

3D-printed Miniature Ventilator Shows Promise for Respiratory Support in NIH Study

Study published in Science Translational Medicine

LEWES, DE, USA, October 14, 2022 /EINPresswire.com/ -- -- [fluidIQ](#), a startup MedTech company developing fluidics-based respiratory solutions, shared positive study results of a large animal study using their in-line 3D-printed ventilator, performed by the National Institutes of Health (NIH) Clinical Center that has been published in the journal, Science Translational Medicine.

Pritchard et al. studied the in-line ventilators, designed by fluidIQ, in swine models of acute lung injury (a common severe outcome in a number of respiratory threats including COVID-19). The 3D-printed devices harness the science of fluidics and use compressed air or oxygen to provide respiratory support. In the study, NIH researchers tested three versions of the device that were built to correspond to mild, moderate and severe lung injury and showed they provided adequate support for acute and mild lung injury. Designed to support human lungs, the devices were shown to be insufficient for supporting severe lung injury in the swine, resulting in elevated respiratory rate and reduced tidal volume.



HOPE inVent(tm) on left compared to makeup tube on right to show size



fluidIQ logo

An excerpt from the journal summary reads “There remains a need for easy-to-use ventilators that can be rapidly deployed to provide respiratory support in response to crises or in low-resource environments.” The summary concluded, “With further optimization and testing, these ventilators could be a simple yet powerful tool.”

Link to article in Science Translational Medicine:

<https://www.science.org/doi/10.1126/scitranslmed.abm8351>

Pritchard et al. In-line miniature 3D-printed pressure-cycled ventilator maintains respiratory homeostasis in swine with induced acute pulmonary injury. *Sci Transl Med.* 2022 Oct 12;14(666):eabm8351. doi: 10.1126/scitranslmed.abm8351. PMID: 36223450.

“We believe this research provides evidence that our emergency ventilator is a game-changing tool in the EMS pre-hospital space and around the world where emergency respiratory support is needed,” said Matt Vogelhuber, RPh, CEO, fluidIQ.



Matt Vogelhuber, RPh, CEO, fluidIQ

Background on fluidIQ:

fluidIQ is two-years-old and has reached milestones that take most companies several years to

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*Matt Vogelhuber, RPh, CEO,
fluidIQ*

accomplish. Recently, the company signed a licensing and joint development agreement with Pulmodyne, an Intersurgical company and a global manufacturer and distributor of airway and respiratory products. Founded in summer 2020, fluidIQ has a collaborative research agreement with the National Institutes of Health’s Clinical Center. The company will be submitting its first product to the U.S. Food and Drug Administration (FDA) and commercialization is expected in second quarter 2023, pending FDA clearance.

The company’s lipstick-sized resuscitator/ventilator is

aimed at disrupting the emergency medicine space by replacing antiquated 70-year-old manual resuscitation tools that are known to be cumbersome for responders and risky for patients. The tiny technology requires no electricity or batteries and can be operated with compressed oxygen or air.

fluidIQ's experienced executive team is made up of industry executives, doctors, engineers and patient advocates who came together in the early days of the pandemic.

About fluidIQ™

fluidIQ, a public benefit and Delaware corporation, provides simple yet elegant solutions based on proprietary fluidics technology. The company was founded by a group of doctors, engineers and patient advocates who joined together to find solutions for gaps in medical needs, including ventilators, in the midst of the coronavirus-caused world crisis. fluidIQ aims to deliver hope to a world in need with simple, easy-to-deploy technology solutions that solve the most pressing medical challenges of our time. fluidIQ's roadmap for an entire family of products is based on fluidics-operated devices dedicated to filling gaps in emergency and preparedness protocols that are user-friendly, scalable and cost-effective. The science of fluidics uses air or fluids to operate things automatically without the need for electricity or batteries. Visit www.fluidIQ.org to learn more.

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Teresa Barnes
fluidIQ
[email us here](#)

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