

**MINNETRONIX MEDICAL AWARDED NATIONAL INSTITUTES OF HEALTH GRANT FOR PROPRIETARY NEURAPHERESIS PRODUCT THAT REMOVES BLOOD FROM SPINAL FLUID**

***Fast Track Small Business Innovation Research Funding Accelerates  
Minnetronix's Platform Strategy to  
Bring Adaptable Technology and Market-Ready Products to Customers***

ST. PAUL, MN (October 20, 2020) – [Minnetronix Medical](#), which partners with companies throughout the world to design, develop and manufacture medical device technology, today announced that it has been awarded a National Institutes of Health (NIH) grant<sup>i</sup> for continued study of its proprietary [Neurapheresis™ Cerebrospinal Fluid Treatment Platform](#).<sup>ii</sup> Akin to hemodialysis, the [Neurapheresis platform](#) is designed to rapidly remove blood cells and their cytotoxic byproducts that are released into cerebrospinal fluid following an aneurysmal subarachnoid hemorrhage (SAH).

The presence of blood in the spinal fluid increases the risk of complications such as cerebral vasospasm, edema, hydrocephalus, or stroke. The Neurapheresis System enables expedited removal of blood and blood byproducts from the cerebrospinal fluid. This has been shown to shorten hospital stays, reduce use of hospital resources and improve outcomes for patients, thereby reducing the healthcare economic burden.<sup>1-3</sup>

The NIH-funded study will take place at the University of Florida Gainesville, M Health Fairview University of Minnesota Medical Center, The University of Texas Health Science Center at Houston, and New York's Mount Sinai Hospital. This is the second in a series of clinical studies of Neurapheresis, the first having yielded [positive results](#).

"Rapid removal of the toxins that are released into the cerebrospinal fluid when an aneurysm ruptures could be game changing and improve outcomes for patients who suffer a subarachnoid hemorrhage," said Christopher Kellner, MD, director of the Intracerebral Hemorrhage Program at Mount Sinai and site investigator of the clinical trial at Mount Sinai. "Winning support from the NIH is another important step to completing the research necessary to evaluate the impact of this treatment strategy."

"What fantastic validation from the medical community and the NIH that we are able to identify unmet needs and develop meaningful solutions," said Aaron McCabe, PhD, director of research and development at Minnetronix, who is leading the Neurapheresis project. "The Minnetronix team relied on 25 years of experience to develop the platform -- from concept to commercialization. Whole product solutions like this represent an expansion of our traditional offerings and create new ways for us to partner with our customers."

The grant is the second milestone Minnetronix has announced in a month. Recently, it received FDA clearance for the MindsEye™ Port, an expandable deep brain access system used in neurosurgical





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procedures, that represents the launch of the company's first technology platform. Neurapheresis is part of the company's second platform launch.

### **About Minnetronix Medical**

Since 1996, Minnetronix Medical has accelerated medical device breakthroughs as a design, development and manufacturing partner to leading device companies around the world. Today, through a commitment to life-cycle efficiency, opportunity realization, and increased utility, the organization is driving innovation in key technology segments, including RF/EM energy, fluid and gas management, optical systems, and stimulation and active wearables. From design to commercialization to whole product solutions, Minnetronix brings expansive industry insight and intentional technical acumen, delivering better medical devices to market, faster. Minnetronix Medical is based in St. Paul, Minn. More information can be found on the [Minnetronix website](#), by calling [651-917-4060](tel:651-917-4060) or emailing [info@minnetronixneuro.com](mailto:info@minnetronixneuro.com).

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<sup>1</sup> Panni P, Fugate JE, Rabinstein AA, Lanzino G. Lumbar drainage and delayed cerebral ischemia in aneurysmal subarachnoid hemorrhage: a systematic review. *J Neurosurg Sci.* 2017 Dec;61(6):665-672.

<sup>2</sup> Borkar SA, Singh M, Kale SS, et al. Spinal cerebrospinal fluid drainage for prevention of vasospasm in aneurysmal subarachnoid hemorrhage: a prospective, randomized controlled study. *Asian J Neurosurg.* 2018;13(2):238-246.

<sup>3</sup> Klimo P Jr, Kestle JR, MacDonald JD, Schmidt RH. Marked reduction of cerebral vasospasm with lumbar drainage of cerebrospinal fluid after subarachnoid hemorrhage. *J Neurosurg.* 2004 Feb;100(2):215-24.

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<sup>i</sup> Research is supported by the National Institute of Neurological Disorders and Stroke of the National Institutes of Health under Award Number R44NS110247.

<sup>ii</sup> CAUTION--Investigational device. Limited by Federal (or United States) law to investigational use.