



# One unplanned extubation is one too many.

Use the power of sonar to see your endotracheal tube position and patency in real time, and potentially intervene before neonate distress occurs.

**Medtronic**

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## Your patients are delicate – our ETT monitoring solution is sensitive.



In the NICU, unplanned extubations (UEs) are a significant patient safety concern.<sup>1</sup> There's little standardization for UEs,<sup>2</sup> and some interventions can impact neonatal development and lead to additional stress.<sup>3</sup>

The SonarMed™ airway monitoring system may help improve a clinician's ability to manage a patient's airway – offering clinicians confidence in having immediate feedback to potential airway concerns – by assisting in providing precise, continuous, real-time monitoring of endotracheal tube (ETT) position and patency†.

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## Monitor ETT movement. Reduce unplanned extubations. Optimize suctioning.

Throughout the duration of an intubation, the SonarMed™ system:



Measures the location of the ETT tip and may assist in detection of movement within the trachea to help reduce unplanned extubations



Measures the circumference of the patient's trachea to observe any movement into a smaller or larger passageway



Assists in identifying the precise location of obstructions within the ETT – and the percentage obstructed – for optimal suctioning and removal of secretions

# Precise ETT airway monitoring didn't exist – until now.

The SonarMed™ system sensor connects outside of the patient to the ETT by replacing the 15 mm connector. It uses sonar technology to emit sound waves through the ETT and measures the sound wave intensities as they return to the sensor.

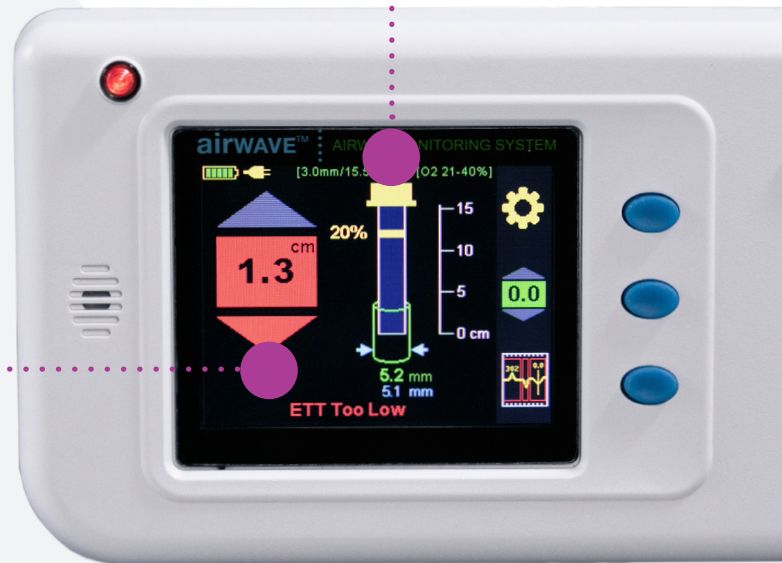


## Obstruction indicator

The easy-to-read screen displays changes of the ETT and assists in identifying the precise location of obstructions within the ETT – and the percentage obstructed.

## Movement indicator and alerts

The system analyzes the amplitude of the echoes to estimate the position and integrity of the tube. The system then provides immediate visual and audible alerts if movement is detected.



1. Meyers JM, Pinheiro J, Nelson MU. Unplanned extubation in NICU patients: are we speaking the same language? *J Perinatol.* Sept. 2015;35(9):676-677.
2. Galiote JP, Ridoré M, Carman J, et al. Reduction in unintended extubations in a level IV neonatal intensive care unit. *Pediatrics.* May 2019;143(5):e20180897.
3. Cong X, Wu J, Vittner D, et al. The impact of cumulative pain/stress on neurobehavioral development of preterm infants in the NICU. *Early Hum Dev.* May 2017;108:9-16.

†The SonarMed™ airway monitoring system should not be used as the sole basis for diagnosis or therapy and is intended only as an adjunct in patient assessment.

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