eXtra™
DataLogging inside

eXtra impressive from day one

Phonak is committed to the highest standard in hearing healthcare and, therefore, validation trials are an integral part of each product launch. Beginning in July 2005, comprehensive eXtra fittings were conducted to evaluate the performance of eXtra under real-life conditions prior to the launch. The validation trials were carried out in four countries – Switzerland, New Zealand, Austria and the USA, with a total of 130 hearing instruments fitted. An extraction from the overall results are reported here, representing a total of 34 clients from Switzerland and Austria. The trial included an initial appointment and 1-2 follow up visits. Questionnaires were used to collect systematic feedback on initial impression of sound quality and speech intelligibility. All available eXtra models were used. Twenty-five percent of the instruments fit were custom products. The age range of the subjects was from 20-95 years (Average: 66 years). Twenty-seven percent of subjects were first time users.

Results

Sound quality impression and speech intelligibility were rated very positively by the subjects. Seventy percent of clients rated the initial sound quality of eXtra as pleasant or very pleasant. Over eighty-eight percent responded that they could understand "most" or "everything" while wearing eXtra.

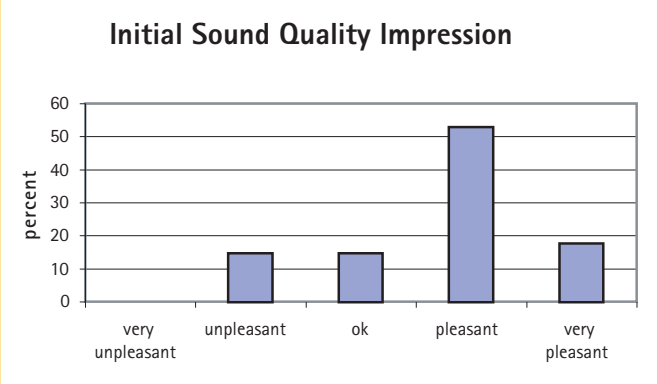

Figure 1
Initial sound quality was rated positively by over eighty-five percent of clients.

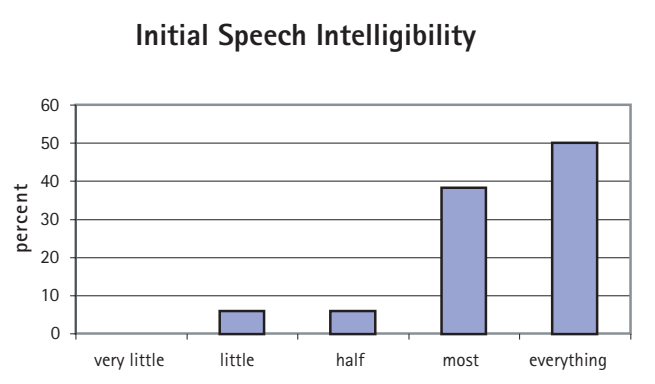

Figure 2
Over eighty-eight percent of clients reported that they could understand most or everything when wearing eXtra instruments.

PHONAK
hearing systems

Results from Speech in Noise Testing

During the validation studies conducted in Staefa, ten subjects also participated in a comparison of eXtra and a competitive product from the value segment. Specifically, the effects of noise management on the signal-to-noise ratio (SNR) in diffuse cafeteria noise were examined. For eXtra, the noise management approach utilizes the proven AudioZoom technology as well as the six channel digital Noise Canceler, both of which span the entire frequency range. This approach was compared to a competitive product that uses a different noise management philosophy.

To simulate a diffuse sound field, the subject was seated in the center with the signal presented at 0° azimuth and the noise presented from the loudspeakers at 60°, 120°, 180°, 240° and 300° azimuth during a sentence-in-noise test (Oldenburger Satztest). Uncorrelated noise was presented at a constant level of 65 dBA and the level of the speech signal was varied until 50% correct was achieved. The subjects had moderate to severe, sloping hearing loss, and the instruments were manually set to the noise program.

In this simulated cafeteria situation, significant benefit was achieved with the eXtra noise management approach over the unaided condition. In addition, eXtra showed a significantly greater SNR improvement than the competitive instrument. The average SNR for fifty percent correct was -5.2 dB with eXtra compared to -2.7 dB for the competitive instrument.

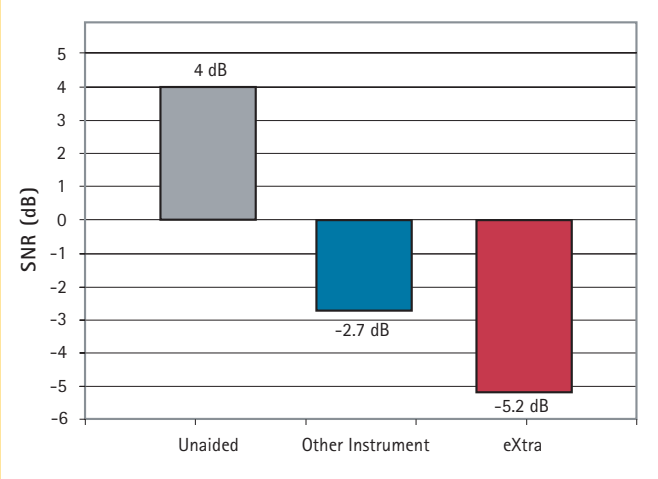

Figure 3
The average SNR for fifty percent correct was -5.2 dB for eXtra compared to -2.7 dB for the competitive instrument.

Summary

eXtra validation studies have shown positive initial acceptance. Furthermore, excellent performance on a speech-in-noise test in a diffuse sound field was documented, supporting the noise management approach of eXtra.