

Evidence Behind Infinio Ultra

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PHONAK
life is on

Evidence behind Infinio Ultra●

Building confidence in patient
real-world benefit

Financial disclosure: Speaker is employed by Phonak US

Non-financial discloser: None

Risks/Benefits

- The applicability and accuracy of the course content may vary by the clinical, geographical, and cultural context; you should evaluate the course accordingly.
- As healthcare is rapidly evolving, new findings may change the validity of the information presented in this course. Providers should always consult the latest research and guidelines from professional associations.
- The interventions discussed in this course may be limited in generalizability, requiring practitioners to consider specific individual and population factors.
- The course may not cover all possible risk factors, diagnostic methods, or treatment options, and complex cases may require additional considerations.
- Healthcare providers should apply cultural competence and sensitivity to ensure effective and respectful care based on their patients' diverse needs.
- Providers should always evaluate the limitations of diagnostic and screening tools, considering their potential for false results as well as any ethical implications.
- It is the responsibility of course participants to critically evaluate the evidence from multiple sources to guide professional practice.

Learning Objectives

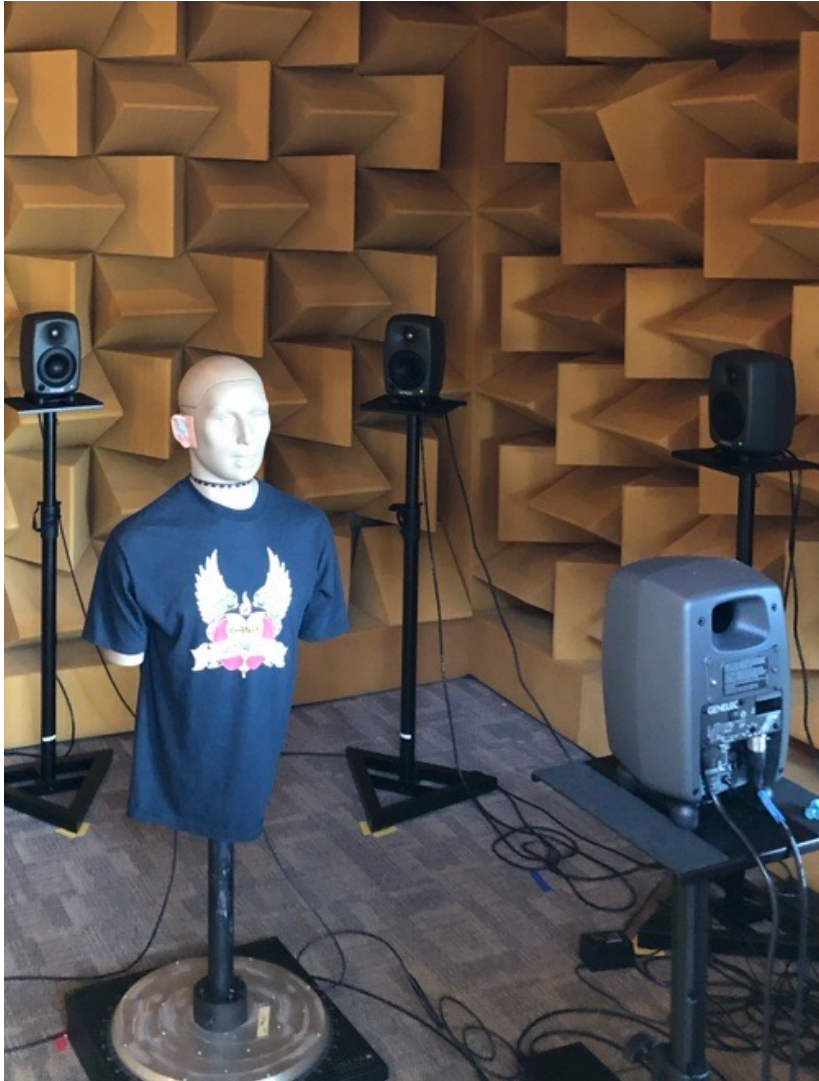
After this course, participants will be able to

- Describe advancements in AI-powered features
- Describe the importance of realistic test setup
- Explain how Spheric Speech Clarity benefits daily life

Agenda

- Integrity of research design
- Improvements with AutoSense OS 7.0
- AutoSense in action
- Going next level with Spheric Speech Clarity 2.0
- Moving beyond device performance
 - Listening effort & fatigue
 - Cognitive well-being
 - Quality of Life
- Wrap-up





Integrity in
research design

Measurement setup

Fig. 1
Phonak setup

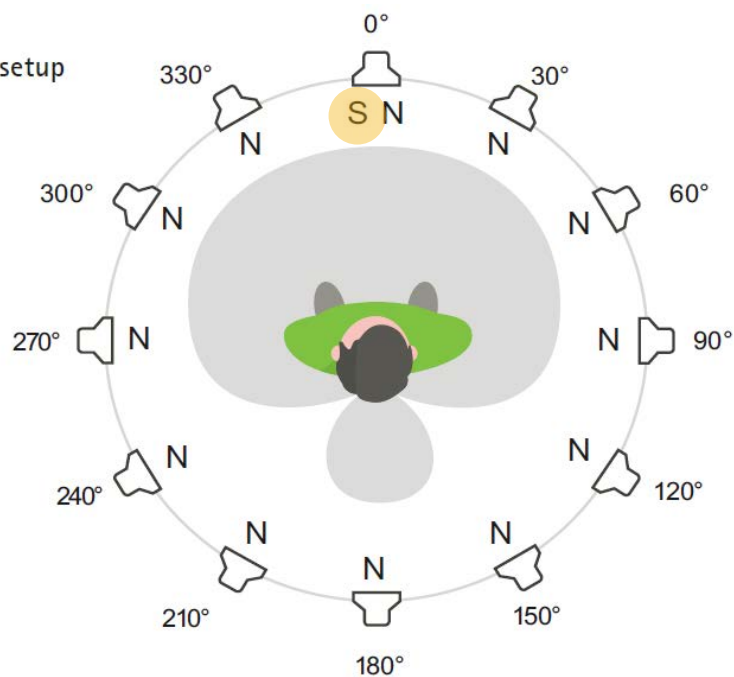
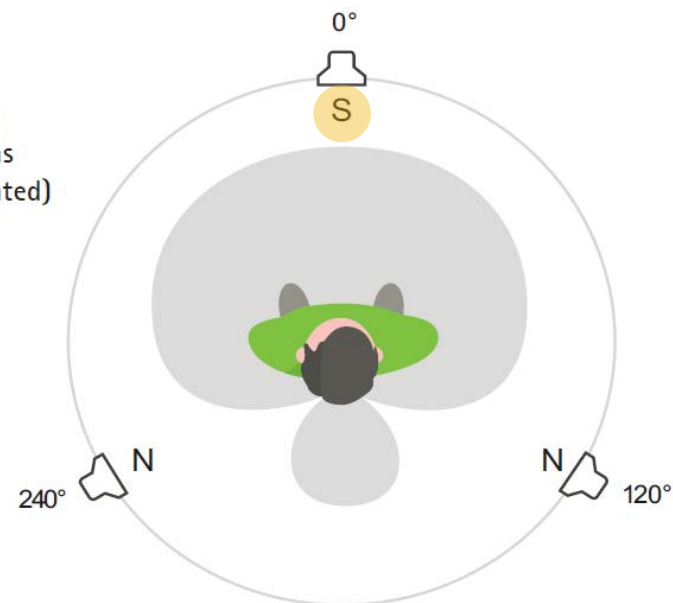
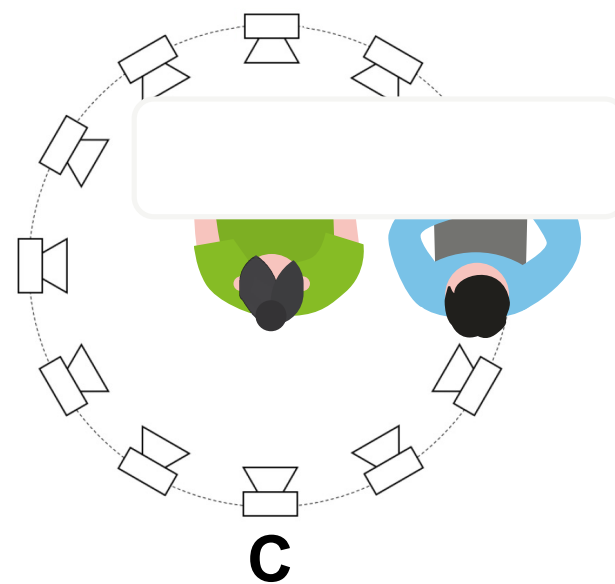
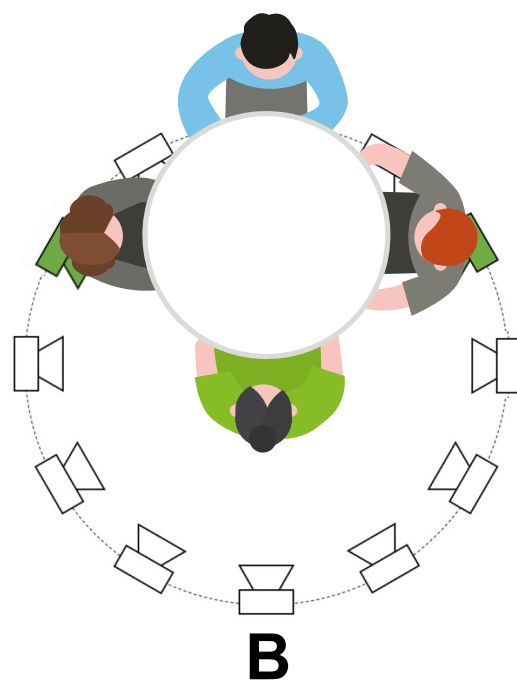
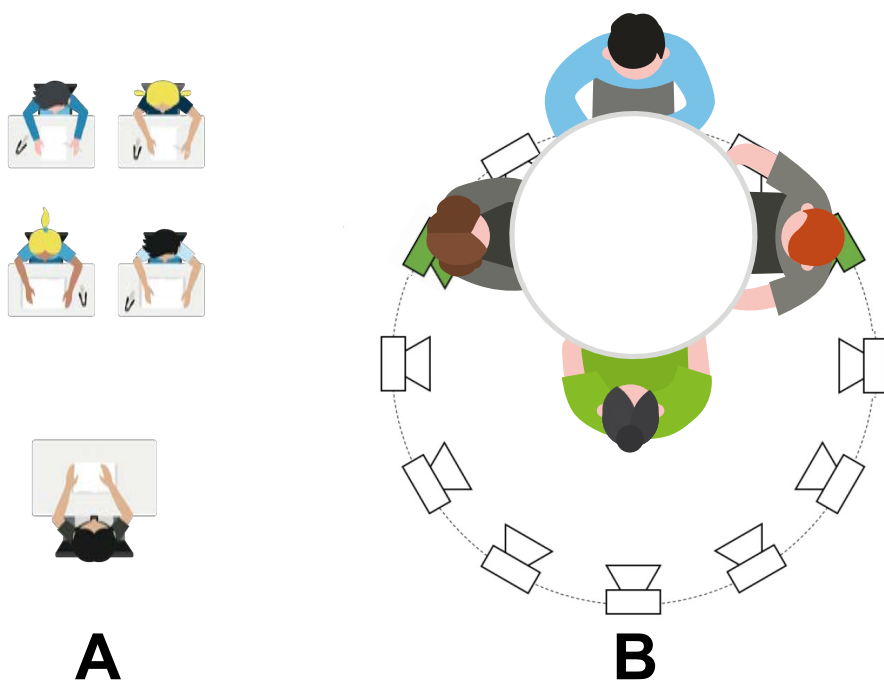


Fig. 2
Setups
from other
publications
(approximated)



Pruess, M., et. al (2024) "What is behind the numbers? Understanding how quality, robust evidence is achieved through realistic technical assessments." Phonak Insight. <https://phonak.com/evidence>

Putting sound setup in context



Background noise scenes

Phonak setup

Ambisonic recordings of **sound scenes** from the **ARTE database**:

- **Café scene** at 71.7 dB SPL
- **Dinner party scene** at 72 dB SPL
- **Food court scene** at 78.2 dB SPL

Others: static noise sources

Pruess, M., et. al (2024) "What is behind the numbers? Understanding how quality, robust evidence is achieved through realistic technical assessments." Phonak Insight. <https://phonak.com/evidence>
Image: Eigenmike microphone, from MH Acoustics





AutoSense OS 7.0

AutoSense OS 7.0 is better than ever before



Trained with
18x more real-world
sound recordings



24% more precise
detection of listening
environments



Source: Wright, A., Cox, M., Keller, M., & Galster, J. (2025). AutoSense OS 7.0 improves speech understanding with highly rated sound quality for challenging listening environments. Phonak Field Study News. Available at <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Impact of classification on speech understanding

Methods

- 17 adults with moderate to moderately severe hearing loss
- AzBio sentences presented at personalized SNR (approx. SNR-50) from the front
- Comparators:



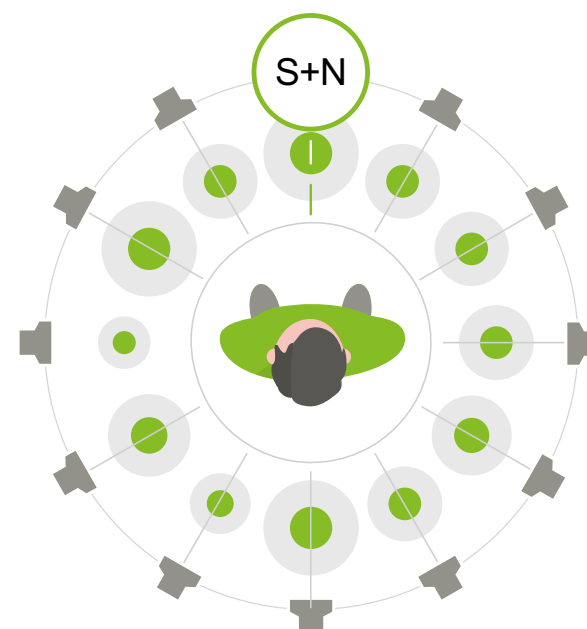
Comfort
In Noise



Speech In
Loud Noise

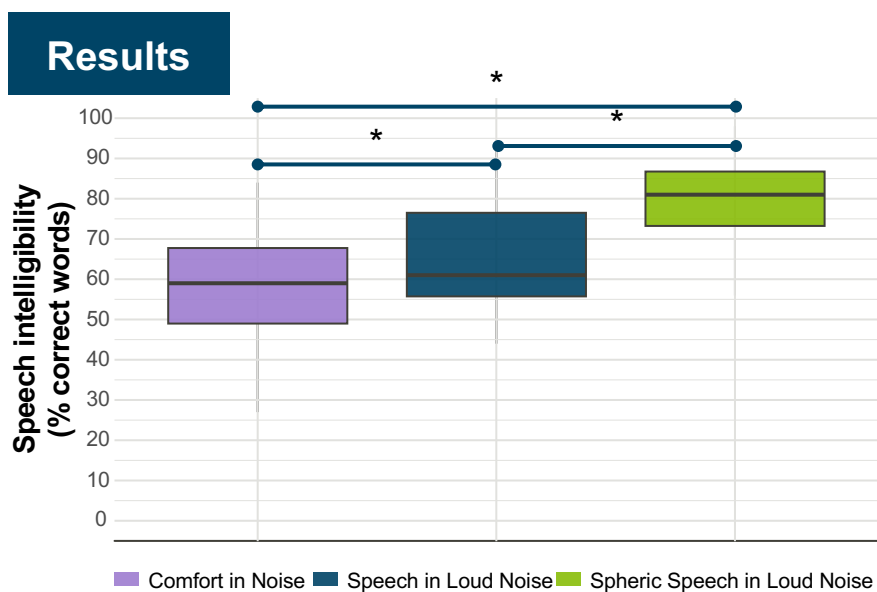


Spheric Speech
In Loud Noise



Source: Wright, A., Cox, M., Keller, M., & Galster, J. (2025). AutoSense OS 7.0 improves speech understanding with highly rated sound quality for challenging listening environments. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Impact of classification on speech understanding



More accurate classification of Speech in Loud Noise and Spheric Speech in Loud Noise results in better speech intelligibility

Source: Wright, A., Cox, M., Keller, M., & Galster, J. (2025). AutoSense OS 7.0 improves speech understanding with highly rated sound quality for challenging listening environments. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Classification accuracy and sound quality

Methods

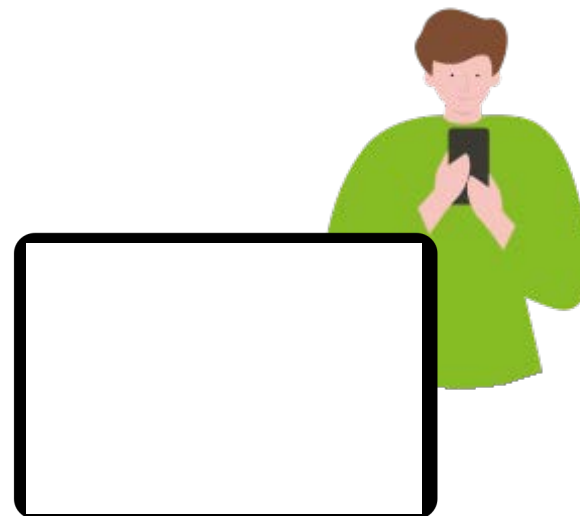
- 17 adults with moderate to moderately severe hearing loss
- Blind sound quality ratings while listening to a speech in noise scene



Comfort
In Noise



Spheric Speech
In Loud Noise

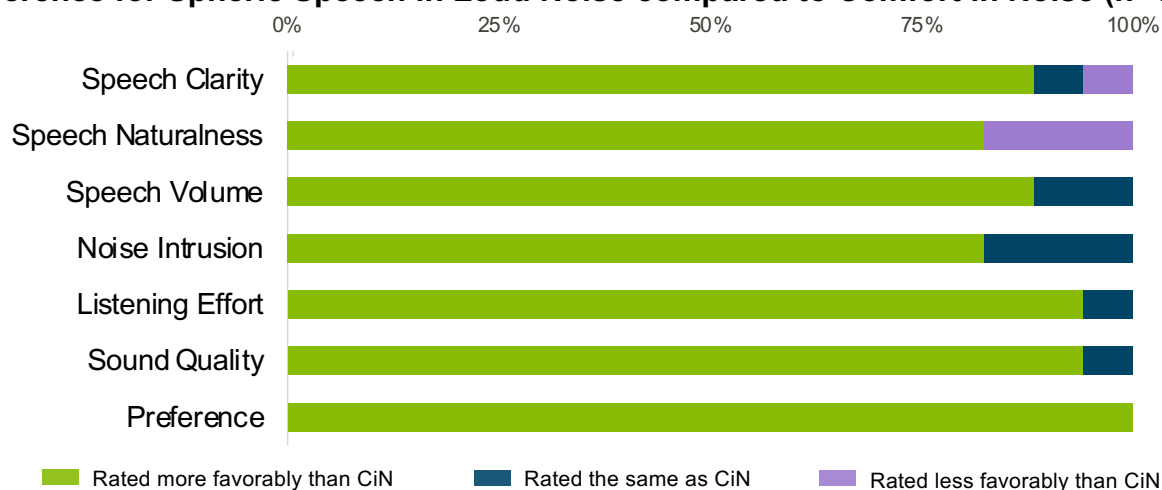


Source: Wright, A., Cox, M., Keller, M., & Galster, J. (2025). AutoSense OS 7.0 improves speech understanding with highly rated sound quality for challenging listening environments. Phonak Field Study News. Available at <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Classification accuracy and sound quality

Results

Preference for Spheric Speech in Loud Noise compared to Comfort in Noise (n=17)



Patients prefer the sound quality when the hearing aid can correctly identify the environment, and ASOS 7.0 has improved accuracy.

Source: Wright, A., Cox, M., Keller, M., & Galster, J. (2025). AutoSense OS 7.0 improves speech understanding with highly rated sound quality for challenging listening environments. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

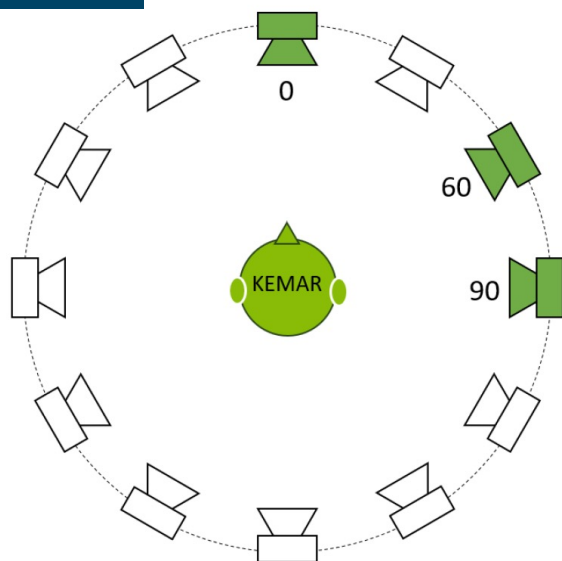
How does AutoSense stack up?



Effective communication is essential, particularly in challenging listening environments

Examining performance in real-world scenarios

Methods



Phonak
Infinio R



Brand
A



Brand
A
manual



Brand
B



Brand
C



Brand
D

Proprietary fitting formula | Highest experience level
Automatic program with default feature settings*



ARTE database:
cafeteria sound scene 71.7 dB SPL

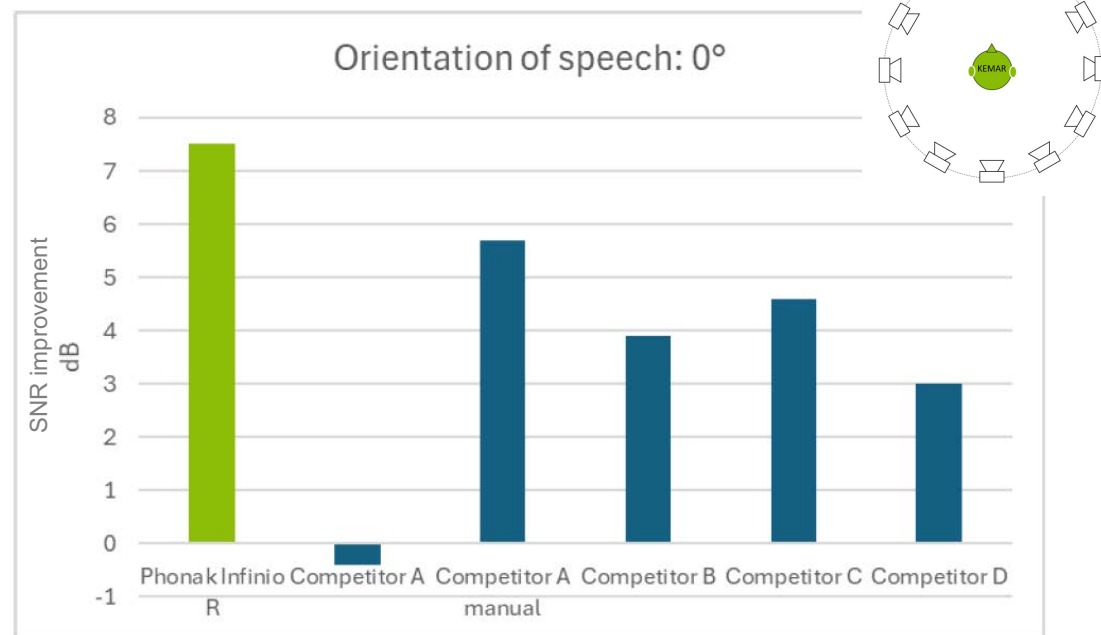
*Brand A manual program also tested

Preuss, M., Ulloa Sanchez, D. (2025). Phonak Audéo R Infinio outperforms competitors for speech in loud noise performance. Phonak Insight. Retrieved from <https://phonak.com/evidence>

Phonak Infinio R outperforms competitors

Results

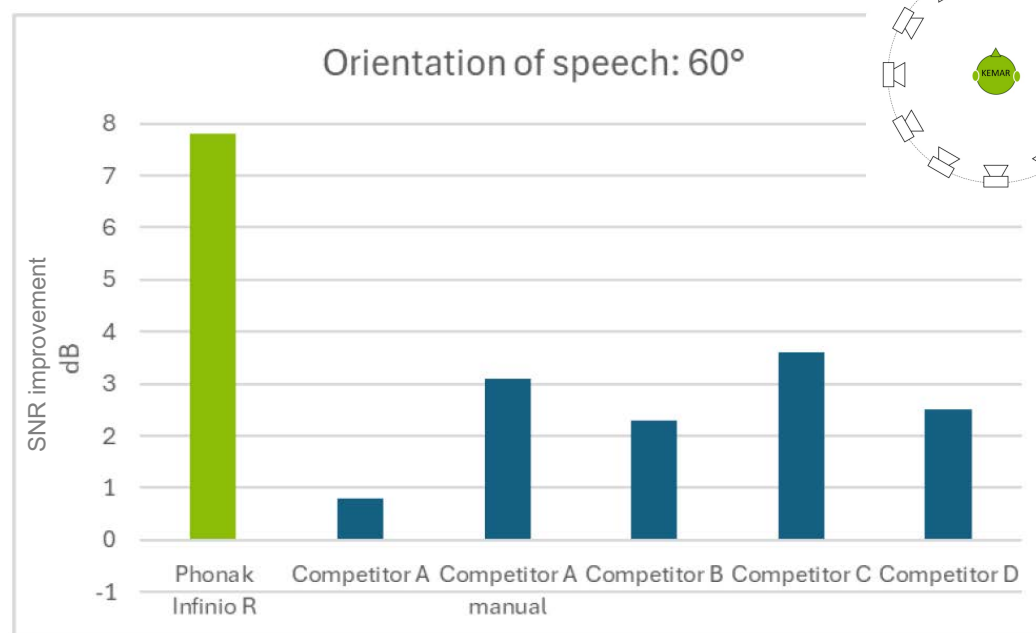
Audéo R Infinio achieves an SNR improvement **at least 2.9 dB higher** than the closest device's automatic program for speech from the front



Phonak Infinio R outperforms competitors

Results

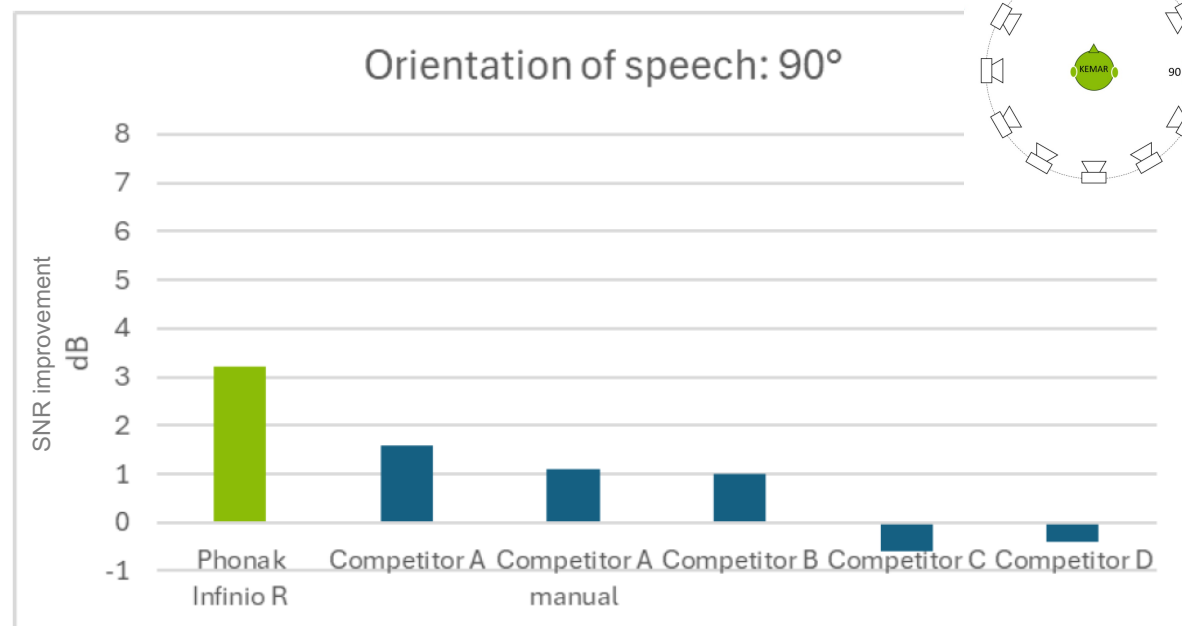
SNR improvement of Infinio R is maintained even as speech moves off-axis



Phonak Infinio R outperforms competitors

Results

SpeechSensor automatically enhances access to speech not coming from the front



Phonak Infinio R outperforms competitors



Infinio R is well-suited for **real-world listening situations**.



Spheric Speech Clarity 2.0



Spheric Speech Clarity
extracts the speech,
enhances it, and
integrates it back into the
signal for instantaneous
separation of speech
from noise in any
direction.

Speech intelligibility for overlapping voices

Methods

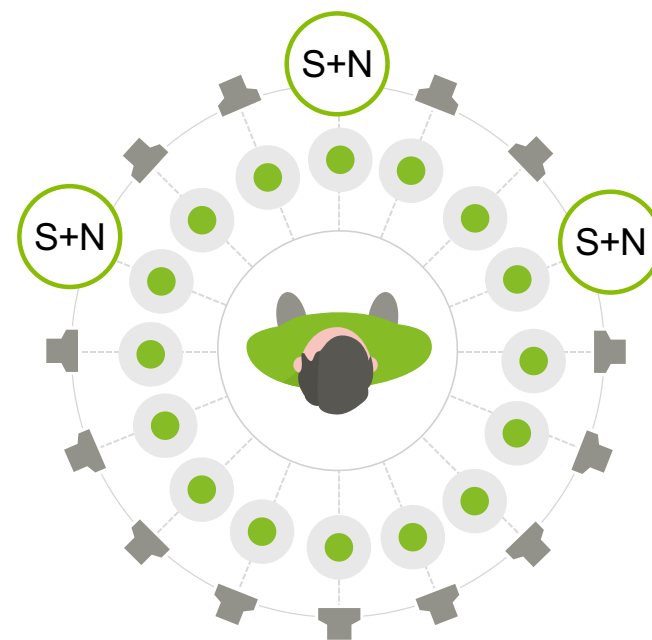
- 22 adults, moderate to severe hearing loss
- OLSA sentences presented from 0, +68 and -68 degrees with personalized overlap time and personalized SNR



StereoZoom 2.0



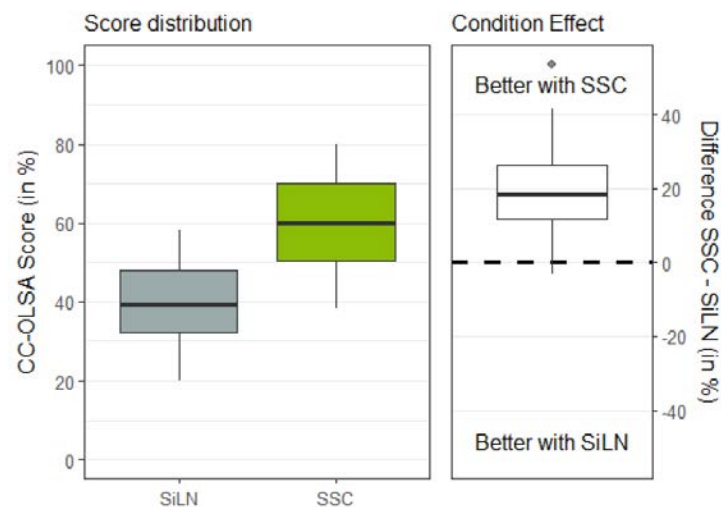
Spheric Speech Clarity



Source: Latzel, M., Heeren, J., Lesimple, C., Goekalan, M., Puhlemann, L., & Haf, C. (2025). Spheric Speech Clarity improves speech understanding and reduces both listening effort and fatigue. Phonak Field Study News. Available at <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Speech intelligibility for overlapping voices

Result



In group conversations, patients can understand more of the speech they want to hear with Spheric Speech Clarity.

Source: Latzel, M., Heeren, J., Lesimple, C., Goekalan, M., Puhlemann, L., & Haf, C. (2025). Spheric Speech Clarity improves speech understanding and reduces both listening effort and fatigue. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Spatial speech intelligibility

Methods

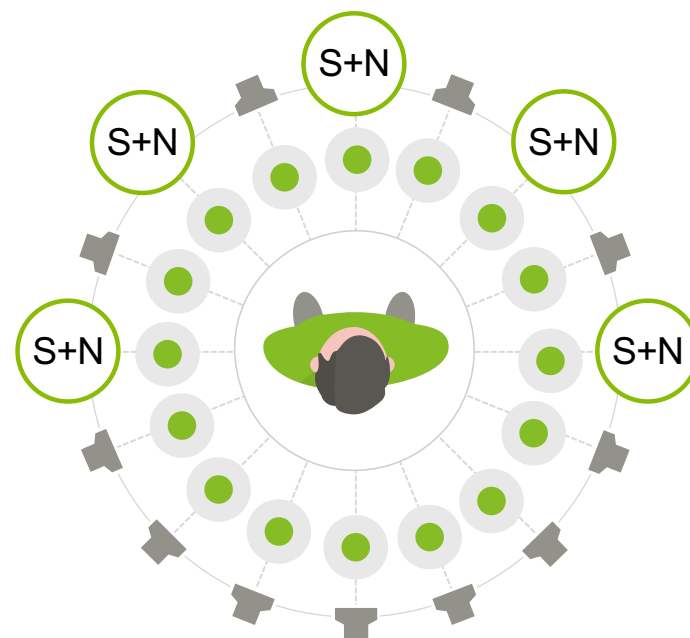
- 22 adults, moderate to severe hearing loss
- OLSA sentences presented from 5 loudspeakers around the listener, one word per speaker; adaptive SNR



StereoZoom 2.0



Spheric Speech Clarity

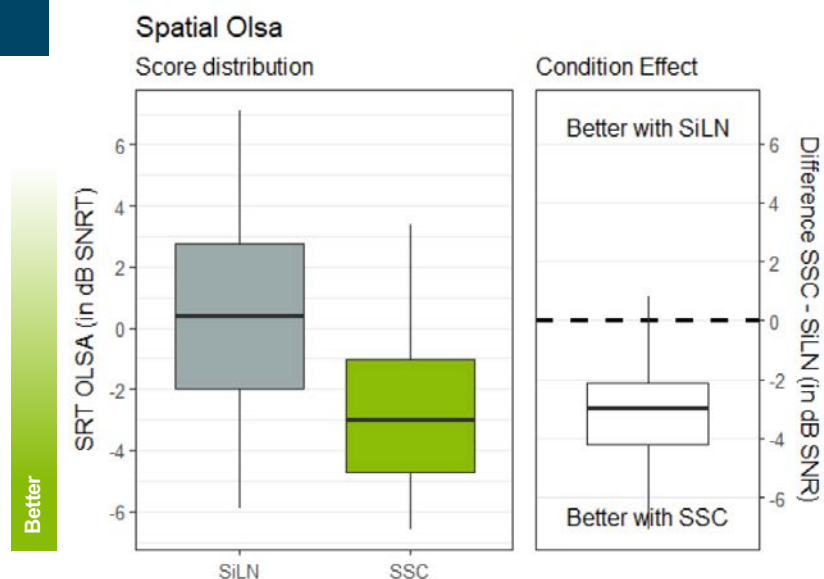


Source: Latzel, M., Heeren, J., Lesimple, C., Goekalan, M., Puhlemann, L., & Haf, C. (2025). Spheric Speech Clarity improves speech understanding and reduces both listening effort and fatigue. Phonak Field Study News. Available at <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>



Spatial speech intelligibility

Result



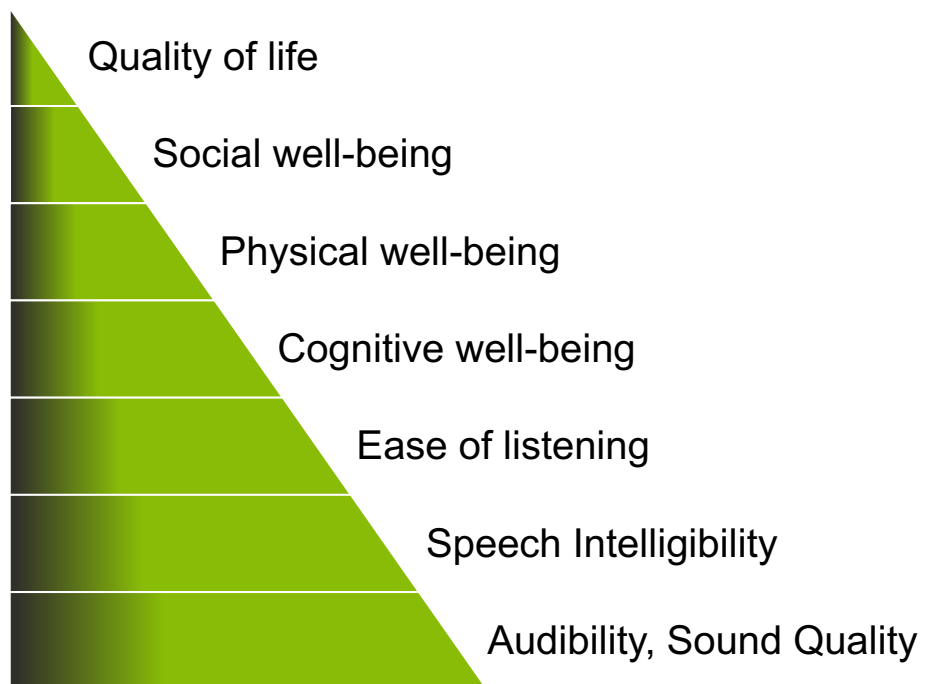
In a fast-paced, dynamic environment, SSC helps patients hear more of the conversation.

Source: Latzel, M., Heeren, J., Lesimple, C., Goekalan, M., Puhlemann, L., and Haf, C. (2025). Spheric Speech Clarity improves speech understanding and reduces both listening effort and fatigue. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

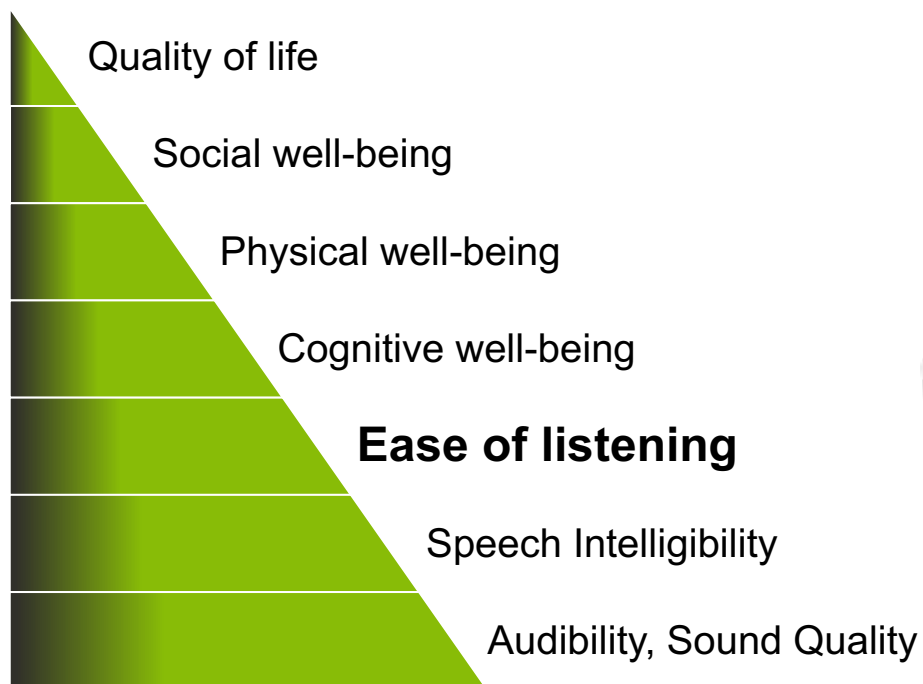


Higher level benefits

Connecting evidence to higher level patient outcomes



Connecting evidence to higher level patient outcomes



Subjective listening effort

Methods

- 22 adults, moderate to severe hearing loss
- ACALES with speech presented from 90 degrees; adaptive SNR

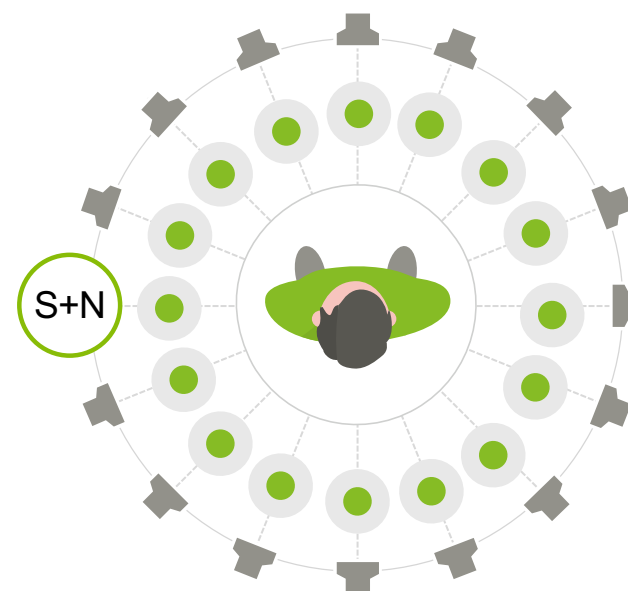


StereoZoom 2.0



Spheric Speech Clarity

How effortful is it for you to follow the speech?

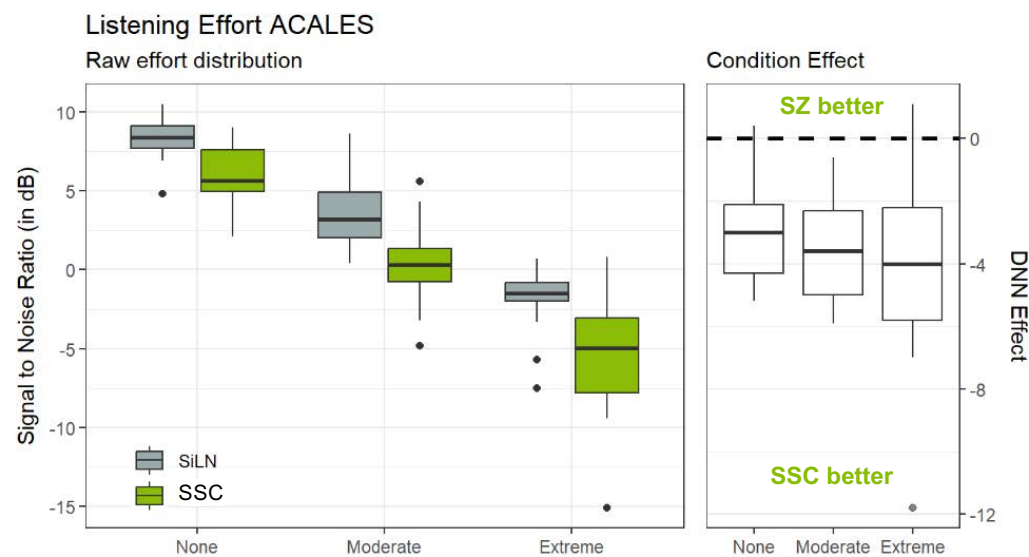


Source: Latzel, M., Heeren, J., Lesimple, C., Goekalan, M., Puhlemann, L., & Haf, C. (2025). Spheric Speech Clarity improves speech understanding and reduces both listening effort and fatigue. Phonak Field Study News. Available at <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Subjective listening effort

Result

Spheric Speech Clarity **reduced** listening effort **by 37%.**



SSC makes hearing and understanding speech from off axis easier.

Source: Latzel, M., Heeren, J., Lesimple, C., Goekalan, M., Puhlemann, L., & Haf, C. (2025). Spheric Speech Clarity improves speech understanding and reduces both listening effort and fatigue. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Listening fatigue

Methods

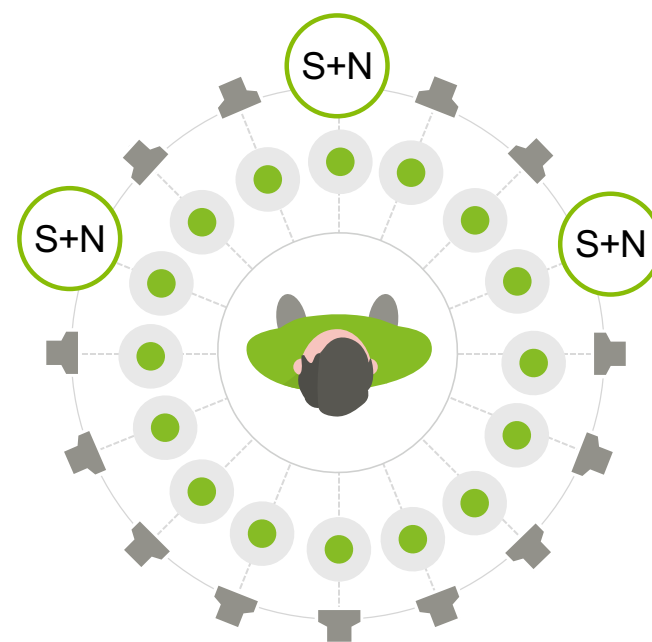
- 22 adults, moderate to severe hearing loss
- OLSA sentences presented from 0, +68 and -68 degrees with adaptive overlap time and personalized SNR



StereoZoom 2.0



Spheric Speech Clarity

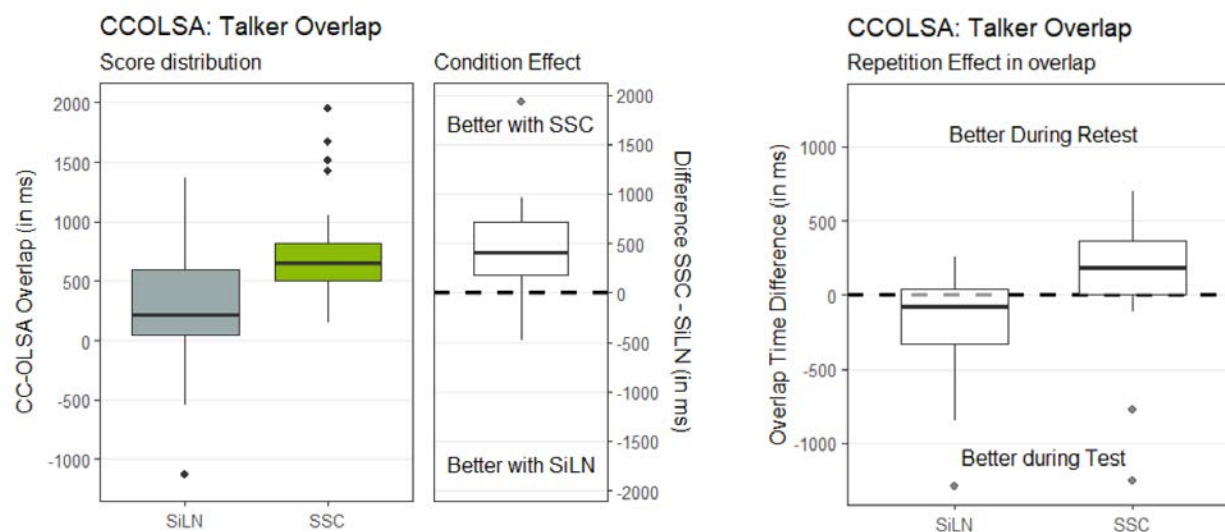


Source: Latzel, M., Heeren, J., Lesimple, C., Goekalan, M., Puhlemann, L., & Haf, C. (2025). Spheric Speech Clarity improves speech understanding and reduces both listening effort and fatigue. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Listening fatigue

Result

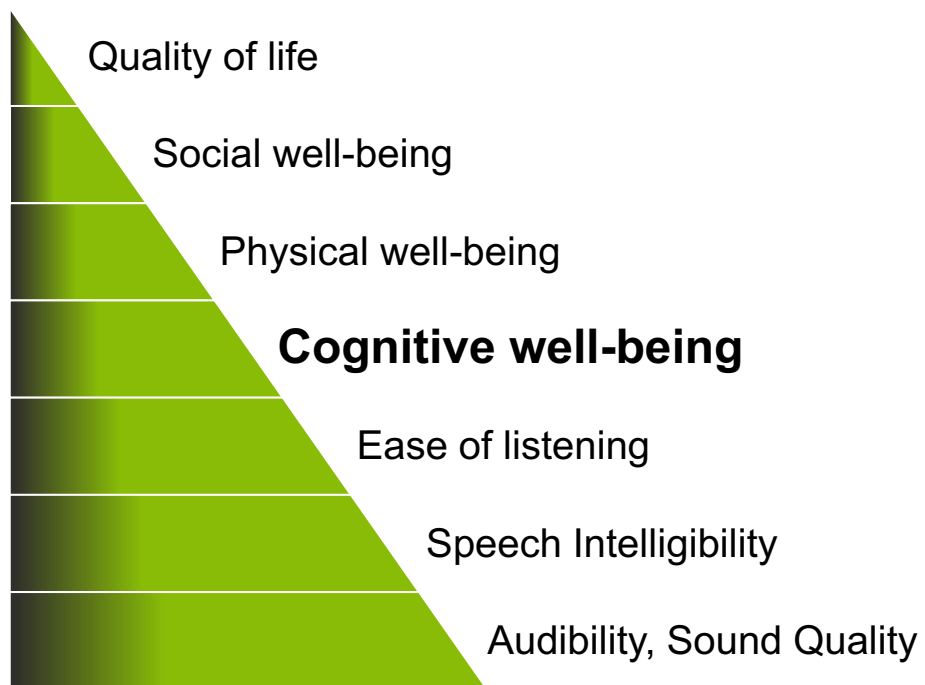
Overlap time increased over repeated testing with Spheric Speech Clarity suggesting it has the ability to reduce the effect of listening fatigue



Listening in noise can be draining, but patients fatigue less with SSC.

What would it
mean to your
patients to
not be as
fatigued from
listening?

Infinio evidence



Working memory capacity in noise

Methods

- 18 adults with mild to moderate hearing loss
- Backward digit span in noise at 5 dB SNR



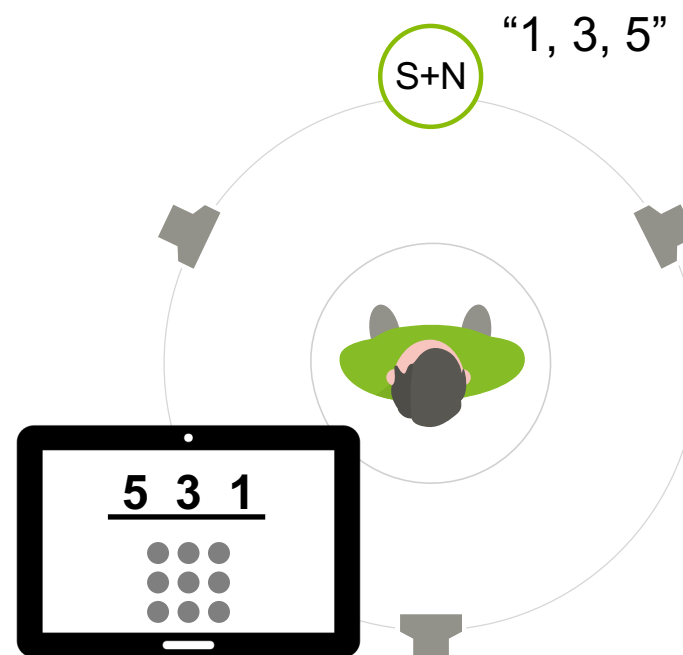
RealEar Sound



Fixed Directional
SSC Off



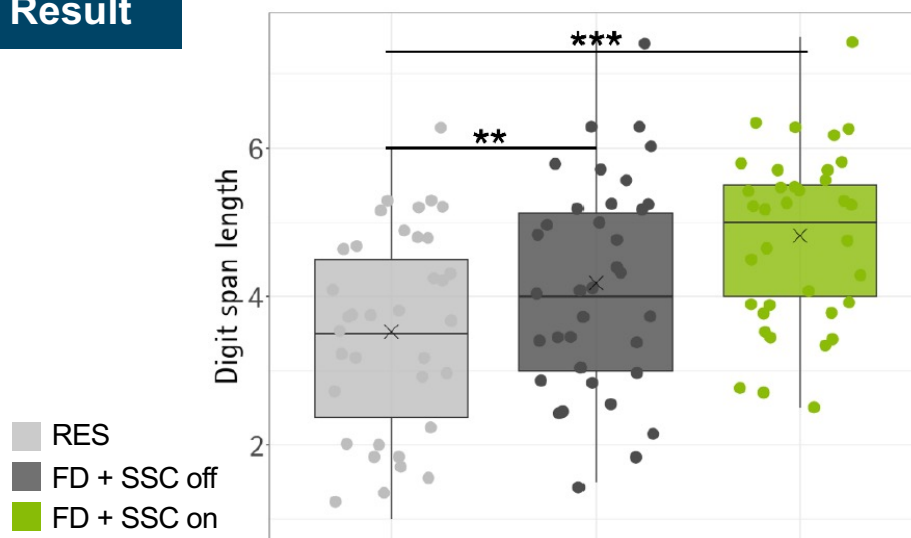
FD + Spheric
Speech Clarity On



Source: Huang, HY., Huang, W., Tian, X., Guan, J., Kuehnel, V., & Appleton-Huber, J. (2025). Spheric Speech Clarity enhances interference control and working memory while listening in noise.. Phonak Field Study News. Available at <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Working memory capacity in noise

Result



Participants could remember more of what they heard in a noisy setting when using SSC.

Source: Huang, HY., Huang, W., Tian, X., Guan, J., Kuehnel, V., & Appleton-Huber, J. (2025).
Spheric Speech Clarity enhances interference control and working memory while listening in noise.
Phonak Field Study News. Available at <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Brain activity

Methods

- 26 adults with prior HA experience
- Speech presented in noise at personalized SNR; fNIRS tracking concentration of oxygenated blood in brain



Calm Situation



Spheric Speech
In Loud Noise

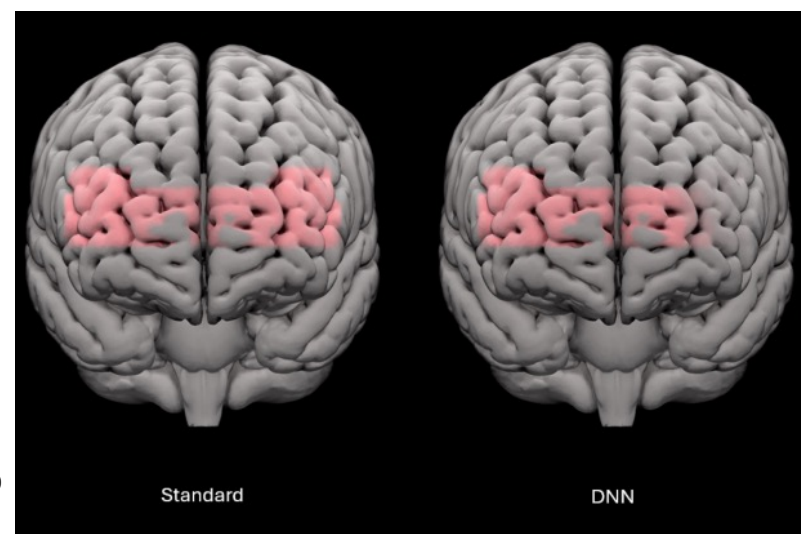
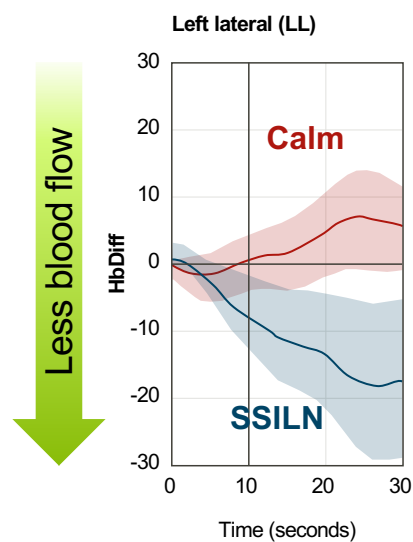


Vaisberg, J.M., Dang, C., Jiang, Y. et al. Brain benefits of deep learning-based noise management in experienced hearing aid users using functional near infrared spectroscopy. *Sci Rep* 15, 41815 (2025). <https://doi.org/10.1038/s41598-025-25801-y>

Brain activity

Result

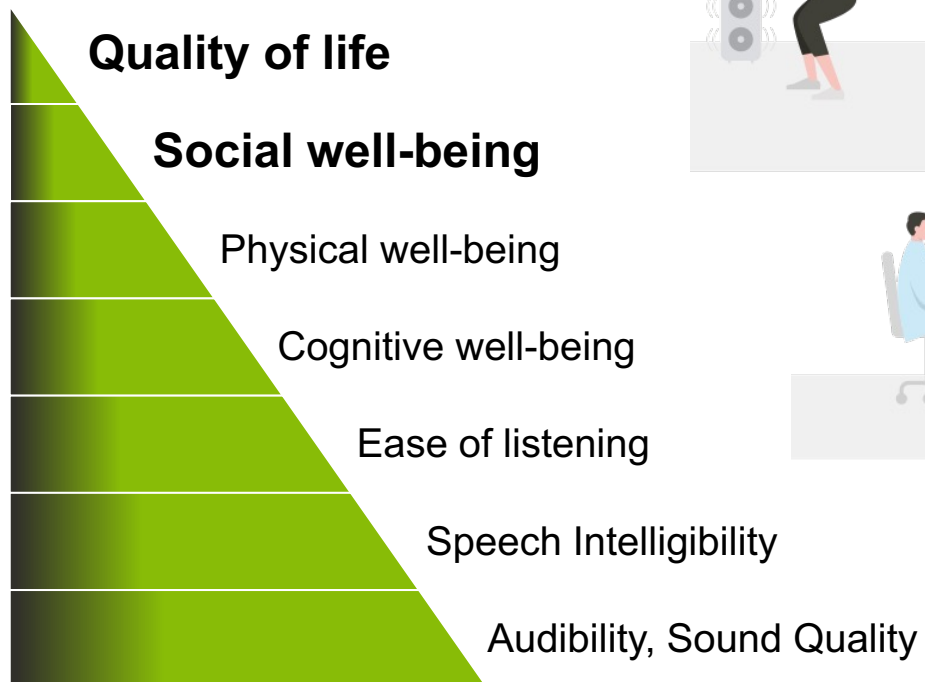
Less oxygenated blood
with Spheric Speech in
Loud Noise



A combination of beamforming and (Spheric Speech Clarity) may lessen cognitive resource demands during listening compared to other hearing aid programs in difficult listening situations.

Vaisberg, J.M., Dang, C., Jiang, Y. *et al.* Brain benefits of deep learning-based noise management in experienced hearing aid users using functional near infrared spectroscopy. *Sci Rep* 15, 41815 (2025). <https://doi.org/10.1038/s41598-025-25801-y>

Infinio evidence



Overall well-being

Reduced fatigue, anxiety

Reduced fatigue:

- Yes, since I am no longer struggling to hear, my **fatigue has been reduced**. It is much easier to engage fully when I'm using the hearing aids.
- **Less fatigue** and **less initial anxiety** when approaching a situation, such as talking to my pharmacist behind the counter.
- I may be **less anxious** about social situations.

Increased confidence

It has made me feel **more confident** to resume things that I stayed away from as I was embarrassed that my hearing loss was getting worse.

Energy

My **energy levels** may be a bit better.

Stress

To think about it, I believe I **don't stress out in the noisy environment as much** as I use to.

Significant other observation

Increased engagement

- My spouse has mentioned that I **seem more attentive**.
- My partner has **noticed improvement in my interaction** as I **hear better in noisy places**. I'm **more engaged** in conversations as I hear better.
- Yes, my friends and family notice I am able to **respond and actively participate**.

Reduce frustration

- My family and I have noticed a **huge difference** in my hearing!
- They don't have to repeat parts of the conversation in person or on the phone. It was so frustrating! I would have them **spell out or text** me the word. They are super happy that I **am more myself!**

Willingness to engage in social situations

I'm **more comfortable attending** social gatherings. I am **less likely to need my partner** to inform me what was said.

Yes, **normally I would avoid situations**. I even retired early as it was so frustrating in meetings and events or just talking in the office. I would avoid going to restaurants or dog training I would bring my husband to help me with the hearing part. **Now I go to what ever I want I'm not worried to go by myself!**



I feel somewhat **more willing** to join social situations than before having Sphere HAs.

Small parties and lunch meetings are not a chore to avoid as **I can now participate fully despite the background noise**.

I'm not engaging more often in social situations. However, I am able to **participate much more efficiently** when using the hearing aids.

Recap

- Integrity of research design
- Improvements with AutoSense OS 7.0
- AutoSense in action
- Going next level with Spheric Speech Clarity 2.0
- Moving beyond device performance
 - Listening effort & fatigue
 - Cognitive well-being
 - Quality of Life



Infinio Infinio Ultra is the very best. For you and your patients.

Study details can be accessed at **Phonak.com/evidence**



Together,
we change lives



References

Huang, HY., Huang, W., Tian, X., Guan, J., Kuehnel, V., & Appleton-Huber, J. (2025). Spheric Speech Clarity enhances interference control and working memory while listening in noise.. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

Latzel, M., Heeren, J., Lesimple, C., Goekalan, M., Puhlemann, L., & Haf, C. (2025). Spheric Speech Clarity improves speech understanding and reduces both listening effort and fatigue. Phonak Field Study News. Available at: <https://www.phonak.com/en-int/professionals/audiology-hub/evidence-library>

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