StereoZoom™ in Naída:
Better memory recall and less memory effort in noise[1,2]

Background: A recent study[3,4] looking at participants with mild-moderate hearing loss indicated a decrease in subjective memory effort with StereoZoom compared to Real Ear Sound.

Objective

To investigate whether StereoZoom in Naída increases memory capacity in speech in noise compared to Real Ear Sound via:

- Subjective ratings
- Objective EEG measurement

EEG recording:

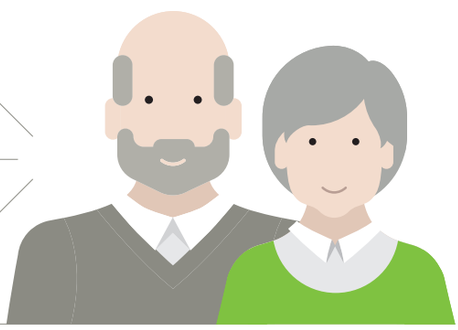
- Measuring listening and memory effort on neural level
- Lower alpha band activity = lower listening effort[3,4]

Methodology

20 experienced hearing aid users

Severe hearing loss

ø **65.8** years



Comparison of memory effort:

Phonak StereoZoom: Wirelessly connected binaural, directional microphone technology to improve speech intelligibility in loud background noise

vs

Real Ear Sound: Monaural omnidirectional microphone setting which simulates the natural directionality of the pinna

67 dB SPL
diffuse cafeteria noise

Task:

- Listen to sentences at individual SRT_{50} + 10 dB (mix of high and low predictability of last word)
- Repeat sentence and remember last word of previous 4 sentences

Measures:

- Recording of brain activity with EEG
- Subjective rating of memory effort

effortless — extremely effortful

1 — 13

Results

EEG measurement shows...

Less alpha band activity (less memory effort) for StereoZoom in sentences with low predictability

Subjective memory effort...

Significantly lower ($p < .01$) for

StereoZoom **8.2**

Real Ear sound **9.35**

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[1] Winneke, A., et al. (2020). Better memory recall and less memory effort in noise with StereoZoom in Naída. Phonak Field Study News, retrieved from https://www.phonakpro.com/com/en/resources/information-forms/evidence.html, accessed on July 29, 2020.

[2] Winneke, A., et al. (2020). The effect of directional microphone technology in hearing aids on neural correlates of listening and memory effort: an EEG study. Trends in Hearing. DOI 10.1177/2331216520948410

[3] Winneke, A., Latzel, M., & Appleton-Huber, J. (2018). Less listening – and memory effort in noisy situations with StereoZoom. Phonak Field Study News, retrieved from www.phonakpro.com/evidence, accessed October 31st, 2019.

[4] Winneke, A., Schulte, M., Vormann, M., & Latzel, M. (2018). Spatial noise processing in hearing aids modulates neural markers linked to listening effort: an EEG study. Audiology Online, 1-27.

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