

## **Abstract EFAS/DGA 2007**

### **Speech audiometry**

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The Bell Laboratories in USA were pioneers in their work to develop speech audiometric methods in the 1920-ies. However, the aim at that time was to test communication links rather than testing hearing impairment. In audiology there are two main purposes of speech audiometry. One is topic diagnosis, i.e. to answer the question "Where is the damage located?" and the other is functional diagnosis, e.g. to answer the questions "Which ear is best?" or "How does the patient manage to recognise speech with and without hearing aids (or cochlear implants)?" Speech audiometry is not very well suited to be used for topic diagnosis. Its validity in this respect is thus rather poor. Also the reliability of speech audiometry is poor. To get a statistical significant difference between two speech recognition scores, each obtained with 50-word list, a difference of 10 to 20 percentage units is needed. The greatest difference is needed for scores between 30 and 70%. Since the reliability is related to the number of items scored, it is very time consuming to measure whole speech recognition curves with reliable results. Simulations of the variability of such measurements will be shown. Another drawback with speech audiometry is that it is usually performed under conditions that the patient will never meet in everyday situations, neither without nor with hearing aid. For example, the maximum speech recognition uses to be measured at a higher than normal level but still not with a frequency response similar to a hearing aid. It is important to develop speech audiometric methods that are clearly designed for their specific purposes. Since speech recognition is the most important task for our hearing organ speech audiometry is still needed at the hearing clinics despite the drawbacks mentioned.

