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NEUROTECH INNOVATION ACHIEVES PATENT APPROVAL AND FEATURED COVER STORY IN PROMINENT INDUSTRY JOURNAL

-Prosthetic Cranial Implant Receives Patent, Elevates Neurosurgical Precision and Patient Outcomes-

(Baltimore, MD) - Longeviti Neuro Solutions, a neurotechnology company with a focus on innovative solutions for complex brain surgeries, proudly announces the issuance of a groundbreaking patent for its novel prosthetic translucent, cranial implant. The ClearFit® implant integrates brain-computer interface (BCI), brain mapping, and neurosonography (brain ultrasound). This product sets a new standard in neurosurgical procedures, marking the first time a single implant has been patented to cover three critical areas. ClearFit's patented technology was recently on the cover of *Science Translational Medicine* demonstrating promising research around this implant and neurosonography.*

Longeviti received patent issue notification from the United States Patent and Trademark Office (USPTO) for US Patent No. 12,004,954 B2 entitled "Method for performing single-stage cranioplasty reconstruction with a clear custom craniofacial implant." It was approved in June 2024.

"This technology and exclusive IP surrounding the ClearFit prosthetic implant family, represents a significant advancement in the field of neurosurgery. It allows Longeviti to openly collaborate with others in the field across the globe," said Jesse Christopher, CEO, Longeviti Neuro Solutions. "Together, Longeviti and its partners will advance neurosonography and neurosurgical patient care to significantly reduce the cost and time it takes to monitor brains anywhere in the world, real-time."

The implant's integration of BCI technology allows for direct communication between the brain and external devices, offering control and interaction for patients. Coupled with advanced brain mapping capabilities, the implant provides surgeons with real-time, detailed anatomical images, allowing for new real-time tools to enhance precision during surgical procedures. In addition, the incorporation of neurosonography within the cranial implant allows for continuous, non-invasive monitoring of brain activity and conditions, vastly improving postoperative care and monitoring.

"Longeviti not only enhances surgical accuracy but also significantly improves the overall quality of patient care. This specific cranial implant allocates unprecedented access into the brain allowing physicians to see into the brain real-time, reduce patient radiation exposure, allow point of access care so patients do not need to be transported or moved, and is reimbursable," said David Langer MD, Chief Medical Officer, Longeviti Neuro Solutions. "Our dedication to clinical excellence and improved patient outcomes underscores the company's commitment to innovation."

Clinical research has demonstrated the implant's effectiveness in improving surgical precision and patient recovery. Surgeons using the implant have reported enhanced accuracy in targeting brain regions, reduced surgical times, and better patient recovery outcomes.

Most recently, *Science Translational Medicine*, the leading weekly online journal publishing medical research, highlighted a study conducted by researchers from University of Southern California and Caltech with a cover story. The team implanted Longeviti's patented ClearFit prosthetic translucent implant in a human patient's skull to capture high-resolution brain imaging using non-invasive functional ultrasound imaging (fUSI). They successfully recorded and decoded brain activity in an adult who suffered a traumatic brain injury, suggesting applications in brain-computer interface (BCI) and clinical monitoring.

"In our recent study, we were able to measure functional brain signals transcranially from an awake, behaving, adult human using fUSI for the first time," shared Dr. Charles Liu, Professor of Clinical Neurological Surgery and Neurology, Keck Medicine of USC and Director, USC Neurorestoration Center.** "This was made possible through the transparent and sonolucent implant with a specially designed acoustic 'window to the brain.' Importantly, this first-in-human demonstration was achieved using a commercially available implant."

The release of ICD-10-PCS procedural codes by the Center for Medicare and Medicaid Services (CMS) makes the cost of Longeviti's ClearFit® implants fully reimbursable for hospitals in 48 states. The ICD-10-PCS code XNR80D9, which stands for "Replacement of Skull with Ultrasound Penetrable Synthetic Substitute, Open Approach, New Technology Group 9," is exclusively named and is only associated with the Longeviti ClearFit® device. This device allows for ultrasound penetration and is used in cranioplasty procedures to replace part of the skull with a synthetic substitute. The specific coding for this procedure reflects the incorporation of this new technology in surgical practices.

"This new ICD-10 PCS code allows hospital systems and patients to benefit from bringing imaging to the bedside, rather than bringing beds to imaging, without absorbing new technology expenses. Immediate, real-time bedside imaging could save valuable time and significant costs if/when used where appropriate," said Aimee C. DeGaetano, PhD (ABD) MPH RD, Eastern Virginia Medical School, Department of Health Science and Medicine.

For more information on the novel prosthetic cranial implant and to access detailed clinical study results including *Science Translational Medicine*, *Neurosurgery*, and *Science Direct*, visit <https://longeviti.com>.

"We're pleased to see the success of portfolio companies like Longeviti," said Troy LeMaile-Stovall, TEDCO CEO. "Over the years, they've seen significant growth through many of our funds and programs, and they're a great example of the types of companies we look for to help strengthen Maryland's economy."

About Longeviti Neuro Solutions (<https://longeviti.com>)

Longeviti Neuro Solutions is a leading innovator in functional neurotechnology, dedicated to developing advanced solutions that improve the lives of patients with neurological conditions during and after surgery, returning them to anatomical normalcy. The Baltimore-based company has full manufacturing, packaging, designing, and sterilizing capabilities in-house with multiple FDA clearances, successful FDA audits, and ISO 13485 Certifications. Longeviti has 17 patents to date.

Longeviti's mission is to develop innovative solutions for complex brain surgery. Its products are currently approved for use in over 100 hospitals across the globe. To date Longeviti neurosurgical implants have helped over 4,000 patients.

In July 2024, Longeviti announced a 10,000 square foot Class A office lease at Rye Street Market within the Baltimore Peninsula.

**Neurosonography - an exploding field of neuroscience utilizing ultrasound and its dynamic functional capabilities, also which historically could not penetrate the skull.*

***Dr. Liu does not have any conflicts of interest disclosed. He does not receive compensation for any of the work related to Longeviti and its implants.*