KIMBERLY-CLARK* MICROCUFF*
Endotracheal Tube

Revolutionary cuff material designed to reduce micro-aspiration

Kimberly-Clark

*Trusted Clinical Solutions**

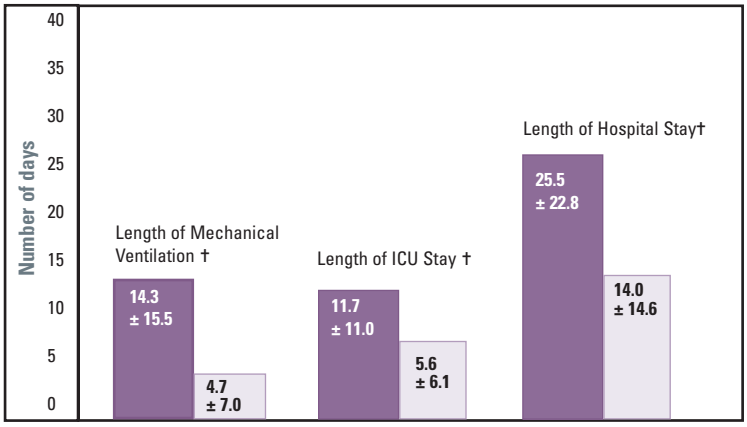
VAP is a major clinical concern...
...associated with high incidence rates, mortality, and costs[8]

It's worth taking measures to prevent even one case of VAP

- Approximately **86%** of hospital-associated pneumonia is linked with mechanical ventilation[1]
- VAP may account for up to **60%** of all deaths due to Healthcare-Associated Infections (HAIs)[6]
- Approximately **10-28%** of critical care patients develop VAP[9]
- Hospital-associated pneumonia patients have a mortality rate of **40% to 80%**[11]
- VAP increases patient time in the ICU by **28%**[10]
- Each incidence of VAP is estimated to generate an increased cost of **6,000 to 22,000 GBP**[11]

Comparisons of patients with and without VAP[7]

A retrospective matched cohort study of patients admitted to an ICU between January 1998 and June 1999, who received mechanical ventilation for >24 hours.



"The pathogenesis of VAP... is linked to two separate but related processes: colonization of the aerodigestive tract with pathogenic bacteria, and aspiration of contaminated secretions." [8]

— Kollef, et al. Respiratory Care, 2005

Ventilator-associated pneumonia (VAP) is a frequent nosocomial infection in the intensive care unit[1]

Micro-aspiration is a major cause of VAP[2]

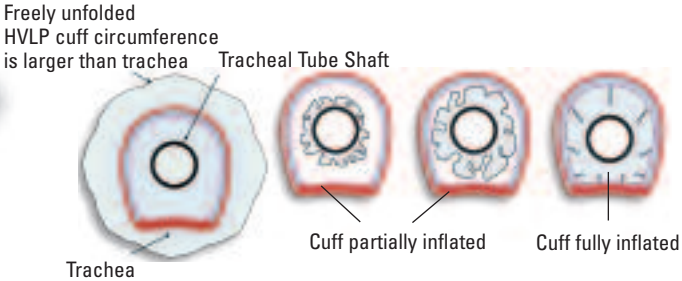
- Micro-aspiration of potentially infectious secretions through gaps in the endotracheal tube cuff is known to be a leading cause of VAP[2]
- The cuff seal is the final barrier that protects the lungs from aspiration of potentially infectious pharyngeal secretions
- When intubated, conventional high volume, low pressure (HVLP) PVC cuffs create channels that permit fluid to leak through the cuff and into the lungs

Conventional Endotracheal Tube

Note the prominent channel formations in the PVC cuff

CT scan[3,4] (transversal) of an inflated HVLP-cuff in excised animal trachea (cuff-pressure: 20 cm H_2O)

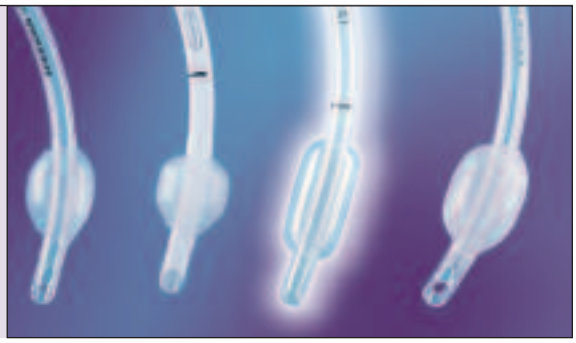
Conventional HVLP PVC cuffs create folds when inflated, causing channels to form and allowing fluid to leak past



KIMBERLY-CLARK* MICROCUFF* Endotracheal Tube … Prov

The better the seal, the less micro-aspiration

Cuff length and cylindrical shape of MICROCUFF* tubes are optimised for increased protection against fluid leakage



KIMBERLY-CLARK* MICROCUFF* Endotracheal Tube

Note the absence of visible channel openings in the MICROCUFF* tube

CT scan[3,4] (transversal) of an inflated KIMBERLY-CLARK* MICROCUFF* Tube in excised animal trachea (cuff pressure: 20 cm H_2O)

The MICROCUFF* tube has advanced microthin polyurethane cuff material that allows the channels to "self-seal," reducing the possibility of leakage

"In conclusion, our in vitro experiments show the recently introduced MICROCUFF tube cuff to be the only one of the tested HVLP endotracheal tube cuffs that effectively prevents fluid leakage around the tracheal tube when cuff pressure was set to 30 cm H_2O or less."* [3]

—Dullenkopf, et al. Intensive Care Medicine, 2003

vides A Superior Tracheal Seal[6,7]

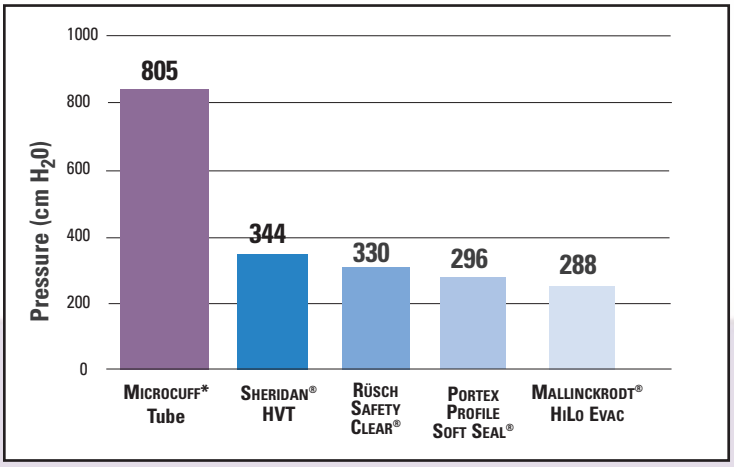
The MICROCUFF* tube features an advanced microthin polyurethane cuff material

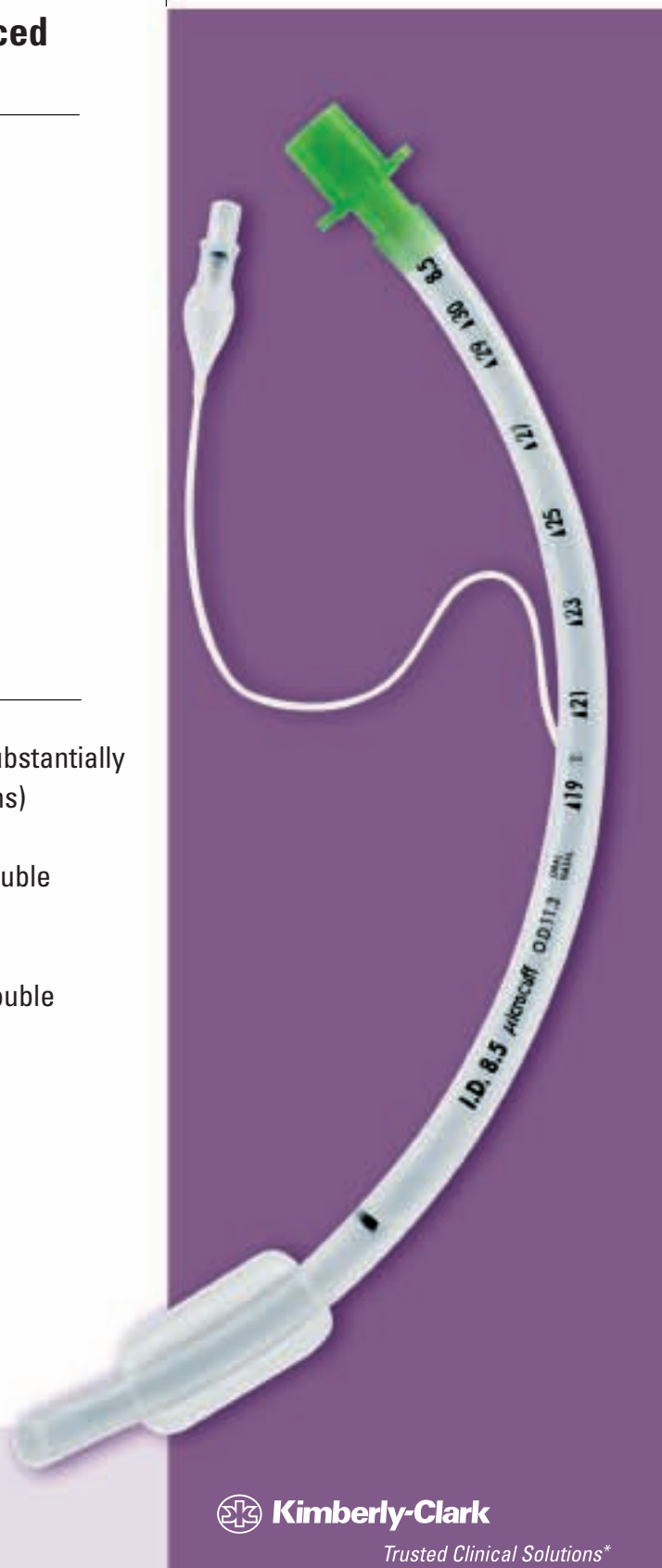
- Provides an effective seal at low cuff pressure
- May reduce micro-aspiration of potentially infectious pharyngeal secretions
  — *Potentially lowers risk of VAP in prolonged ventilation*
- Designed for better contact with tracheal contour
- Thinner material allows for greater visualisation of vocal cords when cuff is deflated

Polyurethane can be made thinner and still maintain its strength[4]

- Polyurethane (10 microns) cuff membranes are substantially thinner than conventional PVC cuffs (50-80 microns)
- Puncture strength of MICROCUFF* tube is almost double compared to conventional cuffs[4]
- Burst pressure of MICROCUFF* tube is more than double compared to conventional cuffs[4]

Cuff Burst Pressure[4]





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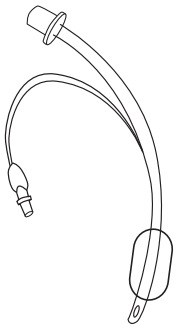
Kimberly-Clark* Microcuff* Endotracheal Tube, Oral/Nasal Magill, Murphy Eye

REF Number	Tube Size I.D.
35210	5.0 mm
35211	5.5 mm
35212	6.0 mm
35213	6.5 mm
35214	7.0 mm
35215	7.5 mm
35216	8.0 mm
35217	8.5 mm
35218	9.0 mm
35220	10.0 mm



At Kimberly-Clark, our mission is to deliver clinical solutions that you can depend on to meet the demands of your fast-paced world. Whether your needs involve preventing healthcare-associated infections, surgical and digestive solutions or pain management, with Kimberly-Clark you'll always have one less worry.

Healthcare-Associated Infection Solutions

Surgical Solutions

Digestive Health

Pain Management

Commitment to Excellence

If, for any reason, our products do not meet your expectations, please let us know your comments or suggestions for improvement. Your input will result in a concerted effort on our part to meet your requirements. Our goal is to provide quality products that completely meet your needs time after time.

For more information, please +44 1732 594333 in the United Kingdom and Ireland or visit our web site at www.kchealthcare.com.

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3 Dullenkopf A, Gerber AC, Weiss M. Fluid leakage past tracheal tube cuffs: evaluation of the new Microcuff* endotracheal tube. Intensive Care Medicine.2003;29:1849-1853.
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5 Safdar N, Dezfulian C, Collard HR, Saint S. Clinical and economic consequences of ventilator-associated pneumonia: a systematic review. Crit Care Med. 2005;33:2184-2193.
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11 Nosocomial pneumonia: incidence, morbidity and mortality in the intubated-ventilated patient. Pittett 1994

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