

# Jacoti to Present Award-Winning Hearing Technologies at HLAA/IFOH '16 and Simons Foundation

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The NHS and AHS Conferences (termed HEAL Conferences, since 2012) have become the place where a broad community investigating all components of hearing care across the lifespan can work together to merge contemporary research findings with cutting-edge clinical practice.

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## **Abstract: DuoTone® validated as a pure tone audiometry procedure for mobile electronic platforms**

Standard pure tone audiometry (PTA) requires an audiologist to control the stimuli and the responses. DuoTone® is a new method for conducting pure tone audiometry and is based on an automated adaptive procedure that enables self-testing by a layperson, without the assistance of an audiologist. The subject being tested has to decide what sound was presented: one long-low tone, three short-high tones or nothing (silence). Two adaptive procedures - one for the lower and one for the higher frequency - control the stimulus intensity and finally result in two-tone thresholds at the end. Jacoti Hearing Center (JHC) has implemented DuoTone® for mobile consumer electronic devices, specifically for the iPhones and iPods, and is calibrated for the Apple Earpods.

This paper presents the results of calibration tests and a clinical validation study comparing DuoTone® with standard PTA in clinical test situations. In this clinical validation study, the DuoTone® thresholds obtained in a group of persons (average age 59.2, range 31-86 y) having various degrees of hearing loss (range 0 to 80 dB HL) at 4 test frequencies (500, 1k, 2k and 4k) were compared with classical pure tone audiometry thresholds.

In the clinical validation study the average difference between standard PTA and DuoTone® thresholds, across all test frequencies and all subjects, was 1.9 dB with a standard deviation of 7.4 dB.

Conclusions: JHC implementation of DuoTone® in consumer electronic devices, such as mobile phones, has proven to be a clinically valid medical device without statistically significant precision differences with standard audiometers. DuoTone® has proven to be a valid procedure to measure pure-tone hearing thresholds that can replace standard PTA in clinical test situations and DuoTone® can be used as a self-testing or self-screening tool running on mobile consumer electronic platforms.

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## About Jacoti

Jacoti BV | Hearing Technologies is a science-based company that develops hearing enhancement solutions embeddable in consumer devices. Its flagship product, Jacoti Inside, optimizes audio to each individual hearing requirement from consumer technologies to fully-fledged medical devices. For more information visit [www.jacoti.com](http://www.jacoti.com)

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