

Abstract EFAS/DGA 2007

A comparison and real life evaluation of different data logging systems

Tiefenau, A., Fröhlich, M.

Siemens Audiological Engineering Group, Erlangen

Today, advanced hearing instruments provide lots of information about the individual usage of the hearing instrument to the dispenser. This supplies the audiologist with objective information not easily available from the user. However, in case of substantial differences between the technical (i.e. logged) data and the subjective (i.e. hearing aid user) response, it is up to the audiologist to decide which data to use. Thus, the two most important issues in validation of the various data logging systems are the reliability of the logged data and the correspondence of the logged data with the individual subjective impression.

Two studies were conducted to assess the effectiveness of different data logging systems. In the first study, 14 hearing instruments with 7 different data logging systems were simultaneously exposed to a controlled sequence of stimuli reflecting distinct acoustic conditions. More than 90 hours of continuous stimulus presentation of the data were read out and analyzed. In the second study we compared how accurately the logged data match respective subjective ratings in diaries. Both the data logging recordings and the diary entries were collected from the users during a test period of one week.

Our results point towards a number of differences between the accuracy of data acquired from the different data logging systems. The correspondence between the logged data and the data recorded in the journals will also be discussed.

Capturing the real world conditions with accuracy is essential for the validity of the data logging system if the acousticians are to trust and use the data supplied by the hearing aid. In this sense, the cross comparison of the different data logging systems provides an additional benefit for the acoustician in case of systematic deviations between the recorded data and the perceptual correlates.

