

PROCEDURE FOR: Pedi-Cap - End Tidal CO₂ Detector

OBJECTIVE: To assist the clinician in the verification of endotracheal tube placement within the trachea.

RATIONALE: The Pedi-Cap detector measures the exhaled CO₂ of the patient's exhalation gas through a colorimetric breath indicator. The indicator color can change to three different color states (see chart). This device is to be used as a secondary verification of endotracheal tube placement.

PERFORMED BY: Respiratory Therapists, Registered Nurses, Advanced Practitioners, Physicians

EQUIPMENT: Pedi-Cap - End Tidal CO₂ Detector contained in foil packaging

- APPLICATION:**
1. Remove detector from foil.
 2. Attach the patient end of the detector to the endotracheal tube.
 3. Attach the circuit end of the detector to the breathing device (ambu bag, neopuff).
 4. Observe initial color - purple.
 5. Deliver six breaths.
 6. Observe color on expiration.
 7. Repeat delivering inspiratory breath and monitoring color change on expiration.
 8. Within the limitations noted below, proper endotracheal tube placement is implied by an expiratory CO₂ concentration of 5% or greater (gold). Delivery of rapid breaths will reveal a "blinking" color change from purple to gold.
 9. Verify proper placement of endotracheal tube through clinical assessment and chest radiograph.

INDICATOR COLOR CHART	
INDICATOR COLOR	INDICATES
Purple to Purple	CO ₂ = 0.03% < 0.5%
Purple to Tan	CO ₂ = 0.5% < 2%
Purple to Gold	2% to 5%
White	Damaged Indicator

- LIMITATIONS**
1. The Pedi-Cap O₂ Detector can be used for patients with body weight between 1 and 15kg.
 2. Patients with poor perfusion/cardiac arrest may not exhibit a color change.
 3. The Pedi-Cap detector has a rapid breath color change that can be used intermittently up to 24 hours.

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4. The Pedi-Cap CO₂ detector lasts up to two years when contained in foil packaging.
5. The Pedi-Cap CO₂ detector is single patient use.
6. The color change does not assure proper positioning of the endotracheal tube within the trachea.

COMPLICATIONS: Patient may be intubated without color change due to:

1. poor perfusion
2. during CPR due to lack of effective pulmonary blood flow
3. congenital cardiac disease
4. infant's weight less than 1 kg

APPROVAL:

EFFECTIVE DATE: 5/08

REVISION DATES: