

Aware's Ear-EEG Innovation: A Breakthrough in Non-Invasive Brain Monitoring & Seizure Detection

Published in the Journal of Neural Engineering 'A Personalized Earbud for Non-invasive, Long-term EEG Monitoring'



ATLANTA, GEORGIA, UNITED STATES,
March 26, 2024 /EINPresswire.com/ --

Aware Custom Biometric Wearables

announces the publication in the [Journal of Neural Engineering](#) of an independent study validating its groundbreaking Ear-EEG, a non-invasive in-ear solution for long-term electroencephalogram (EEG) brain monitoring. The Aware Hearable, enabled by Aware's patented 3D ear scanner, offers a custom-fit earbud designed for the ambulatory recording of

“

Aware captures an unprecedented amount of brain data, delivering personalized, AI-driven health and human performance insights into the body and brain in a device you wear in your daily life.”

*Sam Kellett Jr., Chief Executive
Officer of Aware*

brain activities with unprecedented precision. Through a collaborative research study with Takeda Pharmaceuticals and Emory Brain Health Center at Emory University Hospital, Aware successfully demonstrated the capture of medical-grade in-ear EEG data from epilepsy patients combined with machine learning validation of seizure detection. The study confirms the Aware Hearable's accuracy, performance, and comfort, marking a pivotal advancement in longitudinal, ambulatory brain monitoring technology.

"Our development efforts have transcended the barriers between engineering and healthcare, leading to a scalable, fully custom-fit technology that marks a significant shift in

medical-grade data collection," said Jon Jowers, co-author and President of R&D. "By placing custom-shaped dry electrode sensors at the second bend of the ear canal's conductive skin, we are opening new avenues for real-time brain data. Our approach, built on manufacturing techniques adapted from the hearing aid industry such as Aware's 3D ear scanner, CAD modeling, and 3D printing, proves that mass customization is truly possible and sets a new benchmark for daily-use health devices."

Fitting comfortably deep in the ear canal at the second bend, the Aware Hearable places custom-shaped dry electrodes and other sensors near the brain, the auricular branch of the vagus nerve, and major blood vessels. With a design that leverages the anatomical features of the ear, the Aware Hearable locks into place reducing motion artifacts and achieving consistent sensor placement every time, ensuring accurate, stable, and high signal-to-noise recordings. The precision custom design is enabled by Aware's 3D ear scanner which is unmatched in its comprehensive capture of the ear's anatomical features including the second bend of the ear canal, enabling a perfect custom fit including sensors precisely tailored to each ear's unique contours.

"The brain is the new frontier in health and human performance, and Aware is leading the way," stated Sam Kellett Jr., CEO of Aware. "Aware's platform captures an unprecedented amount of data, delivering personalized, AI-driven health and human performance insights into the body and brain in a device you wear in your daily life. We can now actually achieve precision therapeutics for drug titration and deliver both pharmacological companion diagnostics and non-pharmacological therapies within a headphone or hearing protection."

Aware is transforming the ear into a platform for health and human performance by incorporating advancements in biomedical informatics, health-focused artificial intelligence, and digital signal processing. High-quality ambulatory EEG from the Aware Hearable introduces the potential for longitudinal and real-time brain data analysis as well as vagus nerve stimulation, opening new frontiers in personalized medicine and health. Allowing for continuous, everyday monitoring without specialized equipment or hospital stays, this technology promises to democratize access to crucial health data and revolutionize the approach to healthcare.

"Integrating AI with our custom-fit Ear-EEG tech solution, we are seamlessly connecting advanced health monitoring to daily life," stated Dr. Rob Matthews, CTO at Aware. "Harnessing the ear's unique capabilities, our platform expands the potential for health and performance improvements through non-invasive, continuous biometric monitoring which enables higher-order insights derived from AI-driven analytics. Aware's method unlocks potential across a wide range of medical applications, enhancing our understanding of neurological health and refining disease management strategies."

By harnessing the power of the ear as a vital platform, Aware is paving the way for a wide array of applications designed to meet extensive health and performance requirements across healthcare, military, and industrial sectors. This innovation of technology, healthcare, and design engineering is driving a shift towards ambulatory monitoring and precision therapeutic delivery, cementing Aware's position at the forefront of health technology innovation.

###

About Aware Custom Biometric Wearables

Aware Custom Biometric Wearables is headquartered in Atlanta, GA with the Aware Hearable lab in San Diego, CA. As a leading innovator in custom in-ear technology, Aware specializes in hearing protection, enhanced hearing, continuous biometric monitoring, and precision therapeutics. Leveraging the capabilities of its patented 3D ear scanner, Aware's in-ear devices boast a perfect custom-fit that is uniquely comfortable and optimizes the performance of each device. Groundbreaking in-ear solutions include the Aware Hearable for continuous biometric monitoring with electroencephalogram (EEG), photoplethysmogram (PPG), heart rate (EKG/ECG), core temperature, and bioimpedance. Proudly U.S.-based, Aware serves a diverse range of sectors within healthcare, military, and industrial. [AwareCBW.com](https://www.AwareCBW.com).

Ashley Russ

Aware Custom Biometric Wearables

+1 678-231-6525

[email us here](#)

Visit us on social media:

[Twitter](#)

[LinkedIn](#)

[Instagram](#)

This press release can be viewed online at: <https://www.einpresswire.com/article/698478670>

EIN Presswire's priority is source transparency. We do not allow opaque clients, and our editors try to be careful about weeding out false and misleading content. As a user, if you see something we have missed, please do bring it to our attention. Your help is welcome. EIN Presswire, Everyone's Internet News Presswire™, tries to define some of the boundaries that are reasonable in today's world. Please see our Editorial Guidelines for more information.

© 1995-2024 Newsmatics Inc. All Right Reserved.