


Section: ALS Protocols
Subject: CPAP (CONTINUOUS POSITIVE AIR PRESSURE)
Section #: 345.05
Issue Date: March 21, 2011
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Approved By: 

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1. The use of CPAP, when available, will be at the discretion of the Medic-in-Charge.
2. CPAP therapy may be used for the following situations in conscious adult patients:
 - a. CHF with adequate tidal volume.
 - b. Exacerbation of COPD or asthma.
 - c. Near-drowning with adequate tidal volume.
 - d. Non-cardiogenic pulmonary edema with adequate tidal volume.
3. CPAP therapy:
 - a. Thoroughly explain the procedure to the patient.
 - b. Coach the patient as needed.
 - c. Indications: ¹
 - i. Moderate to severe respiratory distress
 - ii. Tachypnea (RR > 24 breaths/min)
 - iii. Accessory muscle use or abdominal breathing
 - d. Contraindications: ¹
 - i. Respiratory arrest
 - ii. Medically unstable
 - iii. Unable to protect airway
 - iv. Excessive secretions
 - v. Uncooperative or agitated
 - vi. Unable to fit mask
 - vii. Recent (< 30 days) upper airway or upper gastrointestinal surgery
 - e. Predictors of success for CPAP in the acute setting: ²
 - i. Able to cooperate
 1. Good neurologic status
 2. Patient's acceptance of the technique
 - ii. Able to protect airway
 1. Low secretions
 2. Minimal amount of air leak
 3. Dentition intact (either their own or dentures in place)
 - iii. Not too acutely ill
 1. No pneumonia
 2. Not too elevated ET_{CO}₂

¹ Adapted from Liesching T, Kwok H, Hill NS: Acute applications of noninvasive positive pressure ventilation. Chest 124:699-713, 2003.

² Adapted from Ambrosino N, Foglio K, Rubini F, et al: Non-invasive mechanical ventilation in acute respiratory failure due to chronic obstructive pulmonary disease: Correlates for success. Thorax 50:755-757, 1995; and Soo Hoo GW, Santiago S, Williams AJ: Nasal mechanical ventilation for hypercapnic respiratory failure in chronic obstructive pulmonary disease: Determinants of success and failure. Crit Care Med 22:1253-1261, 1994.

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- iv. Good initial response
 - 1. Reduction in respiratory rate
 - 2. Improving ET CO_2
 - 3. Improving level of consciousness
- f. Start at 5 cm H $_2$ O
 - i. Increase as tolerated for COPD, near drowning and non-cardiogenic pulmonary edema.
 - ii. Keep at 5 cm H $_2$ O for asthma, and discontinue if no response.
- g. Use continuous wave capnography, if available, to better monitor the clinical course.
- h. If the patient's condition deteriorates, discontinue immediately.