

P150 LFD PROCEDURE PROTOCOL: CAPNOGRAPHY

AEMT	EMT-I	Paramedic
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Indications:

- MANDATORY: to rule out esophageal intubation and confirm endotracheal tube position in all intubated patients.
- To identify late endotracheal tube dislodgement
- To monitor ventilation and perfusion in any ill or injured patient
- After sedation of the agitated/combatative patient
- Consider monitoring when patient receives respiratory depressants, like opioids or sedating medications

Contraindications:

- None

Technique:

1. In patient with ETT or advanced airway: place ETCO₂ detector in-line between airway adaptor and BVM after airway positioned and secured
2. Patients without ETT or advanced airway in place: place ETCO₂ cannula on patient. May be placed under CPAP or NRB facemask
3. Assess and document both capnography waveform and ETCO₂ value

Precautions:

1. To understand and interpret capnography, remember the 3 determinants of ETCO₂:
 - a. Alveolar ventilation
 - b. Pulmonary perfusion
 - c. Metabolism
2. Sudden loss of ETCO₂:
 - a. Tube dislodged
 - b. Circuit disconnected
 - c. Cardiac arrest
3. High ETCO₂ (> 45)
 - a. Hypoventilation/CO₂ retention
4. Low ETCO₂ (< 25)
 - a. Hyperventilation
 - b. Low perfusion: shock, PE, sepsis
5. Cardiac Arrest:
 - a. In low-pulmonary blood flow states, such as cardiac arrest, the primary determinant of ETCO₂ is blood flow, so ETCO₂ is a good indicator of quality of CPR
 - b. If ETCO₂ is dropping, change out person doing chest compression
 - c. In cardiac arrest, if ETCO₂ not > 10 mmHg after 20 minutes of good CPR, this likely reflects very low CO₂ production and is associated with poor outcomes.
 - d. Sudden rise in ETCO₂ may be an indicator of ROSC.