Pushing the Boundaries of Neuroscience with GE HealthCare's SIGNA MAGNUS

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- *SIGNA MAGNUS[i] is a high-performance head-only MR scanner from GE HealthCare that could expand the field of neuroscience, which has been limited by the performance of conventional whole-body MR systems thus far.*
- *This system is designed to advance MR research in complex imaging procedures in neurology, oncology & psychiatry.*

CHICAGO--(BUSINESS WIRE)--May 5, 2024-- GE HealthCare (Nasdaq: GEHC) today unveiled SIGNA MAGNUS, an FDA 510(k) pending head-only magnetic resonance (MR) scanner designed to explore advancements in neuroscience, which have been restricted by the performance limitations of conventional whole-body MR systems. Neuroscience, particularly in the study of psychiatric diseases and neurological disorders such as Alzheimer's, has been constrained by technological and biological limitations, leaving many aspects of the brain structure and functionality largely unexplored.

Today, 43% of the world's population suffer from neurological disorders [ii], yet only a fraction can be diagnosed by MRI, making the need to expand the neurological clinical applications of MRI critical. SIGNA MAGNUS represents GE HealthCare's vision of our most advanced 3.0T MR imaging device, specifically designed for the highest standards of neurological and oncological research for head-only imaging. SIGNA MAGNUS stands at the pinnacle of MR excellence, designed to offer detail and clarity that allows for an in-depth exploration of brain microstructure, microvasculature, and function. Through SIGNA MAGNUS, GE HealthCare will help to empower neuroscientists, neurologists, neuroradiologists and oncologists to transcend barriers, with the goal of enhancing the diagnosis, understanding, and treatment of complex diseases.

"With SIGNA MAGNUS, we are not just exploring the possibility of providing the tool; we are setting new benchmarks in medical research and future clinical patient care," said Kelly Londy, CEO, MR GE HealthCare.

"This innovation underscores our commitment to R&D and our collaborations with academia, pushing the boundaries of what's possible in MR imaging. The potential impact of SIGNA MAGNUS on patient outcomes and our understanding of the human brain is profound."

This advanced system offers superior gradient performance with its HyperG gradient technology, featuring 300 mT/m and 750 T/m/s, enabling the detection of fine details that were previously unattainable. Researchers can fully utilize SIGNA MAGNUS capabilities to push the boundaries of advanced anatomical, diffusion and functional techniques, amplified by the latest deep-learning algorithms that GE HealthCare has to offer. SIGNA MAGNUS is designed to be a gateway to new research opportunities, helping to uncover new parameters and biomarkers with its vast potential. Its innovative asymmetric gradient design allows for remarkable diffusion performance, achieving extremely high B-value diffusion with short echo times (TEs), which further refines the understanding of neural architecture. Additionally, many GE HealthCare 3.0T systems are upgradable to SIGNA MAGNUS, which will help potential customers to save on capital costs.

In March 2024, the investigational MAGNUS system was successfully installed at Brigham and Women's Hospital, a leading research institution. The Brigham team will play a crucial collaborative role in performing research on high-performance neuro MR with GE HealthCare. "With this system, we will be able to measure things that weren't possible with conventional MRI," said Carl-Fredrik Westin, PhD, the project's principal investigator, who is also founding director of the Laboratory of Mathematics in Imaging and director of the Neuroimaging Analysis Center in the Department of Radiology. "We can ask questions we couldn't ask before."

By fostering a rich environment of innovation and collaboration, GE HealthCare continues to lead in transforming the landscape of medical research and healthcare delivery, with the aim of ensuring that every scientific advancement translates into meaningful health outcomes for patients worldwide.

Learn more about SIGNA MAGNUS at the International Society for Magnetic Resonance in Medicine (ISMRM) Annual Meeting, taking place from May 4-9, 2024, in Singapore, or online here: gehealthcare.com.

About GE HealthCare Technologies Inc.

GE HealthCare is a leading global medical technology, pharmaceutical diagnostics, and digital solutions innovator, dedicated to providing integrated solutions, services, and data analytics to make hospitals more efficient, clinicians more effective, therapies more precise, and patients healthier and happier. Serving patients and providers for more than 125 years, GE HealthCare is advancing personalized, connected, and compassionate care, while simplifying the patient's journey across the care pathway. Together our Imaging, Ultrasound, Patient Care Solutions, and Pharmaceutical Diagnostics businesses help improve patient care from diagnosis, to therapy, to monitoring. We are a $19.6 billion business with approximately 51,000 colleagues working to create a world where healthcare has no limits.

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[i] 510(k) Pending at FDA. Not Available for Sale in the United States. Not yet CE marked. Cannot be placed on the market or put into service until it has been made to comply with CE marking. Not cleared or approved by any global regulator for commercial availability.

[ii] Global, regional, and national burden of disorders affecting the nervous system, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. LancetNeurol2024; 23: 344–81
Huang Y, Li YA, Pan HY, Han LY. Global, regional, and national burden of neurological disorders in 204 countries and territories worldwide. J Glob Health 2023;13:04160.

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