

EMCO: EXTRACORPOREAL MEMBRANE OXYGENATION

World's First Portable System for Treating Acute Heart and Lung Failure, from [Hemovent](#)

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ECMO Applications Have Tripled in Five Years Despite Drawbacks of Antiquated Technology.

What If New ECMO Technology Was Available to Reduce Device-Related Complications in ICUs?

“ECMO is an effective therapy for cardiac and respiratory failure. But size, complexity and cost of standard ECMO can be significantly improved,” says [Prof. Dr. med Michael Quintel](#), Director, Department of Anesthesiology, University Medical Center, Göttingen, Germany.

ECMO is a method of supporting or replacing heart-and-lung function for 1–30 days by an external machine. ECMO is currently used in dedicated ECMO centers in ICUs by specially trained anesthesiologists, clinicians or pneumologists. Despite its well-documented drawbacks, ECMO use is growing. In April 2016, a German healthcare consulting authority reported that the number of applications of ECMO has tripled over the past five years.

“ECMO markets are growing rapidly in spite of cumbersome and outdated technology,” says [Prof. Dr. Peter Borges](#), founder and CEO of AssetsConsulting Healthcare. Every year millions of people have medical conditions that lead to cardiac and respiratory failure, or a combination of both. Many of them have to be admitted to hospital emergency departments in often life-threatening situations. ECMO devices enable clinicians to save patients in such life-threatening situations.

However, there is a downside: device-related and inherent ECMO complications. A trained ECMO technician must be present at bedside 24 hours per day in addition to the patient’s usual nursing presence. Nonetheless ECMO use is saving more and more lives. Still, among the biggest drawbacks to increasing the indications for ECMO treatment are its complexity and that it is not sufficiently portable.

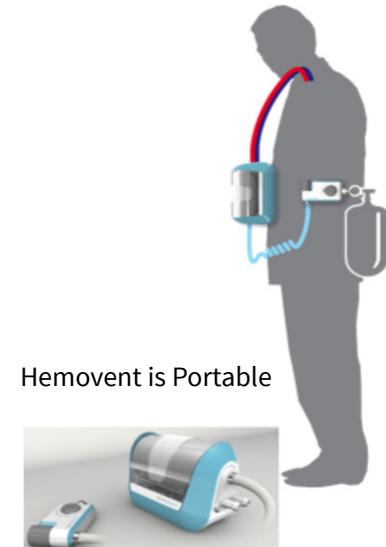
NOTE: The Hemovent ECMO system is not approved for sale at this time.

Every ECMO patient needs to be transported under severely restricted space conditions either within a hospital, from a referring clinic or even from the site of an emergency incident.

And then, over the course of treatment, getting the patient out of bed and ambulating is a critical success parameter for ECMO.

“There is growing evidence that improved patient outcomes are realized with ECMO. The challenge is to evolve ECMO technology so it can be readily applied and that a patient receiving ECMO treatment can be easily and safely transported within a hospital or elsewhere,” says [Prof. Dr. med Ralf Muellenbach](#), Director, Clinic for Anesthesiology and Intensive Care Medicine, Clinic of Kassel, Germany.

It would appear that the portability issue for ECMO will be solved. [Hemovent](#) (Aachen, Germany) is developing an ECMO system that weighs less than a pair of shoes, functions like a natural heart, and does not require a battery or software. Indeed, in the future, portable extra-corporeal heart and lung support may rapidly develop to be the preferential treatment for heart and lung failure... if ECMO complications can be further reduced.



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What the Experts Are Saying About the World's First Portable ECMO System Designed as Therapy for Cardiac and Respiratory Failure



Prof. Dr. Peter Borges
Founder and CEO
Assets Consulting Healthcare

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Dr. Oliver Marseille
Co-Founder and Chief
Technology Officer
Hemovent GmbH

“Although ECMO has proven to be an effective treatment for acute respiratory and circulatory failure and portability is very likely to expand the use of ECMO, we already are developing the next-generation ECMO system that we expect will mitigate many current device-related ECMO complications.”



Prof. Dr. med Tobias Welte
Director, Clinic for Pulmonology
Hannover (Germany)
Medical School

“It is well-known that patient ambulation during ECMO improves treatment results. A fully portable and even wearable ECMO system is urgently needed both for shorter term applications as well as an eventual bridge to lung transplant.”