Smartphone automated audiogram image recognition found to have low accuracy

January 9 2023, by Lori Solomon

The automated audiogram image recognition feature in the iPhone has

low accuracy, according to a research letter published online Jan. 5 in *JAMA Otolaryngology-Head & Neck Surgery*.

Janet S. Choi, M.D., from the University of Minnesota in Minneapolis, and colleagues assessed the accuracy of the automated audiogram image recognition in the iPhone using 500 randomly selected audiogram reports from a health system clinical hearing database representing various degrees of hearing loss.

The researchers found that the accuracy of the automated audiogram image recognition was 7.0 and 11.8 percent for right and left ears, respectively. For more than 80 percent of ears, the feature was unable to detect adequate thresholds to calculate pure-tone average, prompting the user to manually enter the audiogram data. When hearing was asymmetric, accuracy was significantly higher (odds ratios, 2.26 and 2.27 for the right ear and left ear, respectively). Accuracy was not associated with type, degree of hearing loss, or number of missing thresholds.

"Future efforts will be needed to improve the accuracy of automated audiogram image recognition if this approach is used for the customization of future over-the-counter hearing aids," the authors write.

One author disclosed financial ties to Apple and the regenerative medicine industry.

More information: Janet S. Choi et al, Performance of Smartphone Automated Audiogram Image Recognition for Personalized Sound Amplification, *JAMA Otolaryngology–Head & Neck Surgery* (2023). DOI: 10.1001/jamaoto.2022.4383

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