REM440

Tests

The following text is based on Pumford, J. & Sinclair, S. (2001) Real-Ear Measurement: Basic Terminology and Procedures.

REUR/REUG

REUR (**R**eal-**E**ar **U**naided **R**esponse):
Short description: The REUR accounts for the SPL across frequencies measured in the open/unaided ear canal for a given input signal at specific measurement point.

REUG (**R**eal-**E**ar **U**naided **G**ain)
Short description: The REUG accounts for the gain in the unaided ear canal provided by the auricle and ear canal. This is obtained by subtracting the input level from the REUR.

REUR – input = REUG

Purpose: The REUR/REUG is often used in the calculation of REIG (Real-Ear Insertion Gain) and customizes coupler gain on basis of the REIG target. REUR/REUG also enables the clinician to convert the audiogram from dB HL to dB SPL. This is particularly helpful when working with a fitting prescription such as DSL m[i/o] which uses an SPL-O-GRAM as a substitute for the audiogram.
The REUR/REUG may also help revealing irregularities in the ear canal.
Work area: Hearing instrument verification

REAR/REAG

REAR (**R**eal-**E**ar **A**ided **R**esponse)
Short description: The REAR accounts for the SPL across frequencies for a given signal measured in the ear canal with the hearing aid in place turned on.

REAG (**R**eal-**E**ar **A**ided **G**ain)
Short description: The REAG accounts for the gain across frequencies for a given input signal measured in the ear canal. This is obtained by subtracting the input level from the REAR.

REAR – input = REAG

Purpose: The REAR/REAG is often used in the calculation of REIG (Real-Ear Insertion Gain). Furthermore some fitting prescriptions (such as DSL) prescribe REAR/REAG targets for some input levels. If the audiogram has been converted from dB HL to dB SPL and use a SPL-O-GRAM it can quickly be determined whether an input is audible.
Work area: Hearing instrument verification

REIG

REIG (**R**eal-**E**ar **I**nsertion **G**ain)
Short description: The REIG accounts for the gain across frequencies provided by the hearing instrument alone. This is obtained by subtracting the REUR from the REAR or the REUG from the REAG.

REAG – REUG = REIG

Purpose: The REIG is most often used to verify if a given hearing aid setting is providing an acceptable level of gain compared to the prescribed REIG target.
Work area: Hearing instrument verification

RECD

RECD (**R**eal-**E**ar to **C**oupler **D**ifference)
Short description: The RECD accounts for the difference in decibels (dB) across frequencies, between the SPL measured in the real-ear and in a 2cc coupler, produced by a transducer generating the same signal.

Real-Ear SPL – Coupler SPL = RECD
Purpose: The RECD is often used when fitting children. It ensures that information about the child's occluded ear canal characteristics is obtained and enables the clinician to convert this information from dB HL to dB SPL. This is particularly helpful when working with a fitting prescription such as DSL which uses an SPL-O-GRAM as a substitute for the audiogram. The RECD may also be utilized in the estimation of 2cc coupler targets which are not only useful in the verification process but also when selecting a suitable hearing instrument by means of the manufacturer's data sheets.
Work area: Hearing instrument verification

REOR/REOG

REOR (**R**eal-**E**ar **O**ccluded **R**esponse)
Short description: The REOR accounts for the SPL across frequencies measured in the ear canal with the hearing aid in place turned off.

REOG (**R**eal-**E**ar **O**ccluded **G**ain)
Short description: The REOG accounts for the gain across frequencies measured in the ear canal with the hearing aid in place turned off. This is obtained by subtracting the input signal from the REOR.

REOR – input = REOG

Purpose: The REOR/REOG is often used to assess en venting of a hearing instrument and whether it is functioning as expected. It may also help in revealing if vent is introducing unwanted acoustic effects.
Work area: Hearing instrument verification

Input/Output

Short description: The Input/Output curve displays the output of the hearing instrument as a function of the input for one frequency (or broadband signal).
Purpose: The Input/Output function provides information about the compression characteristics of the hearing instrument such as for example expansion, knee-point, and compression limiting.
Work area: Hearing instrument verification (Dillon 2001)