Comparing state of the art speech intelligibility diagnostics

*Melanie A. Zokoll*¹,², Anna Warzybok²,³, Kirsten C. Wagener¹,²

¹Hörzentrum Oldenburg GmbH, Oldenburg, Deutschland
²Cluster of Excellence „Hearing4all“, Oldenburg, Deutschland
³Abteilung Medizinische Physik, Carl von Ossietzky Universität Oldenburg, Oldenburg, Deutschland

Whether using monosyllabic word or sentence tests to test speech intelligibility (in noise) remains a topic of debate in the German audiology community. In order to compare accuracy, efficiency, and reliability of the different speech intelligibility tests in hearing aid benefit evaluation, unaided and aided (participant's own hearing aid) speech intelligibility measurements in free field were conducted. The measurement procedure was oriented on the German auxiliary equipment directive ("Hilfsmittelrichtlinie"). Speech and noise (if applied) was always presented from the front. Speech intelligibility tests investigated were the Göttingen sentence test (GÖSA), the Oldenburg sentence test (OLSA), and the Freiburg monosyllabic word test (FB). For OLSA and GÖSA, speech reception thresholds (SRTs) were obtained using the standard adaptive procedure converging to 50% speech intelligibility implemented in the Oldenburg Measurement Applications (HörTech gGmbH). For the FB, speech intelligibility performance (in %) was obtained. Participants were hearing aid (HA) users selected on the basis of their audiograms, which was in correspondence to Bisgaard-profiles N2-N5, S2, and S3, respectively (Bisgaard et al., 2010).

Preliminary results suggest that when measuring speech intelligibility in noise, test-retest reliability of GÖSA and OLSA is superior to FB. Despite giving the results as ratio, accuracy is also higher for the sentence tests as for the FB. For testing speech intelligibility in noise, a sentence test should be used instead of the FB as a consequence.