, terminate CPAP administration and perform BVM ventilation and endotracheal intubation if necessary.
**Continuous Positive Airway Pressure (CPAP) Device**

**Patient must have adequate respiratory effort**
If Insufficient, go directly to BVM ventilation

Patient is experiencing acute respiratory distress AND is NOT hypotensive

**Suspected Cause?**

**Congestive Heart Failure (CHF)**
- Afebrile
- Bilateral rales
- JVD / HJR
- Distal edema
- Orthopnea
- CHF history
- Hypoxia

**Other respiratory etiology (such as pneumonia or COPD)**
- Fever (Pneumonia)
- Wheezing
- Hypoxia / dyspnea

**Administer CPAP**
Start at 5 cm H₂O
May titrate up to 10 cm H₂O to maintain \( \text{SpO₂} \)

**Monitor \( \text{SpO₂} \), HR, LOC, and Blood Pressure. Remove or reduce CPAP if patient becomes hypotensive**

**Administer CPAP**
Start at 5 cm H₂O
May titrate up to 10 cm H₂O to maintain \( \text{SpO₂} \)

**Monitor \( \text{SpO₂} \), HR, LOC, and Blood Pressure. Remove or reduce CPAP if patient becomes hypotensive**

**Patient Improving?**

**YES**
Continue CPAP
Reassess every 5 minutes

**NO**
Remove from CPAP
Apply BVM Ventilation

**Transport** to appropriate facility
**Contact** receiving facility
**Consult** Medical Direction where indicated

**KEY POINTS**
- CPAP Indications: Hypoxemia and SOB secondary to CHF or other causes not responding to \( \text{O₂} \) therapy
- CPAP Contraindications: BP <90 systolic, respiratory arrest, agonal respirations, unconscious, shock, pneumothorax, penetrating chest trauma, persistent nausea and vomiting, facial anomalies, facial trauma, known blebs, unable to follow commands, apnea, hypercarbia, and airway compromise.
- Patient must be adequately and spontaneous breathing

**Asthma Caution**
Use extreme caution when using CPAP on ASTHMA patients.
Use only if patient is hypoxic and not responding to any other treatment including aerosols and IM EPINEPHrine (ADRENALINE).
Be prepared to intubate and ventilate these patients.