

BIAP Recommendation 06/11 Annex 2: RECD measurement and the SPL-O-Gram

General foreword

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Recommendation

When fitting a child with a hearing aid, optimum precision is required in controlling the adjustment parameters (amplification level, frequency band...) and in checking the thresholds achieved with the hearing aid. The procedure should verify that the desired objectives have been achieved and define the limits of this fitting process.

The correct interpretation should make it possible to link the acoustic characteristics of hearing aid devices and the child's individual audiometric threshold. If the latter is difficult to elicit subjectively in very young children, then auditory evoked potentials at specific frequencies have to be used.

For a direct comparison of the results obtained in audiometric tests and the acoustic measurements of hearing aid devices, all values must be clearly displayed on the same diagram. This resource is available with an SPL-O-Gram; the liminal threshold is converted to SPL.

It is important to ensure that the prosthetic assessment takes the following factors into account:

- The individual RECD curve, or as a minimum, the mean value for age (available at intervals of one month for babies)
- The CDD, but only if a TDH39 headset has been used
- Individual discomfort threshold values, or as a minimum, the supraliminal threshold mean values (according to PASCOE-WERTE)

Based on the RECD or the REDD, the SPL-O-Gram will propose final values for the gains obtained at various input levels, thanks to prescriptive fitting methods and the maximum output level.

Ideally, the ISTS speech signal should be used for digital prosthetic hearing devices. This makes it possible to define the dynamic field of transferred speech by showing the percentile given by the prosthetic hearing device in relation to the child's residual dynamic field. In this

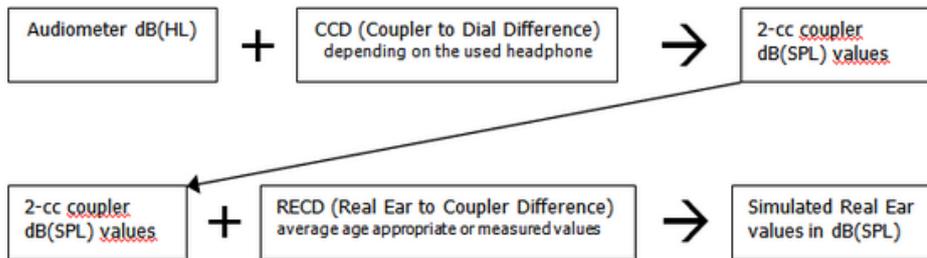
way, it is easy to establish whether the results of the prescriptive methods have been achieved.

For the hearing instrument specialist, for all the other specialists involved in the fitting process, and for the child or his/her parents, it will be easy to view perceptible conversational frequencies by adjusting the prosthetic device. They will also find out what remains imperceptible despite optimal adjustment.

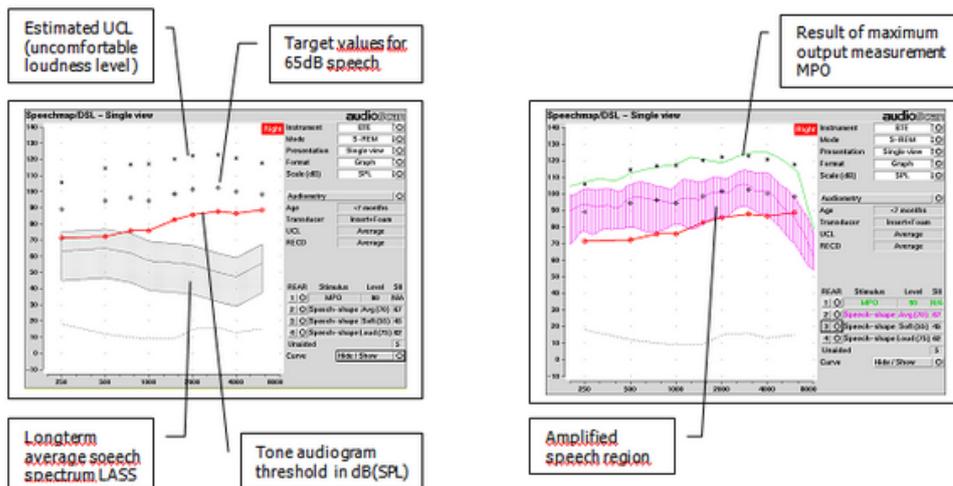
Based on the premise that audiometric tests are reliable, the effectiveness of fitting can be checked without the child's direct participation.

Despite all this, the effectiveness of the fitting process requires final validation by means of subjective tests (hearing aid gain, voice tests, questionnaires...).

From "audiometer dB (HL) threshold values" to "simulated real ear values in dB (SPL)" :



SPL-O-Gram :



This recommendation was created and approved in a multidisciplinary cooperation between professionals of all audiophonologic disciplines, which are medicine, pedagogy, speech therapy, psychology and hearing instrument audiology.

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