Abstract EFAS/DGA 2007

Pilot Study of Remote Measurement and Fitting of Cochlear Implant Recipients

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The open fitting of hearing aids is still one of the highest demands of hearing impaired patients. Using modern and high sophisticated feedback management systems this has recently become available for a wide range of hearing losses. However, there is still some kind of acoustical and/or physical occlusion by the long silicon tube with a perforated earplug or external speaker to transmit the amplified sound into the ear canal.
The semi-implantable air conduction hearing aid system RetroX has shown to overcome this problem while using an implanted titanium tube for sound delivery. The very positive aspect of a high wearing comfort by the true open ear fitting on the one hand side leads to a limited amplification of low-frequency sound on the other side. To remain the effectiveness of the RetroX device also for those patients with a progressive or sudden hearing loss in the low-frequency range new concepts for the expansion of the fitting range will be shown and discussed. Measurements have been performed in-situ and on an artificial head with specific ear molds to allow higher low-frequency gain, with different speakers having an extended high-frequency characteristics and with a new two-loudspeaker concept.