Researchers Using Openwater Monitor Report Accurate Detection of Large Vessel Occlusion in Suspected Stroke

Innovative optical blood flow device has the potential to empower EMS teams to make faster, more informed triage decisions in the field.

Openwater, an open-source medical technology company delivering portable, hospital-grade diagnostic and therapeutic devices.

SAN FRANCISCO, CA, UNITED STATES, May 8, 2025 /EINPresswire.com/ -- Openwater, an open-source medical technology company delivering portable, hospital-grade diagnostic and therapeutic devices, today announced a new paper published in the Journal of Stroke and Cerebrovascular Diseases called "Pre-hospital LVO detection: One size does not fit all." The paper is a continuation of a 2024 study published in the Journal of NeuroInterventional Surgery, which was conducted at two comprehensive stroke centers to evaluate the ability of Openwater's portable cerebral blood flow monitor to detect anterior circulation large vessel occlusion (LVO) in patients presenting with suspected stroke. In that study, the device correctly identified 79% of patients with LVO and correctly excluded 84% of those without LVO, outperforming prehospital stroke scales.

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>
> *Aaron Timm, CEO of Openwater*

The researchers' latest findings, published in the 2025 paper, evaluated Openwater's Open-Motion device performance across a range of sensitivity and specificity settings and found that when optimized for maximum sensitivity, it could successfully identify more patients in need of endovascular therapy (EVT), helping ensure timely, potentially life-saving intervention. At maximum specificity, it could effectively minimize false positives, supporting efficient resource use and the ability to reduce unnecessary hospital transfers. At this time, Open-Motion 3.0 has not been evaluated by the FDA

and is intended for research use only.

Each year, more than 75,000 people in the U.S. suffer from LVO stroke, a severe and urgent condition where every minute counts. The most effective treatment, EVT, must be administered within a narrow window - ideally within two hours, and generally no more than six. According to the AHA, of 1,941 stroke centers in the U.S., only 713 (37%) provide EVT therapy, making timely and accurate prehospital triage essential.

Current LVO detection tools rely on rigid thresholds that overlook key factors such as transport times, EMS resources, hospital capabilities, and patient eligibility. This approach often leads to high rates of false negatives, delaying critical care, or false positives, overwhelming comprehensive stroke centers with patients who don't require EVT.

"Ongoing research shows the potential for adaptable diagnostic tools to enable EMS teams to optimize stroke triage in the field, helping them make smarter, faster decisions," said Dr. Christopher Favilla, MD, Assistant Professor of Neurology at the Hospital of the University of Pennsylvania and lead researcher of the study. "New technology allows providers to adjust diagnostic settings, which can help ensure patients are routed quickly and appropriately based on factors like transport distance and hospital capabilities."

This ongoing research highlights the need for more adaptive, flexible diagnostic tools that allow EMS teams to effectively identify patient needs and support smarter routing decisions that reflect local geography and resource availability.

"The findings reinforce that our technology has the potential to provide early and accurate detection of LVO," said Aaron Timm, CEO of Openwater. "With adaptable, real-time, and portable tools like Open-Motion, we will be able to deliver faster, more precise diagnostics for medical conditions where every minute can make a significant difference in patient outcomes."

For more information about Open-Motion and Openwater's open-source technology, visit www.openwater.health.

About Openwater
Openwater is a medical technology company founded by Dr. Mary Lou Jepsen to make hospital-grade care universally accessible. Backed by notable supporters including Khosla Ventures, Plum Alley, BOLD Capital Partners, Vitalik Buterin, Esther Dyson, and Peter Gabriel, Openwater employs open-source development and consumer electronics manufacturing to lower the cost and speed the delivery of non-invasive medical devices. The company collaborates with leading institutions worldwide to research, validate, and distribute these technologies, aiming to reach patients across borders and income levels. For more information, visit www.openwater.health.

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