Novel Auditory Diagnostic

Published date: March 14, 2017

Technology description

Speech is perhaps the most important stimulus that humans encounter in their daily lives. Unfortunately, certain populations have difficulty understanding speech, particularly in noisy conditions, including children with language-based learning problems and cochlear-implant/hearing aid users. Even in the hearing impaired, much of this difficulty stems not from problems in the ear itself, but from how each individual’ s brain processes the speech sounds. Considering its importance, audiology clinics have few resources to study or diagnose this vast individual variability in real world listening ability. Currently there is no way to rapidly and reliably assess the integrated functioning of the auditory system from brainstem to cortex. For this profound, global health problem, no clinical assessment tool exists.

Researchers at the University of California, Davis have developed a novel method to assess the neural processing of auditory signals by creating experimental speech stimuli that can be used with both traditional and advanced techniques to analyze electrical brain activity. This new method provides a rapid, synoptic view into the functional health of the early auditory system, including how speech is processed at different levels and how these levels interact. Further, this technology will provide clinicians a quantum leap in diagnostic power, enabling them to provide customized and valuable treatments for patients.

Researchers at the University of California, Davis, have developed a novel diagnostic for the auditory system.

Additional Information

Application area

Diagnostic for auditory system

Advantages

Easy implementation in the clinic

Ability to analyze relations among different levels in processing

Uses actual speech / complex sounds, which assess real world listening ability

Institution

University of California, Davis

Inventors

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