



## Novel Respiratory Monitoring with Ultrasound

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**The Wisconsin Alumni Research Foundation (WARF) is further developing a device that employs ultrasound signaling, paired with machine learning, to provide early alerts to respiratory compromise and/or failure during sedation.**

### Overview

Despite technological advancements, morbidity and mortality rates remain high in patients under sedation, often due to delayed detection of early respiratory compromise and/or failure.

### The Invention

UW-Madison researchers have developed a respiratory monitoring device utilizing doppler ultrasound signals acquired from the patient's airway and comparing them to baseline parameters, often via a machine learning algorithm. When a threshold change is detected, an alarm is provided to indicate respiratory compromise and/or failure, which can include early airway compromise, airway failure and/or airway obstruction.

### Applications

- Non-invasive Doppler Ultrasound device to monitor airflow changes in a patient's airway during a medical procedure or as a general patient monitoring tool

### Key Benefits

- Prompts timely airway rescue and reduces the morbidity and mortality rates associated with undetected respiratory compromise and/or failure
- May be performed before, during or following a procedure
- May indicate the underlying cause of respiratory compromise and/or failure
- Advantageous for both clinical and outpatient settings and research and teaching applications
- May one day complement pulse oximetry, which can often be several minutes late in warning about the onset of oxygen deprivation

### Stage of Development

A prototype has been developed.

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## Publications

- [Read a profile of the technology.](#)

## Tech Fields

- [Medical Imaging : Other diagnostic imaging](#)

For current licensing status, please contact Jeanine Burmania at [jeanine@warf.org](mailto:jeanine@warf.org) or 608-960-9846

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