

AIRWAY – OROTRACHEAL INTUBATION

1. Level: Paramedic, RN
2. Purpose: Endotracheal intubation involves the passage of an endotracheal tube with direct visualization or digital manipulation through the larynx and into the trachea to provide maximum ventilatory support and airway protection for a patient. All pre-hospital intubations should be considered difficult and providers should have a low threshold to incorporate the use of an endotracheal tube introducer during intubation attempts.
3. Definitions: For quality improvement measurement, an attempt is made every time the laryngoscope blade passes the teeth and is considered successful only upon confirmation of placement using the [ADVANCED AIRWAY CONFIRMATION / MANAGEMENT Protocol](#).
4. Indications: Risk for failure of oxygenation or ventilation; at risk for failure of airway maintenance or protection; or worsening clinical course expected.
5. Contraindications: Upper airway obstruction due to foreign objects
6. Adverse Effects/Complications:
 - 6.1. Hypoxia during prolonged attempts at intubation
 - 6.2. Intubation of the esophagus
 - 6.3. Trauma to the oropharynx, vocal cords, esophagus, or trachea
 - 6.4. Right mainstem bronchus intubation
 - 6.5. Vomiting
 - 6.6. Increased intracranial pressure as a result of increased vagal stimulation
 - 6.7. Pneumothorax or a tension pneumothorax from high-pressure ventilation or underlying pre-existing trauma
7. Procedure: 7 P's
 - 7.1. Prepare
 - 7.2. Position
 - 7.3. Preoxygenate
 - 7.4. Pre-medicate
 - 7.5. Placement: Perform intubation
 - 7.6. Placement: Confirm placement
 - 7.7. Post-intubation management
8. Prepare:
 - 8.1. Prepare equipment
 - 8.1.1. Suction
 - 8.1.2. Intubation kit
 - 8.1.3. Endotracheal Tube Introducer (Bougie)
 - 8.1.4. Bag Valve Mask (BVM) with PEEP attached
 - 8.1.5. Electronic ETCO2 device
9. Position:
 - 9.1. Proper positioning aligns the axes of the oropharynx, pharynx, and larynx by elevating the head and extending the neck (sniffing position); this is contraindicated in suspected spinal injuries. Do not elevate the head for children.
 - 9.1.1. Position yourself behind the patient
 - 9.1.2. Lift the patient's head towards their feet (causing back of neck flexion)
 - 9.1.3. The patient's ear canal should be in a line or above the sternal line
 - 9.1.4. The patient's face should remain parallel to the ceiling

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- 9.1.5. Pad underneath the patient's head and shoulders to maintain this position
- 9.2. If suspected cervical spine injury, apply manual in-line cervical spine stabilization by a second caregiver and open cervical spine collar.
10. Pre-Oxygenate the patient. See the [AIRWAY - PRE-OXYGENATION Procedure](#).
11. Pre-medicate. Hypotension needs to be addressed prior to Intubation.
 - 11.1. Hypotension.
 - 11.1.1. Administer Fluid bolus in 250ml increments.
 - 11.1.2. Consider Push Dose Epinephrine 1:100,000
 - 11.2. Sedation. See the [AIRWAY - KETAMINE ASSISTED VENTILATION Protocol](#).
12. Placement: Perform 7-Step Intubation
 - 12.1. Endotracheal Tube Introducer (Bougie)
 - 12.1.1. Select the appropriate size ET Tube with the stylet removed. Only an ET 6.0 and above can be used due to size limitations.
 - 12.1.2. The ETI (Bougie) may be preloaded with the ET Tube. Most of the Bougie should protrude out of the distal end of the ET Tube with very little remaining out of the proximal end.
 - 12.1.2.1. A D-Grip loaded Bougie is recommended for the best grip and manipulation of the tube. This is accomplished by bending the proximal tip of the Bougie in on itself and forming a ring. The proximal tip of the Bougie is passed through the Murphy's eye to hold it in place.
 - 12.1.2.2. The ETI (Bougie) may also be used not preloaded. If this method is chosen you would perform laryngoscopy with the ETI (Bougie) alone. Once the cords are visualized you would gently pass the ETI (Bougie) through the cords until you meet resistance. Then load the ET Tube on the proximal end and advance the tube down the ETI into the airway to the appropriate depth.
 - 12.2. Open the mouth: with the thumb and middle finger of the right hand, use the scissor technique to open the patient's mouth.
 - 12.3. Control the tongue: holding the laryngoscope in the left hand and ETT in the right, insert the blade into the right side of the mouth and sweep the tongue to the left.
 - 12.4. Recognize landmarks: Use the blade to lift the tongue and recognize the epiglottis and pharyngeal landmarks.
 - 12.5. Control the epiglottis: Expose the glottic opening: posterior cartilages of the larynx, interarytenoid notch, and true vocal cords.
 - 12.6. Once the cords are visualized gently insert the distal tip of the Bougie until resistance is met. Advance the ET tube into the airway to the appropriate depth.
 - 12.7. Placement of the endotracheal tube: insert the tube down the right side (midline obscures the view) just anterior to the interarytenoid notch and through the vocal cords to the 21 cm (23 cm for males) mark at the incisors for females. Remove the stylet/endotracheal intubation introducer and inflate the cuff with 5-10cc of air (until no cuff leak).
 - 12.7.1. When inflating the cuff on a pediatric ET, inflate the cuff with 1 cc of air and listen for air leak. Continue to inflate 0.5 cc at a time until no cuff leak.
13. Placement: Confirmation and Post Intubation Management

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- 13.1. Begin [ADVANCED AIRWAY CONFIRMATION / MANAGEMENT](#) Protocol
- 13.2. Secure ET.
14. If unsuccessful, return to the appropriate Airway Protocol.
15. The Blind Digital method may be utilized for the intubation of a patient in whom hyperextension of the cervical spine may be contraindicated. It may also benefit patients with severe facial trauma. However, it must be emphasized that this can be a difficult procedure, and the provider must be certain that the patient cannot bite.