

WIDEX ALLURE™

COMPARING WIDEX ALLURE WITH FOUR DNN-BASED HEARING AIDS ON SPEECH IN NOISE PERFORMANCE

A key design objective of the sound philosophy that underlies the Widex Allure platform is maintaining the naturalness of sounds to align with the brain's natural expectations. Preserving the naturalness of sounds supports an exceptional hearing aid experience including speech-in-noise comprehension. This paper summarizes the outcomes of a study comparing speech-in-noise performance with Widex Allure RIC against four competitors' premium devices that use deep neural networks (DNNs) as their noise management strategy. Widex Allure's natural processing approach matched or exceeded the performance of all four leading competitors, delivering up to 14% and 26% higher word recognition, for mild-to-moderate and for moderate-to-severe hearing losses, respectively.

Key findings

The natural processing philosophy implemented in Widex Allure RIC delivers:

- Up to 26% better speech-in-noise performance than three leading DNN-based hearing aids.
- Comparable speech-in-noise performance with the best performing DNN-based hearing aid.
- Speech-in-noise improvement in listening conditions that are realistic and meaningful for everyday communication.

Study methods

- Speech-in-noise performance was measured with Widex Allure RIC R D compared to four market leading premium hearing aids with a DNN-based noise management strategy.
- Participants were categorized into two groups based on degree of hearing loss (HL): mild-to-moderate (average right and left ear PTA \leq 40 dB HL) and moderate-to-severe (average right and left ear PTA $>$ 40 dB HL).
- Speech-in-noise performance evaluated in a laboratory setup simulating a conversation in conditions representing realistic and meaningful communication.

Study results

- Widex Allure's natural processing approach outperformed three DNN-based hearing aids (HAs #3, #4, #5), delivering between 10 and 14% better word recognition for mild-to-moderate hearing losses and between 18 and 26% better word recognition for moderate-to-severe hearing losses (Figure 1).
- Widex Allure and HA#2 did not differ significantly from one another in either HL group (Figure 1), suggesting that both would be equally and highly effective in everyday communication.
- Word recognition scores for Allure and HA #2 were around 80% in either HL group, while poorer performance was obtained for the moderate than for the mild HL group for HA#3, HA#4, and HA#5. This suggests that Allure and HA#2 likely offer more benefit to those with a moderate loss than the other devices.

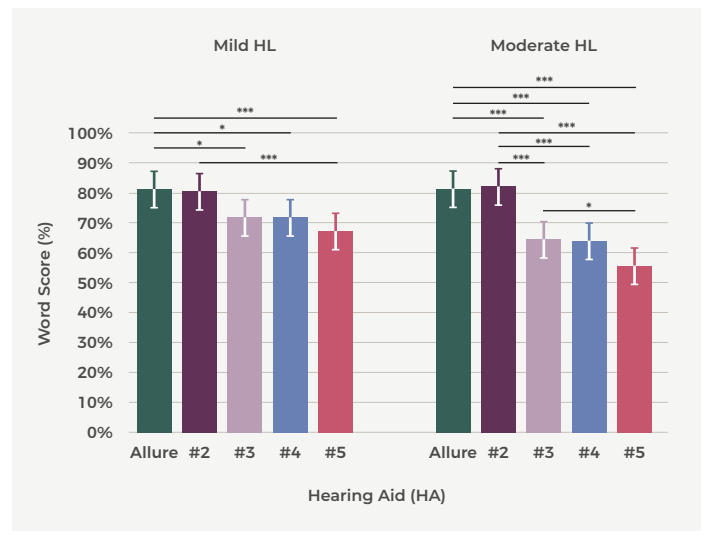


Figure 1: Word recognition scores for listeners with mild-to-moderate (left) and moderate-to-severe (right) hearing losses for Allure and four market leading premium hearing aids with DNNs as their noise management strategy.

Clinical implications

Widex Allure provides wearers with better speech-in-noise performance than three DNN-based hearing aids.