



# A catheter-based intravenous respirator

**A device for direct gas exchange with the venous system to deliver oxygen and support critically ill patients.**

**IP Status:** PCT Pending; Application number PCT/US2023/073342.

## Applications

- Deliver large volumes of oxygen to patients
- Intravenous gas exchange

## Technology Overview

Researchers at the University of Minnesota have developed a novel device for the intravenous delivery of large volumes of oxygen to critically ill patients. Oxygen delivery is increased via the use of a porous polymer material to assist in the diffusion of oxygen under high pressures. Control of the pressure and flow rate facilitate the formation of oxygen nanobubbles and the exchange of carbon dioxide. This technology has the potential to eliminate intubation and change critical care practices as the need for sedation and ICU care would be minimized.

## Phase of Development

### TRL: 1-2

Device has been conceptualized.

## Desired Partnerships

This technology is now available for:

- License
- Sponsored research
- Co-development

Please contact our office to share your business' needs and learn more.

## Researchers

- [Demetris Yannopoulos, MD](#) Professor of Medicine, Center for Resuscitation Medicine

## Technology ID

2021-160

## Category

Life Sciences/Human Health  
Life Sciences/Medical Devices

## Learn more

