

## **Abstract EFAS/DGA 2007**

### **Loudness scaling**

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The assessment of loudness functions using the method of categorical loudness scaling provides the audiologist with additional information about the patient's hearing performance that is not present in the pure tone audiogram. For example, the shape of the loudness function at intermediate loudness can hardly be estimated from the pure tone audiogram. This additional information can be used for clinical diagnostics as well as for hearing instrument fitting.

Unfortunately, the existing procedures for categorical loudness scaling do not generate comparable results. Furthermore, some procedures appear not optimal with respect to accuracy and reproducibility. Such shortcomings led to fundamental criticism about categorical loudness procedures as such (e.g. Elberling, 1999). However, many of the arguments against categorical loudness scaling are due to problems of the applied procedures and could be solved using an adequate stimulus placement, appropriate model loudness function and a sufficient number of loudness categories and stimuli. An example of such a procedure is described in the reference procedure ACALOS (Adaptive CAtegorical LOudness Scaling, Brand and Hohmann, 2002) of the relatively new ISO 16832 standard. However, the validity of the method is still limited by the complex psychological factors of loudness judgments and statistical constraints. If this is kept in mind by the audiologist, over-interpretations of the results of categorical loudness scaling can be avoided.

#### Literatur:

Brand T, Hohmann V (2002) An adaptive procedure for categorical loudness scaling. J Acoust Soc Am, 112, p 1597-1604.

Elberling C (1999) Loudness scaling revisited. J Am Acad Audiol, 10, p 248-260.

ISO 16832 (2006) "Acoustics – Loudness scaling by means of categories"

