

Needle Cricothyrotomy

OBJECTIVES: The candidate will demonstrate the procedure for correct placement of a needle into the trachea using a demonstration manikin for the purpose of establishing an emergency airway when no other means to do so exists.

EQUIPMENT: Body substance isolation, 10-12 gauge catheter-over-needle for adults, 12-14 gauge for infants and children, 3 mm endotracheal tube adapter, 10 cc syringe, BVM, oxygen tank, oxygen tubing, "y" connector or meconium aspirator, tape or other method of securing needle, and timer.

PERFORMANCE CRITERIA AND CONDITIONS: The candidate will be presented with an appropriate scenario for the demonstration of proper technique on a demonstration manikin of inserting a needle into the trachea through the membrane lying between the thyroid and cricoid cartilages, and to adequately ventilate with high flow oxygen. All "critical criteria" must demonstrate 100% accuracy for acceptable performance.

Time limit: 4 minutes

Event	Does	Does Not
1. Takes or verbalizes body substance isolation precautions.		
2. Places manikin in a supine position with support under the shoulders and mild hyperextension of the neck.		
3. Palpates neck and locate slight depression just below the notch of the thyroid cartilage.		
4. Preps the skin as for IV catheter placement.		
5. Selects 10-12 gauge (adult) or 12-14 gauge (infants and children).		
6. Inserts needle and catheter assembly through cricoid membrane, aiming caudad at 45° angle.		
7. While inserting catheter, applies negative pressure to an attached 10 cc syringe.		
8. When air is withdrawn (verbalize), removes needle and advances catheter to the hub.		
9. Keeps catheter in place within the trachea.		
10. Attaches a 3mm endotracheal tube adapter to hub of catheter.		
11. Uses a jet ventilation device (40-60 psi) to ventilate.		
12. Carefully observes for chest expansion and auscultates the chest bilaterally.		
CONTINUED ON REVERSE SIDE		

13. Secures the catheter to the neck with tape.

14. Disposes of contaminated needle properly.

NOTE: Where large lumen emergency airway devices are used, (e.g., NuTrake®), follow manufacturer's instructions. These devices generally allow for adequate ventilation using a BVM and 15L/minute. The candidate must observe for the rise and fall of the chest to assure adequate ventilation.

CRITICAL CRITERIA

- ___ Failure to take or verbalize body substance isolation
- ___ Failure to palpate the neck to locate the cricoid membrane
- ___ Failure to use the appropriate size catheter-over-the-needle
- ___ Failure to insert the needle properly
- ___ Failure to verbalize negative pressure before advancing catheter
- ___ Failure to advance catheter caudally at approximately 45°
- ___ Failure to adequately ventilate through needle(s)
- ___ Failure to verbalize rapid transport to a hospital is essential
- ___ Failure to successfully perform procedure within allotted time limit
- ___ Failure to secure catheter to the neck