PEDIATRIC ORAL ENDOTRACHEAL INTUBATION

Indications

- In any child who is unable to protect his own airway
- Ineffective BVM ventilation
- Tracheal suctioning of the neonate for meconium aspiration

Procedure

1. Observe universal precautions (gloves and eye protection)
2. Position the head and pre-oxygenate the patient with a BVM and high concentration oxygen. Because of the relatively large head size, some flexion of the head may naturally occur. It may be necessary to extend the head slightly so that the face looks straight up and provides an open airway.
3. Select and check the proper equipment. Insert stylet into the ETT and lubricate the tube with water-soluble jelly. It may be necessary to lubricate the stylet slightly to advance it into the lumen of the tube.
4. Reposition the non-traumatized child by placing a small towel under the shoulders. This position facilitates visualization of the airway because of the anatomic differences.
5. Holding the laryngoscope in your left hand, introduce the laryngoscope into the right side of the child's mouth. Sweep the tongue to the left side and simultaneously lift the chin forward. Expose the vocal cords by lifting the epiglottis with the tip of the Miller blade. Be careful not to advance the blade too far and accidentally lacerate the vocal cords.
6. Gently insert the ETT until you see the tip of the tube advance past the glottic opening.
7. Remove the laryngoscope blade and stylet, while tightly holding the tube in place with your right hand.
8. Ventilate the patient using a BVM and watch for chest rise. Confirm placement by auscultating the chest bilaterally, axilla and the epigastrium with a stethoscope (end-tidal carbon dioxide detectors can be used).
9. Secure tube with tape or commercial tube tamer. It is suggested that in addition, you manually maintain tube enroute, check breath sounds frequently and after any movement. **Be aware that any substantial movement may result in displacement of the tube.**

NOTE: REFLEX BRADYCARDIA

During laryngoscopy the child is not receiving ventilation or supplemental oxygen. Thus, pre-oxygenation should always precede intubation attempts, and the heart rate should be monitored. When children experience marked oxygen deprivation, they develop a condition known as reflex bradycardia. If the heart rate slows down to less than 80 beats per minute, remove the laryngoscope immediately and oxygenate the patient for 2 minutes.

Tube Sizes for Pediatric Intubation

Age	Endotracheal tube (mm)	Suction Catheter
Premature	2.5	6F
Newborn	3.0	6F
6 month	3.5	8F
18 month	4.0	8F
3 years	4.5	8F
5 years	5.0	10F
6 years	5.5	10F
8 years	6.0	10F
12 years	6.5	10F

Blade Sizes For Pediatric Intubation

Age	Blade Size
Premature	No. 0 straight Miller
Term newborn to 3-year old	No. 1 straight Miller
3-year old to adolescent	No. 2 straight Miller or curved Macintosh
Adolescent	No. 3 curved Macintosh

Remember to base the selection of the tube size on the child's apparent size rather than chronological age if a disparity is noted. Make sure you have one size larger and smaller to allow for individual variations.

Use diameter of patient's little finger (width of nail more accurate) as a guide to ETT size or the following formula:

$$\text{Size} = \frac{(16 + \text{age in years})}{4}$$