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Audiological Comparison of BTE Fitting Options

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Background

A growing challenge for hearing care professionals is the increasing number of choices and decisions to face when determining how to address the amplification portion of auditory rehabilitation. In particular, for open canal behind-the-ear (BTE) fittings, there are many new choices available. This presentation will focus primarily on choices involving BTE hearing instruments, with a special emphasis on open canal fittings. We will review many of the rationales for using BTEs and further examine the different technologies and fitting options.

Methods

Regarding open canal fittings, many options and differences exist with earhooks, tubing and means of coupling the instrument to the ear canal. The major aspects with these options are understanding maximum insertion gain, occlusion effects and maximum stable gain. To investigate these aspects, real ear insertion gain (REIG), real ear occluded gain (REOG), open loop gain (OLG) and the occlusion effect were measured with human subjects.

Results

The measured differences between these open canal options show that there are clear differences in terms of occlusion, insertion gain and feedback stability. However, as interindividual differences are very large, it is important to understand how these factors interrelate in obtaining the optimum fitting for an individual patient. Prepared with this information, one can incorporate a structured approach to the open canal BTE selection.

Conclusions

Attending to the individual needs of the hearing instrument wearer is a priority in any hearing instrument fitting. Factors such as the occlusion effect and maximum stable gain, which are very individual to the patient, need to be addressed with little compromise. Open fit BTEs, with their variety of technology and coupling options, enable audiologists to fulfill individual needs. The optimum selection of the best fitting option is a valuable tool in maximizing benefit and achieving patient satisfaction.

