



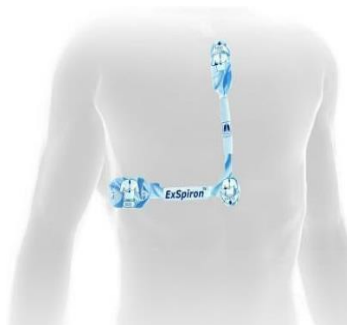
# THE PROVEN RESPIRATORY SENTRY

## Why Monitor Minute Ventilation?

Post-operative respiratory failure is the largest single-source of **avoidable in-patient days** and is the **third most common patient safety event**.<sup>1</sup>

Respiratory compromise increases patient mortality rates by over **30%** and hospital and ICU stays by almost **50%**.<sup>2</sup>

**Prevention is key:** ASA, CMS and The Joint Commission recommend continuously monitoring patients' respiratory status including the depth of ventilation.



## QUICK

Minute Ventilation Monitoring may signal a decline in respiratory status **15-30 minutes** before traditional measures.<sup>3</sup>

## PATIENT FRIENDLY

**Non-invasive and comfortable** for both adults and children.

## COST EFFECTIVE

Inadequate monitoring of patients is a **major cause for adverse events**. Advanced respiratory monitoring reduces high cost events.<sup>4,5</sup>

Monitoring Minute Ventilation provides the earliest indication of change in respiratory status in non-intubated patients.

# MINUTE VENTILATION AND *EXSPIRON*

## What is Minute Ventilation?

Minute Ventilation (**MV**) is the amount of air moved through the lungs in a minute and is a direct measurement of a patient's respiratory status.

## Fundamental unit of breathing

Tidal volume (TV) alone is more important than respiratory rate (RR).  
Minute Ventilation (MV) gives you both.

$$MV = TV \times RR$$

## Monitoring MV can help you:

- Drive earlier action, minimizing Code Blue Calls / Rapid Responses and unplanned escalation of care
- Promote timely extubation / reintubation decisions resulting in fewer ventilator days
- Improve titration of sedatives / anesthetics reducing LOS in procedure rooms and PACU
- Reduce alarm fatigue with actionable alarms.

## *ExSpiron* Minute Ventilation Monitor

The *ExSpiron* system is a next generation patient monitor providing real-time, continuous, non-invasive Minute Ventilation measurements, previously unavailable for non-intubated patients. Now you can monitor MV everywhere care is delivered:

PACU, General Hospital Floor, ICU, Procedural Sedation (OR, IR, endoscopy, cardiac cath), ED

Quick and easy set up, **NO calibration required.**

**FDA cleared for Pediatric and Adult patients.**

The *ExSpiron* uses a lightweight monitor, a patient cable, and a disposable electrode PadSet to detect changes in breathing.



<sup>1</sup>HealthGrades Sixth Annual Patient Safety in American Hospitals Study," Healthgrades, 2011.

<https://www.hospitals.healthgrades.com/CPM/assets/File/PatientSafetyInAmericanHospitalsStudy2009.pdf>

<sup>2</sup>Scott Kelley, Edward Kelly, Lobat Hashemi, Mary Erslon, and Maxwell Weinmann. Clinical And Economic Burden Of Respiratory Insufficiency, Arrest And Failure Not Present On Admission In Patients With Sepsis. D22. ADVANCING CRITICAL CARE THROUGH NEW APPROACHES AND PARADIGMS. May 1, 2013, A5304-A5304

<sup>3</sup>Voscopoulos CJ, MacNabb CM, Freeman J, et al. Continuous noninvasive respiratory volume monitoring for the identification of patients at risk for opioid-induced respiratory depression and obstructive breathing patterns. J Trauma Acute Care Surg. 2014;77:S208-15

<sup>4</sup>Quach JL, Downey AW, Haase M, Haase-Fielitz A, Jones D, Bellomo R. Characteristics and outcomes of patients receiving a medical emergency team review for respiratory distress or hypotension. J Crit Care.

<sup>5</sup>Dimick JB, Chen SL, Taheri PA, Henderson WG, Khuri SF, Campbell DA Jr. Hospital costs associated with surgical complications: a report from the private-sector National Surgical Quality Improvement Program. J Am Coll Surg. 2004;199(4):531-537. 2008;23(3):325-331.

