

BIAP Recommendation 06/11 Annex 1:

Insert earphones

General foreword

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Recommendation

Insert earphones in audiometry

These are not widely used in Europe, where headsets are the norm in audiometry. Audiometry with insert earphones coupled with ear-moulds customised to the child's measurements should be recommended.

Numerous methodologies for calculating gain are in fact simplified when this technique is used, which takes into account the anatomical data of the auditory canal and the residual cavity.

It should be noted that certain manufacturers are now offering audiometric measurements taken directly from their hearing aids. This option is not identical to the audiometric inserts technique.

Advantages:

1. Technique suitable for all dimensions of the cranial perimeter
2. Takes the anatomical form of the external auditory canal directly into account
3. Highly effective in very young children as regards reactions, orientation and investigation, due to the lightness of the device
4. Direct attenuation of background noise
5. Low level of transcranial transfer, which reduces the need for contralateral masking, an advantage in the context of audiometry in young children.
6. Simplified hygiene procedure
7. The usual methods of packaging for children can be used

8. If the calibration is carried out using dB-SPL, the values measured can be included without correction in techniques for calculating the gain using the SPL-O-gram
9. Procedure allowing separate audiometric testing on each ear

Restrictions:

1. Requires specific calibration. Calibration should be set according to ANSI standard S3.6-1996, using a 2 cc coupler
2. Reduced dynamics (limited to 100 to 110 dB HL) compared to TDH39 external headphones

Insertion after ear examination:

The use of a made-to-measure ear-mould is recommended.

The length of the tube, from the adaptor exit to the ear-mould exit, should be 20 mm.

If a deformable foam ear-mould is used, for reliable and repeated measurements it should normally be positioned with the outer surface of the foam ear-mould 2 to 3 mm from the inside of the external auditory canal.

Measuring protocol:

The measuring protocol is carried out under the same conditions as headset audiometry. The audiometric charts used depend on whether the calibration is SPL or HL.

References

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J. Acoust. Soc. Am. 83 (2), February 1988

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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President of the commission 6: Thierry RENGLET (Belgium)

Members of the commission 6: Ajuarez SANCHEZ (Spain), B. AZEMA (France), Eric BIZAGUET (France), Andrea BOHNERT (Germany), Herbert BONSEL (Germany), Christine DAGAIN (France), Y. DEJEAN (France), J. DEHAUSSY (France), Monique DELAROCHE (France), Laurent DEMANEZ (Belgium), Manfred DRACH (Germany), Ahsen ENDERLE-AMMOUR (Germany), F. FAGNOUL (Belgium), A. KORZON (Poland), Heidrun KRAUSE (Germany), Frank KUPHAL (Germany), Gaby LUX-WELLENHOF (Germany), Gaston MADEIRA (Belgium), R. MELO (Portugal), Christian RENARD (France), Claire van der HEYDEN (Belgium), Patrick VERHEYDEN (Belgium), Thomas WIESNER (Germany)

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