To investigate listening and memory effort with StereoZoom via:
- Objective EEG measurement &
- Subjective ratings

Changes in the alpha frequency band (8–12 Hz) reflect changes in listening effort.

20 experienced hearing aid users
Mild to moderate hearing loss
\( \bar{\text{70.9}} \) years

Comparison of listening effort of:

\[
\text{Phonak SPILN} \quad \text{vs} \quad \text{Competitor SPILN}
\]

Task:
- Word Recall: 2 sentences consecutively - percentage of correctly recalled sentence parts

Measures:
- Recording of brain activity with EEG
- Subjective rating of effort

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

Speech signal easier to understand
Less cafeteria noise to be suppressed by brain
Lower brain activity = lower listening effort

Subjective and EEG measuring show less effort with StereoZoom

Subjective listening and memory effort ratings correlates with objective EEG findings

1. Objective EEG measurement
   - Lower alpha spectral density in noise with:
     - Phonak SPILN < Competitor SPILN

2. Subjective effort ratings
   - Phonak SPILN < Competitor SPILN

Speech signal easier to understand
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Lower brain activity = lower listening effort

\(^\text{2} \) Winneke et al., 2016a, 2016b


Winneke, Oh Ver, Wagner, Latzel, Derleth, Appell, Wallhoff (2016b). Reduction of listening effort with binaural algorithms in hearing aids: an EEG Study. 43rd Annual Scientific and Technology Meeting of the American Auditory Society, March 3 – 5, Scottsdale, AZ.