Motion Sensor Hearing:
Better speech understanding and overall listening experience*

When hearing aids do not amplify sounds outside the listener's visual field, conversations while walking side-by-side may be a challenge.

New

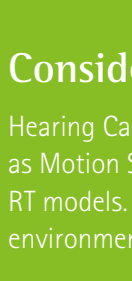
Motion Sensor Hearing changes the beamformer setting to Real Ear Sound and deactivates Dynamic Noise Cancellation when having a conversation while walking in a noisy environment.

ⓘ **Real Ear Sound =** microphone pattern that combines the advantage of surround sound pickup while reducing front/back confusions common with omnidirectional microphones.

Objective

Study at Hearing Excellence Clinics in Burlington and Oakville (Ontario, Canada)

Investigate whether the new Motion Sensor Hearing algorithm provides superior speech understanding and environmental awareness when walking



Prototype Phonak Audéo Paradise rechargeable hearing aids

- 22 participants
- Average age: 79
- Moderate to severe hearing loss
- Experienced hearing aid users

Methodology

Fitting in clinic 1

2 different manual Speech-in-noise programs:

- Speech-in-noise program without Motion Sensor Hearing
- Speech-in-noise program with Motion Sensor Hearing: steers to **Real Ear Sound** and deactivates Dynamic Noise Cancellation when walking

Two short walks along predefined track 2

- beside a busy street – average noise level: 68 dBA
- together with research assistant
- randomized and blinded order of Speech-in-noise programs

Tasks during walks 3

1. Assessment of speech understanding:
Storytelling + 2 questions

Subjective rating:

very easy — very difficult

1 — 5

2. Assessment of environmental awareness:
3x per walk – 3 different sounds

- Did you hear the sound?
- Where was it located?
- How easy was it to hear?

After each walk 4

Subjective rating of ...

1. Overall listening experience

very easy — very difficult

1 — 5

2. Preferred program for

- speech understanding
- environmental awareness
- overall listening

Results

Results showed significant improvement in

- subjective ease of speech understanding
- speech understanding performance
- subjective overall listening experience

with Motion Sensor Hearing

Motion Sensor Hearing preferred for

- 73% Speech understanding
- 78% Environmental awareness
- 71% Overall listening experience

Considerations for practice

Hearing Care Professionals will benefit from reduced fine tuning effort as Motion Sensor Hearing is set on default in all Audéo Paradise R and RT models. Clients will benefit from higher rated speech intelligibility, environmental awareness and overall listening experience.

*Appleton-Huber, J. (2020). Motion-based beamformer steering leads to better speech understanding and overall listening experience. *Phonak Field Study* News retrieved from www.phonakpro.com/evidence accessed September 20th 2020.