

MICROCUFF*

Pediatric Endotracheal Tube

FINALLY, A CUFFED ET TUBE DESIGNED FOR THE PEDIATRIC ANATOMY



MICROCUFF*

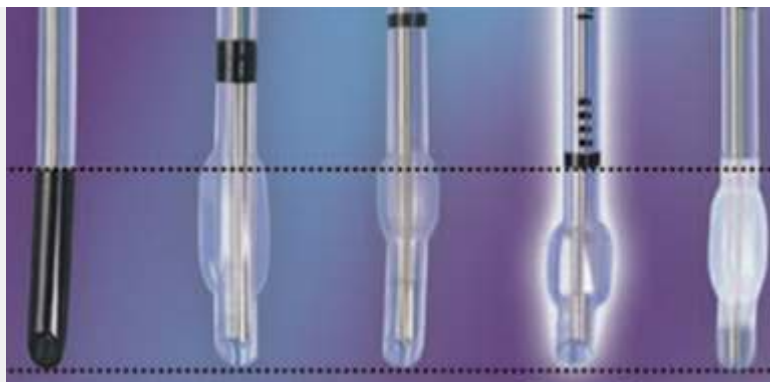
Pediatric Endotracheal Tube



COMMON CONCERNS WITH PEDIATRIC ENDOTRACHEAL TUBES

- Short, sensitive pediatric airways
- Laryngeal and tracheal damage due to inappropriate tube size
- Selecting the correct tube size, risk of repeated re-intubation
- Ensuring correct tube placement
- Accidental tube dislocation
- Ineffective ventilation due to excessive air leak
- Inadequate airway seal for ventilation
- Cuff pressure-induced laryngeal and tracheal trauma
- Aspiration of blood and secretions (ENT, oral/dental surgery)
- Ventilator-associated pneumonia (VAP) in patients on long-term ventilation

**NOT ALL
PEDIATRIC
TUBES ARE
CREATED
EQUAL!**



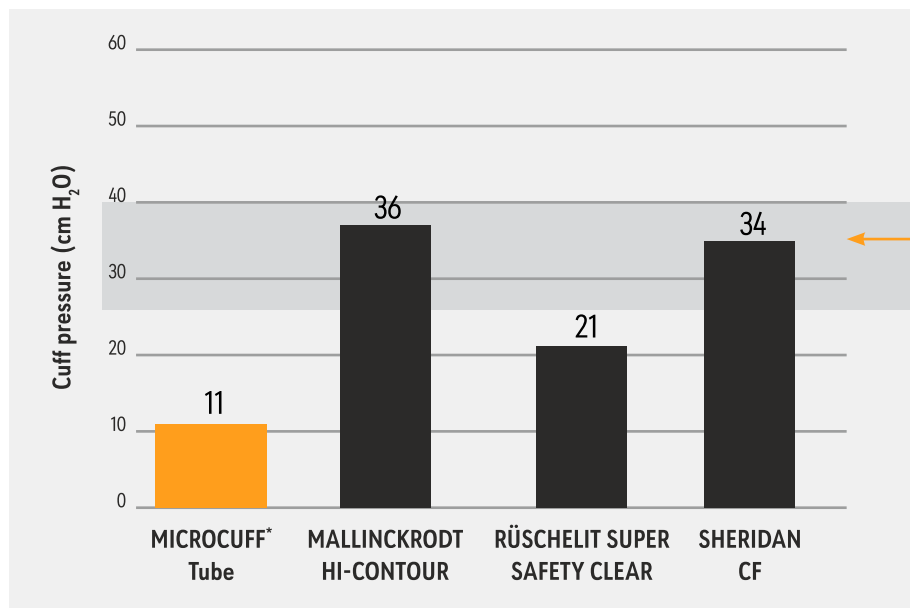
MICROCUFF* PEDIATRIC ENDOTRACHEAL TUBE A NEW STANDARD FOR PEDIATRIC AIRWAY MANAGEMENT

ADVANCED MICROTHIN POLYURETHANE CUFF MEMBRANE SEALS THE AIRWAY AT ULTRA-LOW PRESSURE

- Microthin material (10 microns) permits a true high volume, low pressure (HVLP) cuff to reduce cuff pressure
- MICROCUFF* pediatric tubes effectively seal at an average cuff pressure of **11 cm H₂O**¹, about **half** the pressure of conventional tubes
- MICROCUFF* pediatric tubes seal below the commonly presumed capillary perfusion pressure of the pediatric population, diminishing the risk to mucosal tissue²
- Ultra-low cuff pressure can reduce the risk of airway trauma
- Microthin polyurethane cuff membrane can withstand burst pressures over **800 cm H₂O**³ and has a puncture strength almost **double** compared to conventional cuffs³



MICROCUFF* TUBE SEALS AT A LOWER PRESSURE THAN CONVENTIONAL PEDIATRIC TUBES⁴

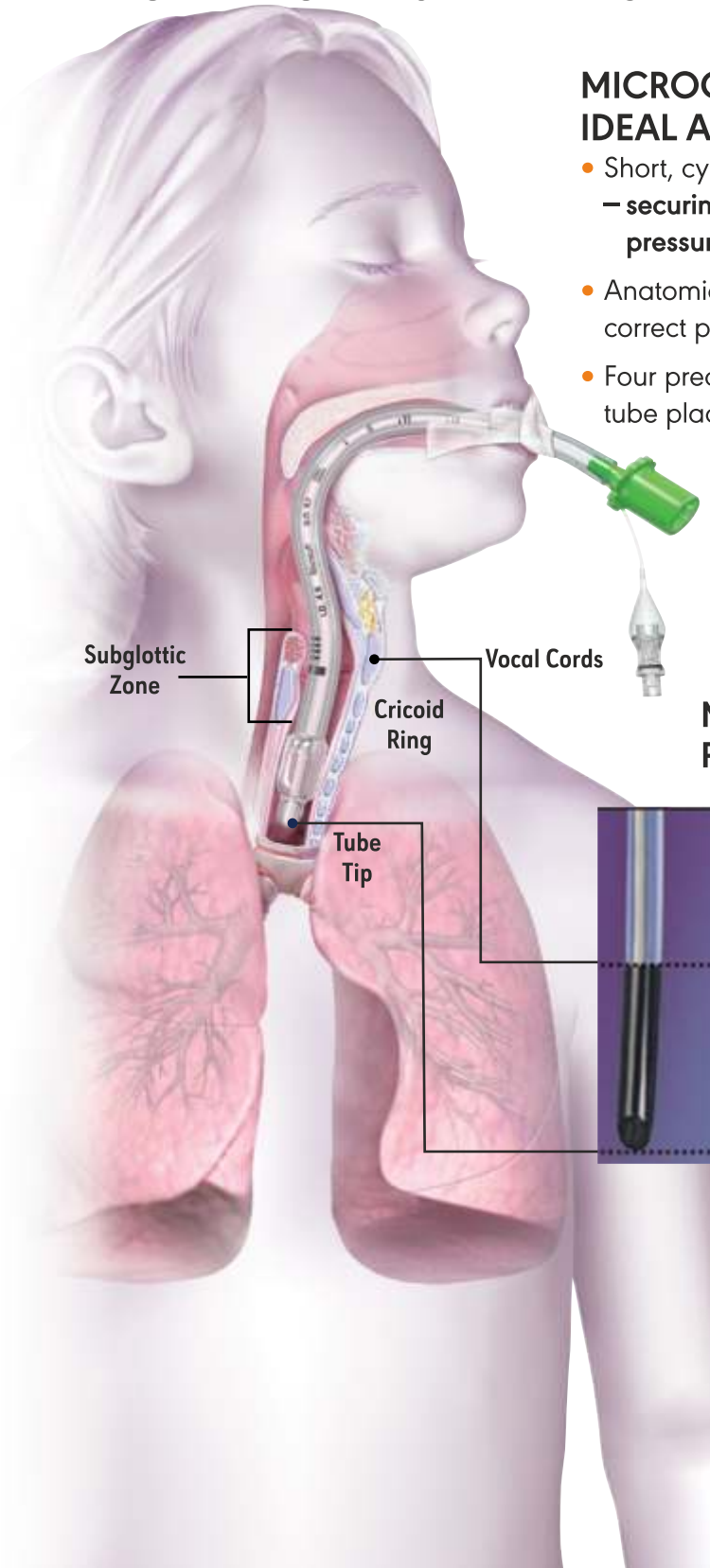


Capillary perfusion pressure in adults is 27-40 cm H₂O;^{1,2} considered lower in pediatrics.

MICROCUFF* ENDOTRACHEAL TUBE IS DESIGNED FOR THE PEDIATRIC ANATOMY – NOT A DOWNSIZED ADULT TUBE

MICROCUFF* TUBE IS DESIGNED FOR IDEAL ANATOMICAL CUFF PLACEMENT

- Short, cylindrical cuff placed near the tracheal tube tip – securing cuff placement in the trachea, not in the pressure-sensitive larynx
- Anatomically-based intubation depth mark results in correct placement and a cuff-free subglottic zone⁵
- Four precision bands to facilitate and confirm optimal tube placement



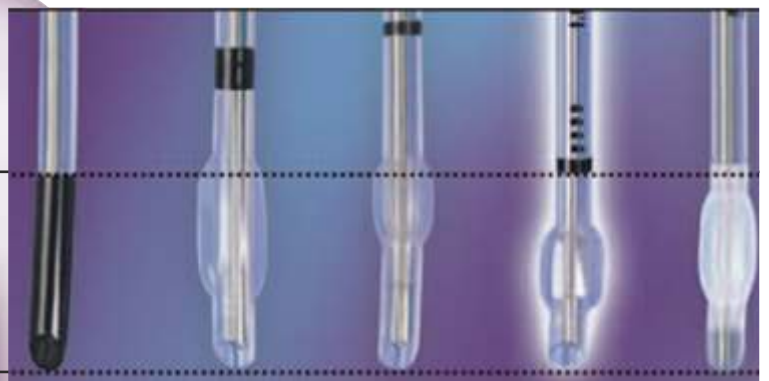
Subglottic Zone

Vocal Cords

Cricoid Ring

Tube Tip

MICROCUFF* TUBE IS DESIGNED FOR PEDIATRIC AIRWAY



MICROCUFF*
Endotracheal
Tube

“The intubation depth marks of the MICROCUFF* pediatric tracheal tube allowed the safe placement of a cuffed tracheal tube in children from a wide age range”⁵

–Weiss, et al. *BrJ Anaesthesia* 2005

MICROCUFF* TUBE OFFERS THE ADVANTAGES OF A CUFFED TUBE WITH A NEW LEVEL OF SAFETY

MICROCUFF* TUBE PROVIDES CONFIDENCE IN A SEALED AIRWAY

- Seal with a cuff membrane in the trachea instead of rigid tube shaft in the cricoid
- Low rate of re-intubation¹
 - Reduces need to replace oversized tracheal tubes
 - Less patient trauma, time and material costs
- Sealed airway allows for use of minimal and low flow anesthesia
- Sealing with a cuff compensates for different sized and shaped airways

MICROCUFF* TUBE IMPROVES PATIENT CARE

- Positive pressure ventilation with a sealed airway, providing constant and efficient minute ventilation
- Sealed airway ensures reliable end-tidal CO₂ lung function and oxygenation consumption monitoring
- Reduced risk of aspiration of blood and secretions

MICROCUFF* TUBE ALLOWS FOR SAFE TRACHEAL INTUBATION AND SEALING IN CHILDREN

- In a 500 patient study¹
 - Only 1.6% of patients had to be re-intubated due to incorrect size selection
 - Only 0.4% of patients experienced post extubation croup requiring short-term therapy

“In the hospital setting, a cuffed endotracheal tube is as safe as an uncuffed tube for infants (except the newborn) and children... Evidence has accumulated that cuffed tubes can be safely used in children”⁶

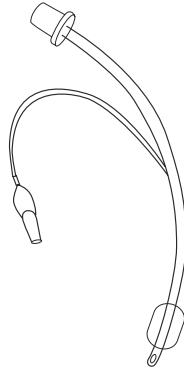
–2005 American Heart Association Guidelines for CPR and ECC



AVANOS* MICROCUFF*

Endotracheal Tube, Pediatric Oral/Nasal Magill

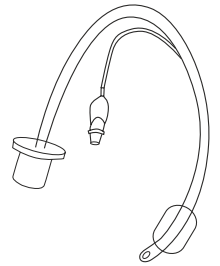
REF Number	Tube Size I.D.
35111	3.0 mm
35112	3.5 mm
35113	4.0 mm
35114	4.5 mm
35115	5.0 mm
35116	5.5 mm
35117	6.0 mm
35118	6.5 mm
35119	7.0 mm



AVANOS* MICROCUFF*

Endotracheal Tube, Pediatric Oral Curved

REF Number	Tube Size I.D.
35161	3.0 mm
35162	3.5 mm
35163	4.0 mm
35164	4.5 mm
35165	5.0 mm
35166	5.5 mm
35167	6.0 mm
35168	6.5 mm
35169	7.0 mm



RECOMMENDED PEDIATRIC TUBE SIZE SELECTION^{1,5}

Oral/Nasal Magill REF	Oral Curved REF	Tube Size I.D.	Age/Weight (Years/kg)
35111	35161	3.0 mm	term ≥ 3 kg up to <8 months
35112	35162	3.5 mm	8 months to <2 years
35113	35163	4.0 mm	2 to <4 years
35114	35164	4.5 mm	4 to <6 years
35115	35165	5.0 mm	6 to <8 years
35116	35166	5.5 mm	8 to <10 years
35117	35167	6.0 mm	10 to <12 years
35118	35168	6.5 mm	12 to <14 years
35119	35169	7.0 mm	14 to <16 years

- 1 Dullenkopf A, Gerber AC, Weiss M. Fit and seal characteristics of a new pediatric tracheal tube with a high volume-low pressure polyurethane cuff. *Acta Anaesthesiol Scand.* 2005;49:232-237.
- 2 Seegobin RD, van Hasselt GL. Endotracheal cuff pressure and tracheal mucosal blood flow: endoscopic study of effects of four large volume cuffs. *British Medical Journal.* 1984 March;228:965-968.
- 3 Data on file. Roswell, GA.
- 4 Dullenkopf A, Schmitz A, Gerber A, Weiss, M. Tracheal sealing characteristics of pediatric cuffed tracheal tubes. *Pediatric Anesthesia.* 2004; 14:825-830
- 5 Weiss M, Gerber AC, Dullenkopf A. Appropriate placement of intubation depth marks in a new cuffed pediatric tracheal tube. *British Journal of Anaesthesia.* 2004;94:80-7
- 6 American Heart Association Guidelines for CPR and ECC. 2005;16(4):24

For more information please visit: avanosmedicaldevices.com
 Call 1-844-4AVANOS (1-844-428-2667) in the United States and Canada.