Endotracheal Tube Exchanger
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The Endotracheal Tube Exchanger can replace an endotracheal tube efficiently and is ideal for replacing tubes in cases of tube malfunction, inappropriate size, prolonged time on the ventilator or restricted airway tracks associated with surgery or anatomical complexities.

The current standard process for endotracheal tube exchange can become unstable and without direct visualization, is sometimes challenging to perform, even for experienced professionals. However, the Endotracheal Tube Exchanger, used in conjunction with a fiber optic bronchoscope, enables a physician to visualize the internal airway as the old endotracheal tube is cut and removed, and new tube is slid into place quickly and accurately. This disposable device includes an oral stabilizer and a slicing tool that securely fastens the fiber optic scope and protects the patient’s mouth during tube exchange.

**UNIQUE DESIGN**
The Endotracheal Tube Exchanger has two interlocking components. The cutting handle has a precision-sized blade that safely slices the old tube for quick removal, while the mouthpiece protects the patient and provides stability.

**SAFETY**
The Endotracheal Tube Exchanger ensures direct, internal visualization throughout the procedure by a second physician. It ensures placement of the new tube without losing the airway track and without interference from other tubes in place.

**EASE OF USE**
Replacing tubes with the Endotracheal Tube Exchanger is quick and effective. This device does not significantly disrupt the patient’s ventilation and is suitable for use by physicians with varying skill levels.
A hemostat is used to pull the tube out against the blade.

A cylindrical blade holds the bronchoscope in place and cuts through the old tube.

The mouthpiece provides safety and stability.

The bronchoscope allows direct visualization and maintains airway opening.

The hand-held device contains the blade and gives user control.

A grooved design allows the two components to interlock.
The mouthpiece is placed over the patient's current breathing tube. The old and new tubes are trimmed to a shorter length. A fiber optic endoscopic camera or stylette is loaded with the new breathing tube and the cutting handle is locked around the scope below the tube. The scope is inserted into the old tube just beyond its tip to visualize the carina. The handle is then secured within the mouthpiece, using the interlocking component of the device. Using forceps, the old tube is pulled out while being split by the cutting tool. The handle is then sprung loose and the new tube is pushed along the fiber optic scope to the desired position. The mouthpiece is removed and the patient is reconnect to the ventilator.

The mouthpiece is approximately a 35 mm x 20 mm ellipse. The cutting handle is 150 mm x 35 mm x 50 mm. The blade is currently designed as a 5.7 mm or 6.4 mm diameter.

Injection molded disposable mouthpiece: contains a quick alignment mounting bracket for the cutting tool
Injection molded cutting handle: mating pieces and locking latch
An array of sized disposable cutting blades: hold and align fiber optic cameras of common dimensions, attached to cutting handle

Medical grade stainless steel
Class 1 medical grade polymers

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Michael A. Olympio, MD
Michael A. Olympio, MD, a neurosurgical anesthesiologist, is a professor of anesthesiology at Wake Forest School of Medicine, and is the founder of the school's Patient Simulation Laboratory.

Inventor

SPECIALTY
Olympio, a clinical neurosurgical anesthesiologist, specializes in robotic, urologic and general anesthesia. Olympio uses his expertise in medical simulation and anesthesia technology to teach industry and medical professionals how to use, improve and troubleshoot anesthesia technology.

EXPERIENCE
Olympio first devised the concept for the Endotracheal Tube Exchanger while training medical professionals in the traditional techniques for exchanging tubes. These methods use a laryngoscope or a stylette to hold the airway open as the old endotracheal tube is removed and replaced by the new one. Olympio observed the shortcomings of these methods, and conceived a device that could improve the procedure, both in speed and accuracy.

One evening, Olympio was called on to perform an endotracheal tube exchange in an emergency situation with a trauma patient. Due to the nature of the patient's injuries, he was wary whether the traditional method of exchanging tubes would be effective or would result in further trauma. He decided to use a makeshift tool previously reported, and studied in his simulation laboratory, and found that it performed remarkably well. With this real-world experience to support the concept, he designed a device that reliably and safely performs the procedure each time.
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