

Help - I need to intubate this child through the LMA!

¹M Weiss and ²T Engelhardt

¹Dept Anaesthesia, University Children's Hospital, Zurich, Switzerland

²Dept Anaesthesia, Royal Aberdeen Children's Hospital, Aberdeen, UK

Background

The difficult airway society (DAS) previously suggested a simple four step protocol for the airway management in adults which may be adapted into paediatric anaesthetic practice. The secondary intubation plan or 'Plan B' suggests fibre-optic assisted tracheal intubation through the LMA/iLMA. (1) This is a simple and safe procedure for securing the airway in the paediatric patient with unexpected and known difficult tracheal intubation even for the anaesthetist not extensively trained in paediatric anaesthesia. However, the removal of the LMA over the tracheal tube (TT) is impaired by the short length of the TT, easily resulting in tube dislocation from the trachea. The Cook airway exchange catheter offers a reliable method not only for safe removal of the LMA over the TT but also for subsequent insertion of an adequate TT, particularly in paediatric patients. (2) The following table offers guidance for the compatibility of LMA, TT, fiberoptic scope and airway exchange catheters commonly employed in paediatric anaesthesia.

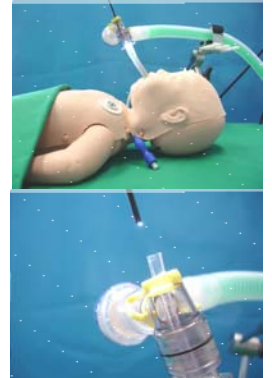


Table of corresponding cLMAs, Tracheal Tubes and Airway Exchangers for children

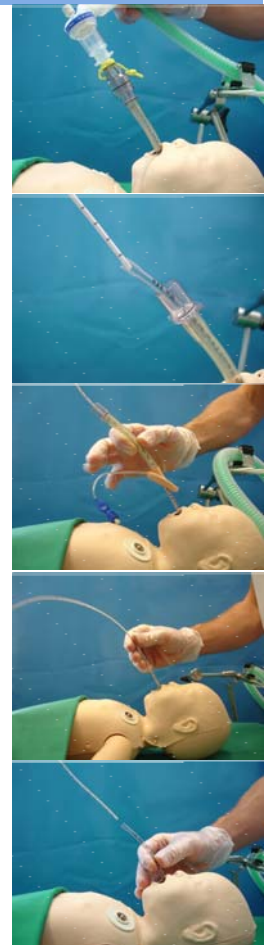
LMA	Bodyweight (kg)	Largest tracheal tube size ID (mm)
1	< 5	3.0 uncuffed
1.5	5 – 10	3.5 uncuffed
2	10 – 20	4.5 uncuffed
2.5	15 – 30	5.0 uncuffed
3	30 – 50	6.0 cuffed
4	50 – 70	7.0 cuffed
5	> 70	7.5 cuffed

Fiberoptics OD (mm)	Smallest tracheal tube size ID (mm)
2.0	>2.5
2.5	>3.0
2.8	>3.5
3.5	>4.0
4.1	>5.0
5.0	>5.5

Airway Exchanger **	Smallest tracheal tube size ID (mm)
Cook 7F / Cardiac Cath 6 F	≥ID 2.5 mm
Cook 8F	≥ID 3.0 mm
Cook 11F	≥ID 4.0 mm
Cook 14F	≥ID 5.5 mm
Cook 19F	≥ID 7.0 mm

* Pilot balloon of cuffed tubes does not pass through LMA less than size 3

** Manufacturer recommends size Cook 14F for tubes ID 5.0 mm and higher, which may be too large ID 5.0 mm tubes!



Important Notes:

Always check your own equipment before use in patients and create your own list, since outer diameters and length of equipment may vary between manufacturers and brands!
Always lubricate outer surfaces of fiberoptic, tracheal tube and airway exchanger!

Literature

- (1) Henderson JJ et al. Anaesthesia 2004; 59: 675-694.
- (2) Weiss M et al. Anaesthesist 2009; 58: 716-721.

