



END TIDAL CO₂ EVALUATION DEVICE (COLORIMETRIC CO₂ DETECTOR)

	SKILL	Yes/No	COMMENTS	SKILL	Yes/No	COMMENTS
<p>PERFORMANCE OBJECTIVES The examinee will demonstrate proficiency in the use of the CO₂ detector device, interpret the colorimetric results, and institute appropriate corrective measures.</p> <p>CONDITION The examinee will be requested to check the endotracheal tube placement using a colorimetric CO₂ detector. The patient is intubated and being ventilated with a bag-valve device. The examinee must institute appropriate corrective actions based on the assessment information and color reading given. Necessary equipment will be adjacent to the manikin.</p> <p>EQUIPMENT Adult intubation manikin intubated with an endotracheal tube (ETT), colorimetric CO₂ detector device, color chart, bag-valve-mask device, suction machine, tubing and suction catheter, gloves, and goggles.</p> <p>PERFORMANCE CRITERIA</p> <p>100% accuracy required on all items for training program skills testing.</p> <p>Initial confirmation must be completed within 12 breaths and corrective measures initiated.</p> <p>Must use appropriate body substance isolation precautions--personal protective equipment (PPE).</p> <p>NAME _____ DATE ____ / ____ / ____</p> <p>PASS FAIL</p> <p>1st 2nd 3rd (final)</p> <p>EXAMINER(S) _____</p>	<p>Preparation</p>			<p>Patient with a pulse</p>		
	1. Take body substance isolation precautions (PPE)			<p><u>Yellow</u> -- correct placement; leave tube in place</p> <p><u>Tan</u> -- think about it; ventilate patient six more times and reassess tube placement</p> <p>.. <i>Check for chest rise</i> .. <i>Auscultate epigastric and lung sounds</i> .. <i>CO₂ detector color change</i></p> <p>• Leave tube in place and attempt to correct cause of low perfusion or hypocarbia</p> <p><u>Purple</u> -- incorrect placement @@ extubate, ventilate with BVM, and reintubate</p>		
	2. Check expiration date on package			<p>Patient without a pulse</p> <p><u>Yellow</u> -- Correct placement @@ leave tube in place</p> <p><u>Tan</u> -- think about it @@ ventilate patient six more times and reassess tube placement</p> <p>.. <i>Check for chest rise</i> .. <i>Auscultate epigastric and lung sounds</i> .. <i>CO₂ detector color change</i></p> <p>• Leave tube in place and attempt to correct cause of low perfusion or hypocarbia</p> <p><u>Purple</u> -- visualize vocal cords with laryngoscope</p> <p>if tube is between the vocal cords; leave tube in place and check adequacy of CPR</p> <p>Developed : 3/98</p>		
	3. Remove CO ₂ detector from packaging					
	4. Inspect CO ₂ detector for <ul style="list-style-type: none"> • purple color • dryness 					
	<p>Procedure</p>					
	1. Suction ETT if profuse amount of secretions present in tube					
	2. Remove caps from ends of CO ₂ detector if present					
	3. Connect CO ₂ detector to bag valve device					
	4. Connect bag valve device with the attached CO ₂ detector to the ETT					
5. Instruct assistant to begin ventilation						
6. Clinically check tube placement <ul style="list-style-type: none"> .. <i>Check for chest rise</i> .. <i>Auscultate epigastric and lung sounds</i> 						
7. Observe CO ₂ detector color change during the <u>exhalation phase</u> , after six breaths have been given						
8. Initiate corrective measures if needed:						
9. If tube is incorrectly placed (in esophagus) @@ extubate, ventilate with BVM, reintubate, and confirm placement						
10. Secure the ETT if tracheal placement is confirmed (need only verbalize)						
Developed 3/98						

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VERBAL TEST ITEMS (Program Option)

Indications

- When the colorimetric CO₂ detector device is part of local protocols during ETT placement.

Complications

- ETT dislodgement
- False negative if CO₂ detector is defective, moistened or expired

Notes

- Observe CO₂ detector for color change only during the exhalation phase when CO₂ is removed from the lungs. No change in color will result if there is no CO₂ to be exchanged.
- Colorimetric devices may be left in place for up to 2 hours during the resuscitation process.
- Color will remain purple when:
 - ◆ exchange of CO₂ is insufficient due to pathophysiologic changes.
 - ◆ ETT is in the esophagus
- Color may change to a tan/yellow following an esophageal intubation if the gastrointestinal system contains carbonated beverages
- Listen to lung sounds bilaterally at the 3rd and 4th ICS, mid anterior axillary line for 2 breaths on each side.