

End-Tidal CO₂ Monitoring – 30.050

INDICATIONS:

For use to measure effectiveness of ventilation by measuring the amount of carbon dioxide in exhaled air.

PROCEDURE:

1. Manage airway according to appropriate Airway Management Procedure.
2. Apply ET_{CO₂} monitor, if available. Maintain ET_{CO₂} output between 35-40 mmHg.

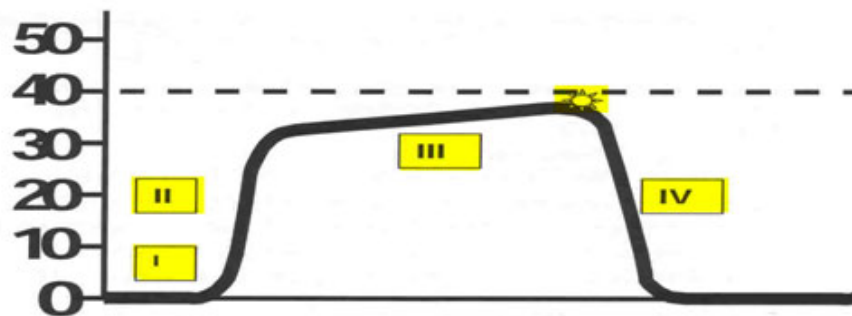
The following approximates the degree of ventilation:


- > 40 mmHg = Hypoventilation
- 35 – 40 mmHg = Normal ventilation
- 30 – 35 mmHg = Hyperventilation
- < 30 mmHg = Aggressive hyperventilation should be avoided in all patients !

3. Patients who are posturing, or who have other clinical presentations indicative of head trauma (blown pupil, focal motor findings) should be ventilated to maintain an ET_{CO₂} level between 30-35 mmHg.

NOTES & PRECAUTIONS:

- A. **Remember, pulse oximetry does not equate ventilation.** You can have a poorly ventilated patient displaying an oxygen saturation of 100%. Excessively high PaCO₂ levels can be detrimental to your patient's outcome.
- B. A sudden drop in CO₂ output from normal (35-40 mmHg) to 15-20 mmHg and an obvious change in waveform is indicative of tube displacement, most likely into the hypopharynx. Re-assess tube placement immediately and take corrective action.
- C. **DO NOT** rely on pulse oximetry or ET_{CO₂} monitoring solely to determine the efficacy of intubation.



- **PHASE I:** Respiratory Baseline, CO₂ free dead space air, normally 0.
- **PHASE II:** Expiratory Upstroke, rapid rise due to mixing of dead space air and alveolar air, should be steep.
- **PHASE III:** Expiratory Plateau, exhalation of mostly alveolar air
- : Peak Et CO₂ Level, end of exhaled air, peak end tidal CO₂ level, normally 35-45mmHg
- **PHASE IV:** Inspiratory Downstroke, inhalation of CO₂ free gas, quickly returns to the baseline.