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From the Labs to the Clinics

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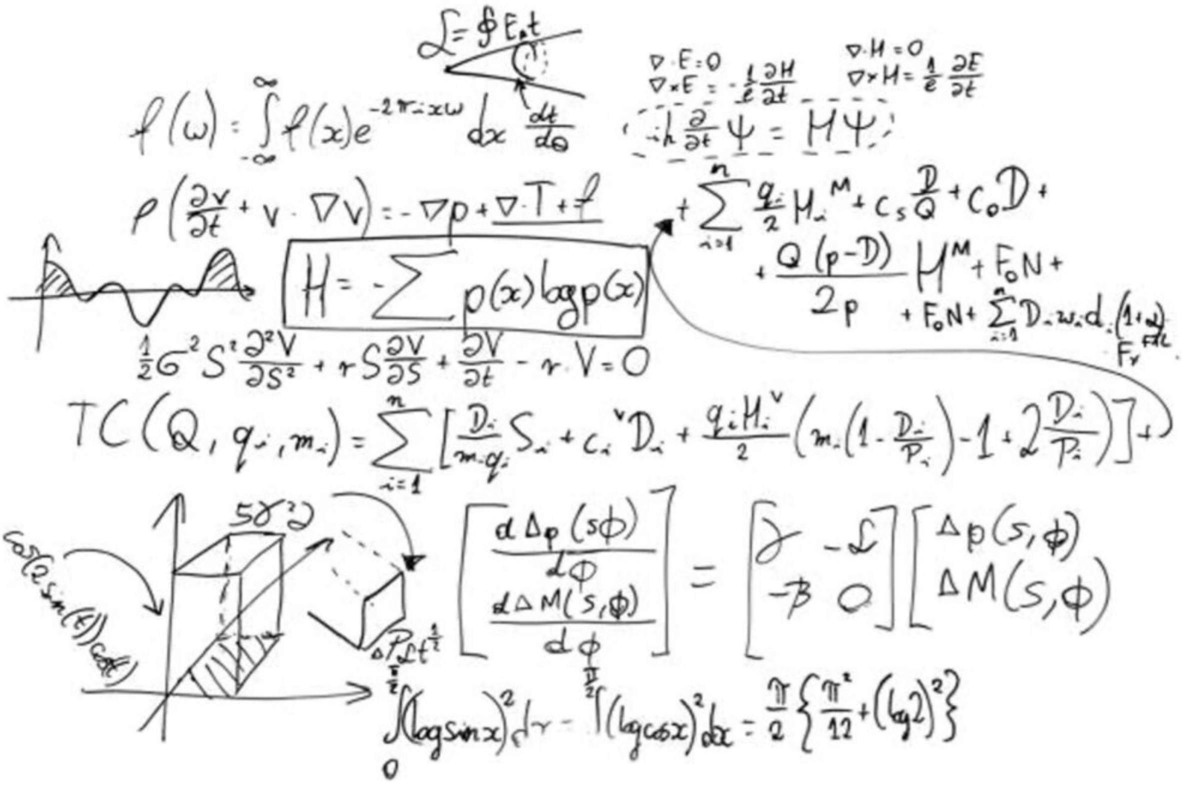
Psychometric Characteristics and Feasibility of Microinteraction-Based Ecological Momentary Assessment in Audiology Research

If you have no clue about what this title means, then you are not alone. Eager to find the latest research in the field of audiology and to elucidate its practical importance in audiology (that being my mandate for Canadian Audiologist), I searched for a very recent scientific publication. This paper from January (2025) in Frontiers in Audiology and Otology immediately sparked my curiosity, not least because from the title, I had absolutely no idea what it was about. If you read this column with its title the same as the paper, I suspect you have the same feeling.



As an aside, here is an important observation. Many keen audiologists will Google for published papers to find articles of interest. Usually, the paper's title will be listed, but if this title came up it would likely be ignored because it is incomprehensible to the uninitiated. I myself almost passed over it, but curiosity prevailed. I decided that this mystery must be unravelled for the sake of my column readers.

A glance at the abstract soon shed some light. *"Microinteraction-based Ecological Momentary Assessment (micro-EMA) is a smartwatch-based tool that delivers single-question surveys, enabling respondents to quickly report their real-time experiences."*

This was an ah-ha moment, but I immediately wondered how a smartwatch can help in audiology assessment. Jumping to the conclusion section, I read that the study supported the feasibility of using smartwatch technology to evaluate hearing performance in adults with hearing loss. So now I am very interested in what this research shows, not least because it should interest clinical audiologists.

Basically, the authors assert correctly that hearing loss is a significant public health challenge with psychosocial and financial consequences. Secondly, they suggest that it is important to be able to monitor communication performance in real-world settings, i.e., immediately and on the spot. This is "***Ecological Momentary Assessment"*** (EMA) and it can be achieved using smartphone technology by sending single-question surveys about hearing ability that are swiftly answered "with a glance and tap on the watch screen." To use EMA in speech understanding tests, participants were presented with sentences in noise and responded to the smartphone prompt as quickly as possible by repeating as many sentences as possible. The testing is based on the well-established Hearing in Noise test (HINT).

If you are interested in discovering more about this remote testing of hearing in the field, the paper has useful discussion. I am personally not convinced that this real-world hearing testing is the way to go. In fact, I regard it as a gimmick, particularly as the testing lacks the controlled acoustic environment important for accurate hearing assessment. To be cynical, for many decades psychoacoustic studies have been performed in rigorously controlled acoustic environments for fear of contaminating results with extraneous signals. Now (Just to be different?) why don't we ignore all that caution and do the tests remotely, wherever and whenever we want? Just because we can?

Reference

Wu Yu-Hsiang , Stangl Elizabeth , Smith Samuel , Oleson Jacob , Miller Christi , Chipara Octav (2025). **Psychometric characteristics and feasibility of microinteraction-based Ecological Momentary Assessment in audiology research.** *Frontiers in Audiology and Otology*. https://www.frontiersin.org/journals/audiology-and otology/articles/10.3389/fauot.2024.1506306. DOI=10.3389/fauot.2024.1506306