

UVM Innovations

University of Vermont Office of Technology Commercialization

802-656-8780 | innovate@uvm.edu

Optimization of ARDS Ventilation with Real-Time Lung Mechanics Monitoring

Case #538

Provides personalized, real-time information on a patient's lung mechanical properties, reducing lung injury and optimizing oxygenation levels.

Inventors:

[Jason Bates](#) & Bradford J. Smith

Description:

Currently there are no drugs available for acute respiratory distress syndrome (ARDS), an often fatal condition. The only treatment consists of supportive therapies, mainly mechanical ventilation. A patient can make a full recovery if they are properly ventilated.

Unfortunately, mechanical ventilation can further damage the already injured lung tissue, leading to ventilator induced lung injury (VILI), which can lead to ARDS mortality. There is a need for improved ventilation that takes into account the individual patient's current lung condition, state of damage or recovery, and the underlying cause of the ARDS.

Jason Bates and Bradford J. Smith have invented a diagnostic tool that uses a new mode of mechanical ventilation -- variable ventilation -- to optimize the management of patients with ARDS. The invention monitors a patient's lung parameters over time, providing personalized, real-time information on the patient's lung mechanical properties to optimize ventilation strategies. By reducing lung injury and optimizing oxygenation levels, the complications of ARDS can be reduced and mortality rates improved.

Applications:

- Management of ARDS patients

Advantages:

- Monitors lung damage in real-time
- Provides personalized ventilation treatment
- Improves mortality rates for ARDS

Patent Information:

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