

Letters to the Editor

Real-Ear Sound Pressure Level

To the Editor:

We would like to take this opportunity to respond to some comments made in an article recently published in *JAAA* by Valente et al (1994). The following response is not a direct comment on the study presented but on a portion of the literature review, which does not correctly represent the goals and implications of our work.

Valente et al (1994) referenced Zelisko et al (1992) as one of "several studies [that] have suggested that the real-ear SPL near the eardrum can be predicted from audiometric thresholds measured in hearing level (dB HL) using either conventional or insert earphones...by applying a set of average transformation values" (p. 390). The purpose of the work cited in the article by Zelisko et al (1992a) was to describe our development of a system for obtaining in situ measures of hearing using a probe tube microphone system in order to provide a more accurate comparison with measures of in situ hearing aid performance. Results from Zelisko et al (1992) indicated that there was less across-session variability associated with the direct in situ measurements of ear canal SPL than the reported accuracy of approaches where ear canal SPL was predicted from audiometric data collected with conventional supra-aural earphones (p. 462). Further, the findings of Zelisko et al (1992) were "generally consistent with the findings of previous investigations [e.g., Feigin et al, 1989; Hawkins et al, 1990] and illustrate the degree of variation in RECD values that can be observed in a sample of school-age hearing-impaired subjects. Furthermore, the findings lend support to the position that whenever possible, this relevant acoustic variable should be measured...." It was not the intention of Zelisko et al (1992) to support the use of average transformations for predicting real-ear SPLs, but to recommend direct measures of ear canal SPLs whenever possible.

Furthermore, when citing articles that supported the use of average transformations, Valente et al (1994) also cited Gagné et al (1991a, b). These two studies applied a stimulus delivery/real-ear measurement system to measure

thresholds and LDLs using a probe tube microphone system. Average transformations, or how they should be used, are not addressed in these references.

Finally, Valente et al (1994) cited Seewald et al (1991) as suggesting that average transformations can be used to predict ear canal SPL thresholds. Seewald et al (1991) noted that "the following rank order reflects the compatibility of each with the DSL method; 1. insert earphone/probe-tube microphone (dB SPL in situ), 2. 3-A insert earphones (dB HL), 3. sound field loudspeaker (dB HL/SPL), and 4. supra-aural earphone (TDH 49/50 [dB HL])" (p. 37). While it is true that the Desired Sensation Level (1991) software system will use average transformations to predict real-ear SPLs, the authors do place an emphasis on obtaining direct in situ measures of ear canal SPL whenever possible.

We hope that this response helps to clarify the positions of the above referenced.

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R. Seewald
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