

VOICE DISORDERS IN CASE OF HEARING LOSS

Katrin Neumann¹, Dirk Mürbe², Jan Wouters³,

¹Dept. of Phoniatics and Pediatric Audiology, Clinic of Otorhinolaryngology, Head and Neck Surgery, St. Elisabeth-Hospital, Ruhr-University of Bochum, ²Division of Phoniatics and Audiology, Department of Otorhinolaryngology, University Hospital Carl Gustav Carus, Technische Universität Dresden, Dresden, Germany, ³Division of Experimental Otorhinolaryngology, Katholieke Universiteit Leuven, Leuven, Belgium

Hearing loss, in particular severe and profound hearing loss, is frequently associated with voice abnormalities or disorders, especially if not or insufficiently treated or treated late in life. But also if appropriately and timely treated, hearing loss may be paralleled by subtle abnormalities of voice control and intonation that may establish a problem in communication for the affected persons. With increasing aging of the European population, voice disorders due to aging (presbyphonia) increasingly co-occur with ageing-related hearing loss of elderly people. Also indirect effects appear such as voice disorders in partners of persons with presbycusis who deny the use of hearing devices.

Voice disorders in case of hearing loss are based on a distorted feedback control of one's own voice and may be characterized by a reduced control of voice pitch with too high or instable fundamental frequency, a wobbling, sometimes pressed or creaky voice sound, rhinophonia aperta or a dysprosodic voice. These voicing difficulties may be combined with phonetic-phonological difficulties such as blurred speech, reductions of consonant clusters, omission of sounds, mixing-up similar sounds, substitutions of sounds, in particular for sound pairs with only small contrasts, e.g. /t; d/, /k; g/, /p; b/, /s; z, ʃ/, and /m; n; l/, addental forms of articulation /s; z, ʃ/ indicating a hearing loss of high frequencies.

Treatment focuses on optimal fitting and improved technology of hearing aids or implants (Loucks et al. 2000) and on voice therapy that works on improving self-perception and sensitivity for one's own voice and, stabilizing voice pitch, increasing voice resonance and reducing creaky passages as well as open nasality.

This panel highlights voice disorders and problems that may be associated with a hearing loss. It reviews the current literature on voice disorders in case of a severe hearing loss and typical spectral patterns and demonstrates examples of such voice disorders, for example of a disturbed voice mutation and voice problems of cochlear implant and hearing aid wearers. Panelists will discuss with the audience appropriate treatment options.

References:

Loucks TM, Suneel D, Aronoff JM. Audio-vocal responses elicited in adult cochlear implant users. *J Acoust Soc Am.* 2015 Oct; 138(4): EL393–EL398.

Thiel M. *Logopädie bei kindlichen Hörstörungen.* [Logopedics for children with hearing loss]. 2000, Berlin: Springer.