Personal*Logic* meets clients needs

Summary
Perseo Personal*Logic* was evaluated in adults with moderate-severe hearing losses. Individual differences in listening needs were reflected by the preferred Personal*Logic* settings after the trial. While some subjects favored the Comfort mode, others chose the Audibility mode. Using the Listening Situation Manager further increased the preference of the respective mode. On average, the maximum extra amount that the subjects would be willing to pay for the automatic program selection feature was 440 USD.

Introduction

Hearing needs and preferences can be very individual, with marked differences from one person to the next in the same hearing situation. So, in addition to compensating for measured hearing loss, an advanced hearing system also must cater to specific personal requirements, and be customizable simply and effectively to individual client needs. The Perseo hearing system with its Personal*Logic* automatic function can be "tailored" to the client's needs as part of the fitting process. In Perseo, the default base-program is optimized for speech understanding in quiet environments. A second base-program with different frequency response settings and optional adaptive directional microphones provides additional support in noisy situations. The acoustic environment is continuously monitored and the appropriate base-program is automatically selected. The automatic

performance can be personalized easily to meet the individual needs and preferences of the hearing impaired.

A clinical trial was conducted to assess how the listening needs vary between subjects, and whether these variations are reflected in preferred individual Personal*Logic* settings.

The subjects and their listening needs

Twenty adult subjects (mean age: 52 years) with moderate-severe hearing loss participated in the study. Prior to the trial, the subjects were asked to classify their preferred "amplification style" in different situations. One category was listening comfort (for those who find the audibility of the background rather irritating and prefer to tune it out for greater comfort). The second category was audibility (for those who prefer maximum audibility, in order to take in as much as possible of the environment). In non-speech situations, the individual preferences were more or less balanced, as shown in the figure below. About half of the subjects favored listening comfort or audibility, respectively. In situations with speech in background noise, however, most subjects preferred audibility. These findings confirm the rationale of Perseo Personal*Logic*, namely that
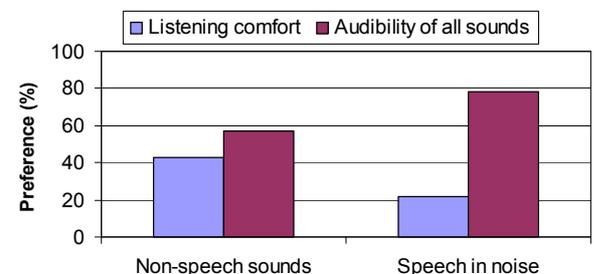
selecting the "Comfort" or "Audibility" mode, affects the respective automatic program selection in non-speech environments.

Fitting protocol

All subjects were fitted bilaterally with Perseo BTE hearing instruments. The automatic program selection was activated and all subjects were fit in both "Comfort" and "Audibility" mode, following a crossover design. Initially, each mode was used with default settings for the Sensitivity and the Contrast fitting parameter in the Listening Situation Manager (LSM). After using each mode for one week, fine tuning of both parameters was done, if necessary. These fine tuned settings were tested for another week. In each trial period, the subjects kept a diary where they judged hearing aid performance in various situations. In total, more than 750 individual situations were described. In addition, questionnaires were used to assess the performance of the automatic program selection. At the end of the trial, the subjects had to judge whether they prefer the "Comfort" or the "Audibility" mode.

General preference

Two basic groups can be identified when looking at the general preference ("Comfort" or "Audibility" mode) at the end of the trial. The figure below illustrates that each mode is favored by about half of the subjects. This reflects the findings on the self-reported preferred amplification style in non-speech environments, where about half of the subjects wanted listening comfort or audibility, respectively.
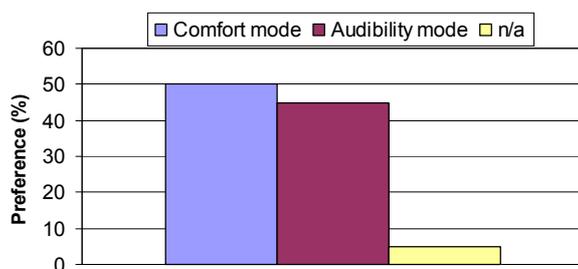
Fine tuning of Sensitivity and Contrast

The effect of fine tuning these parameters according to the client's individual needs is shown below. After gathering experience in daily life, most subjects indeed preferred the fine tuned settings over the default values.
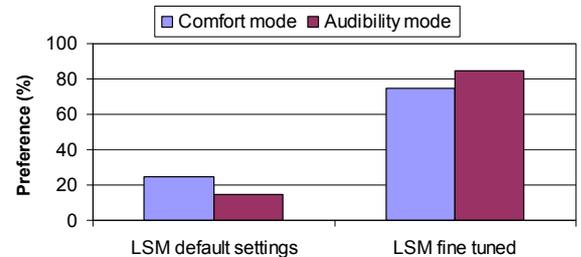
Analysis of the fine tuning shows that the modified settings are centered on the default values, i.e., there is no bias, and the default settings represent a good compromise. While the Sensitivity settings were almost equally distributed between "low", medium", and "high", most Contrast settings remained in the medium position, which is the default setting.

How much is it worth?

At the end of the trial, the subjects were asked how much extra money they would be willing to pay for automatic program selection, assuming that the hearing instruments would cost 2.000 USD in total. Eighty percent of all subjects would be willing to pay extra money for automatic program selection. On average, the maximum extra amount they would be willing to pay was 440 USD.

Conclusion

Hearing needs and preferences were shown to be very individual. So, in addition to compensating for hearing loss, an advanced hearing system also must account for individual needs. Perseo with Personal*Logic* meets these requirements and allows for efficient and successful adjustment to the client's needs.

* The study was conducted by Birgitta Gabriel, PhD, Hörzentrum Oldenburg, Germany

For further information, please contact info@phonak.ch

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hearing systems