

First Bite: Neonatal and Pediatric Endotracheal Tube Securement Device

Tech ID: 34795 / UC Case 2026-904-0

ABSTRACT

Researchers at the University of California, Davis have developed a non-adhesive, adjustable, and low-profile device designed to securely stabilize neonatal and pediatric endotracheal tubes while minimizing skin injury and pressure sores.

FULL DESCRIPTION

First Bite is a non-adhesive securement system that combines an external stabilization component with an adjustable headgear assembly. It secures endotracheal tubes sized 2.0 to 5.5 mm ID in neonates and pediatric patients under 10 kg, allowing controlled repositioning of the endotracheal tube and eliminating the need for skin adhesives. The device's design reduces slippage and pressure sores by allowing controlled repositioning, while medical-grade materials ensure patient comfort and skin safety.

APPLICATIONS

- ▶ Neonatal Intensive Care Units (NICU).
- ▶ Pediatric Intensive Care Units (PICU).
- ▶ Hospitals and healthcare providers managing intubated infants and small children.
- ▶ Medical facilities seeking improved ET tube securement solutions

FEATURES/BENEFITS

- ▶ Reduces adhesive-related skin injury and rework by using non-adhesive securement.
- ▶ Prevents lip pressure injuries by enabling side-to-side ET tube repositioning.
- ▶ Improves patient comfort by minimizing bulk and weight with a low-profile design.
- ▶ Enables controlled tube repositioning and secure stabilization during clinical use.
- ▶ Enhances skin tolerance by using a medical-grade silicone-coated contact surface.
- ▶ Stabilizes the tube with a multi-point, adjustable headgear fit for consistent positioning.
- ▶ Eliminates adhesive failure and reduces associated skin injuries from tape-based securement.
- ▶ Prevents pressure sores by allowing repositioning rather than fixed ET tube placement.
- ▶ Reduces ET tube slippage and instability—especially in neonatal and pediatric patients—through secure, adjustable stabilization.
- ▶ Cuts maintenance time and decreases frequent re-securement events by improving hold reliability and enabling controlled adjustments.

CONTACT

Steven P. Tudor

sptudor@ucdavis.edu; TechTransfer@ucdavis.edu

tel: .



INVENTORS

- ▶ Amstutz, Rachel
- ▶ Lindh, Camilla
- ▶ Melnichuk, David
- ▶ Penumasta, Lakshmi
- ▶ Tucker, Phineas

OTHER INFORMATION

KEYWORDS

atraumatic, braided
 headgear, cotton straps,
 endotracheal tube,
 medical-grade silicone,
 neonatal care, pediatric
 intubation, reusable zip
 tie, securement device,
 side-to-side adjustability

CATEGORIZED AS

- ▶ **Medical**
- ▶ **Devices**

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