

S18-7

## **Music therapy as specific and complementary training in the early rehabilitation of adult CI users**

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Since January 2014, an integrated outpatient rehabilitation program for adult CI users has been established at the ENT- clinic of the university hospital Heidelberg in cooperation with the German Centre of Music Therapy Research (DZM) e.V. In addition to medical and technical care, speech therapy and psychological support at the ENT- clinic, music therapy offered by the DZM is an integral part of the program. Music therapy was developed for postlingually deafened CI users in early rehabilitation after CI-surgery and initial activation of the CI speech processor. The rationale of the standardized music therapeutic approach is based on the analogy of linguistic features and musical components such as pitch, rhythm and timbre. As the features of speech and music are processed in overlapping neuronal networks, the training of musical dimensions can facilitate speech processing and understanding. After initial activation of the speech processor, CI users have to learn to decode the unfamiliar perceptions transmitted via the CI. Specific musical interventions are therefore aimed at simulating the gradual acquisition of language in infants, from the early prelingual dialogue with their parents to accomplished verbal communication. Music therapy offered in the context of the rehabilitation program consists of seven individual 50-minutes-sessions. The musical interventions are composed of five modules incorporating a variety of exercises. The exercises can be selected and adjusted individually to meet the varying needs and differing hearing abilities of the CI users. The first part of the training aims at improving speech comprehension and production, focusing especially on emotional speech prosody. The second part of the training addresses music perception itself in order to gain satisfaction from music perception via the CI. Specific diagnostic tools consisting of psychological and musical tests have been developed in order to evaluate the effectiveness of the music therapeutic approach. Preliminary results indicate that CI users may benefit from the training with regard to hearing performance of both musical and linguistic dimensions as well as in situations of daily life.