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Measuring the perception of soft sounds in tinnitus patients with hyperacusis using the Oldenburg loudness scaling

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Background: Even though audiological research progresses constantly, knowledge about loudness perception disorders is still limited. Until now there is neither consensus on the terminology describing hyperacusis, i.e. unusual tolerance to ordinary sounds, nor exists an internationally reliable instrument for measuring the impact of the pathology. The aim of the present study was to analyze whether the Oldenburg loudness scaling can be used to measure hyperacusis in a more precise way.

Hypotheses: Patients suffering from hyperacusis are supposed to judge sounds on a verbal scale other than normal hearing persons even for soft sounds.

Subjects and Methods: Of all patients of the tinnitus clinic of Bordeaux complaining about hyperacusis 8 persons have been recruited to take part in the study. The control group comprised 8 normal hearing persons. Additionally to the Oldenburg Loudness Scaling all persons have been assessed using tonal audiometry, the Multiple Activity Scale for Hyperacusis (MASH), measurement of uncomfortable level and a French version of the Geräuschüberempfindlichkeitsfragebogen (GÜF).

Statistical Methodes: The data have been analyzed comparing the mean values of the thresholds for all levels.

Results: In almost each test situation, the mean thresholds for soft sounds of the hyperacusis group are lower than the thresholds of the control group. This corroborates the hypothesis disposed.

Keywords: loudness perception disorder, hyperacusis, psychoacoustic measurement, Oldenburg loudness scaling

