

Conversations Shine with Sky Lumity

Nicole King, Au.D., CCC-A

Account Manager, Children's Hospitals &
Schools

Webinar FAQs

- **How to ask a question:**
 - Click Q&A, type your question and Send.
- **Where to get the handout:**
 - Download from Pending Courses
 - Or Click on link from Chat
- **How to view captions:**
 - Click Live Transcript CC button
 - Click Show Subtitle
- **How to earn CEUs:**
 - After the webinar, go to your Pending Courses and pass the multiple-choice exam.
- **For assistance or tech support:**
 - Call 800-753-2160
 - customerservice@audiologyonline.com
 - Use the Q&A window



Conversations Shine with Sky Lumity.

Nicole King, Au.D., CCC-A

Account Manager, Children's Hospitals & Schools



Learning Objectives

- After this course, participants will be able to list new Lumity products.
- After this course, participants will be able to describe what Lumity product to recommend for which patient
- After this course, participants will be able to state which Lumity technology is appropriate to recommend for their next patient

Well-hearing is Well-being



Social and emotional



National Scientific Council on the Developing Child. (2004). Young children develop in an environment of relationships. Retrieved from <https://46y5eh11fhgw3ve3ytpwxt9r-wpengine.netdna-ssl.com/wp-content/uploads/2004/04/Young-Children-Develop-in-an-Environment-of-Relationships.pdf>, accessed August 19th, 2019.



Serve and returns help cognitive development



Support the development
of **social and communication skills**



Stimulate the
formation of neural connections



Strengthen
the **brain architecture**



Promote
cognitive and **social-emotional development**

Physical development is vital for cognition



Physical activity helps to develop personal and social skills



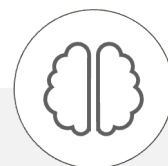
Xu, W., Li, C., & Wang, L. (2020). Physical Activity of Children and Adolescents with Hearing Impairments: A Systematic Review. *International journal of environmental research and public health*, 17(12), 4575. <https://doi.org/10.3390/ijerph17124575>.

Cognitive development in children and teens



Ears are the doorway to the brain

- Access to intelligible speech and meaningful auditory information as early as possible ...¹
- "... both a hearing brain and a listening brain...
... trained in favorable listening conditions"¹
- Good language and communication ability is associated with **better emotional well-being**²



Insight: The Amazing Teen Brain

- Teens' brains are open to novelty, change and experience³
- "... use of advanced conversations"³
- Talk therapy makes us feel better and changes our brains in the process³

1. Flexor, C. (2018). Phonak Insight: The ears are doorways to the brain. www.phonak.com/evidence. | 2. National Deaf Children's society (2020). Emotional wellbeing in deaf children and young people, and their families. https://www.ndcs.org.uk/media/6198/emotional_wellbeing_literature_review_2020.pdf. | 3. English, C. (2019). Phonak Insight: The amazing teenage brain: Ready for advanced conversations. www.phonak.com/evidence.

Facilitating well-being in pediatrics

It's a matter of trust



A Lumity solution for pediatrics



50 years of commitment to
pediatric solutions



Connectivity



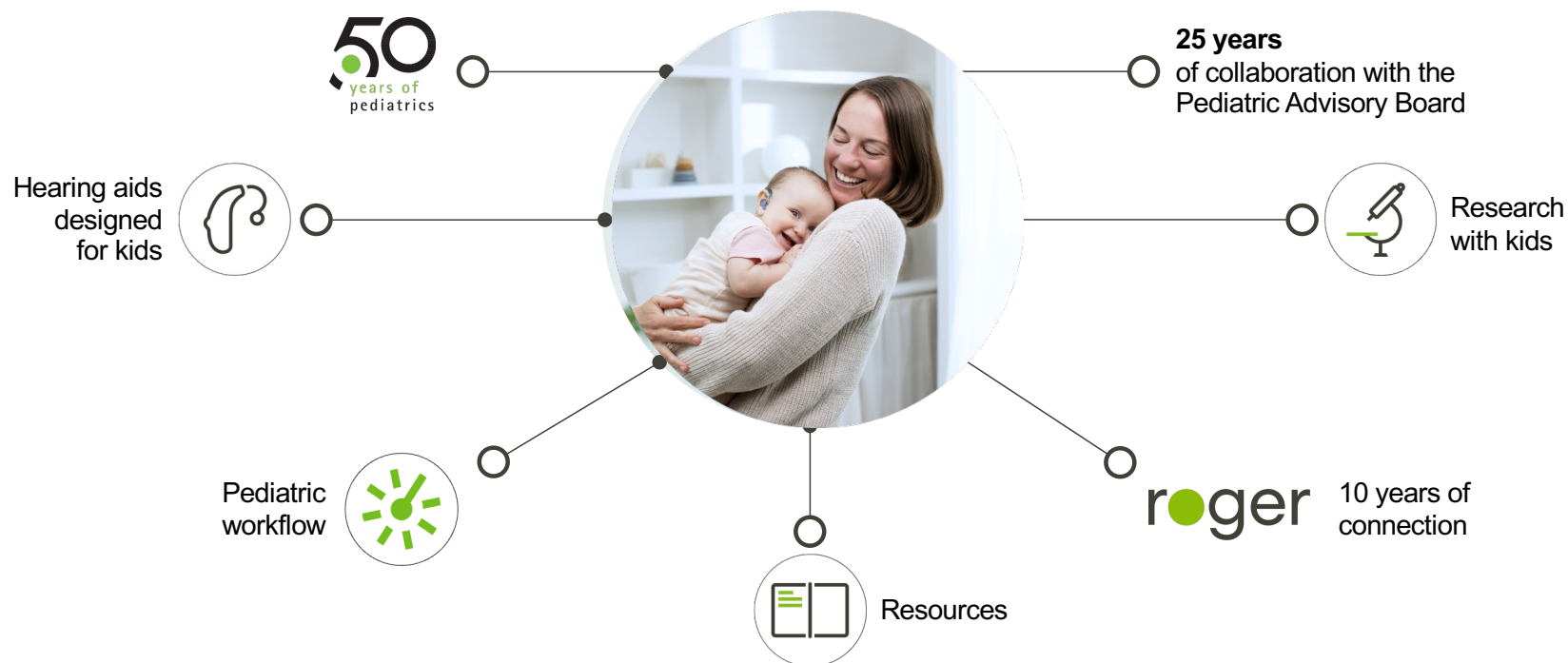
Speech understanding
with innovative technology



Designed for young users



Phonak and pediatrics



Introducing the Phonak Lumity pediatric ecosystem

Sky L
(PR, UP)



Audéo L
(R, RT, RL)



CROS L



Chargers

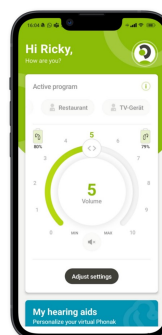


Roger™



myPhonak Junior

Compatible with: Sky L | Sky M | Audéo L | Audéo P |
Audéo M | CROS L | CROS P





Phonak Sky™ Lumity●

Sky Lumity: Features

- AutoSense Sky OS 5.0
- StereoZoom 2.0
- Speech Enhancer
- SpeechSensor
- Dynamic Noise Cancellation
- Motion Sensor Hearing*
- RogerDirect™

- CROS L-R compatible*
- Tap Control*



- Universal Bluetooth® connectivity
- myPhonak Junior app
- Wearing time and Remote Support

- Robust and reliable housing
- Stylish color range
- Tamper-proofing options
- LED visual indicator
- Pediatric workflow

*Sky L-PR only

The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by Sonova AG is under license.

Sky Lumity: Performance levels

Feature	90	70	50
StereoZoom 2.0 in ASOS	X		
StereoZoom 2.0 as manual program	X	X	
SpeechSensor	X		
Speech Enhancer	X		
Dynamic Noise Cancellation	X	X	
Motion Sensor Hearing (Sky L-PR)	X	X	X
Tap Control (Sky L-PR)	X	X	
Hands Free Protocol improvement	X	X	X
Windblock*	X	X	X
Roger and Directional	X	X	X

New

*Established features migrated to new levels for Sky

Sky Lumity: Colors

Popular pediatric colors



Velvet Black



Electric Green



Caribbean Pirate



Majesty Purple



Precious Pink



Lava Red



Blue Ocean

Standard colors



Beige



Sand Beige



Sandalwood



Chestnut



Champagne



Silver Gray

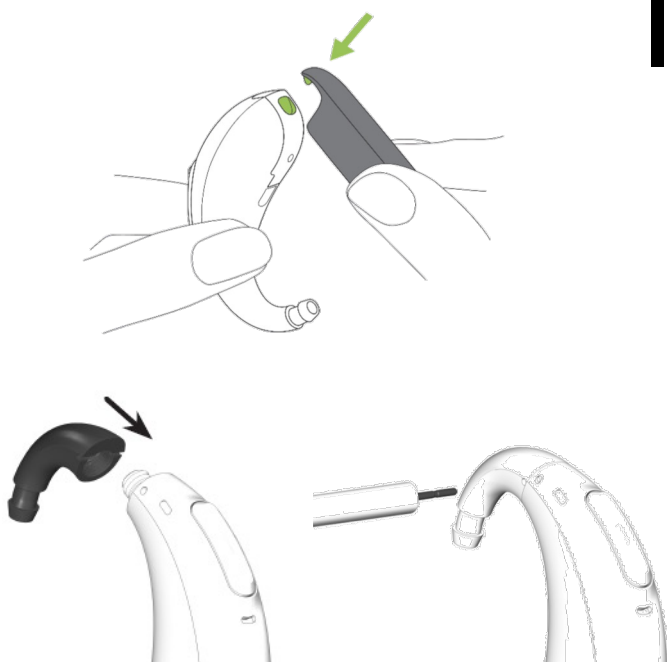


Graphite Gray



Sky Lumity: Protection

IP68



 Sky Lumity: Charger solution
- Charger Combi BTE 2



Sky Lumity: Battery life



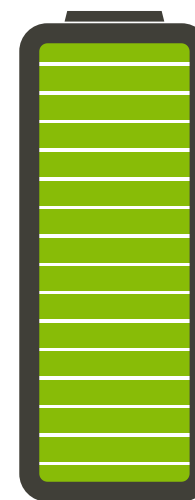
6 hours

AutoSense Sky OS

10 hours

Roger or TV Connector
streaming

~10 days*



* UP battery time dependent on brand of battery, degree of hearing loss and how the hearing aid is used, eg streaming time etc.

10 days is based on a 16 hour day.



Phonak Audeo Lumity.

Phonak solution for when kids get older

Audéo L-R, RT and RL additional colors



Audéo L-R



Audéo L-RT



Audéo L-RL



Charger Ease for
Audéo R and RT



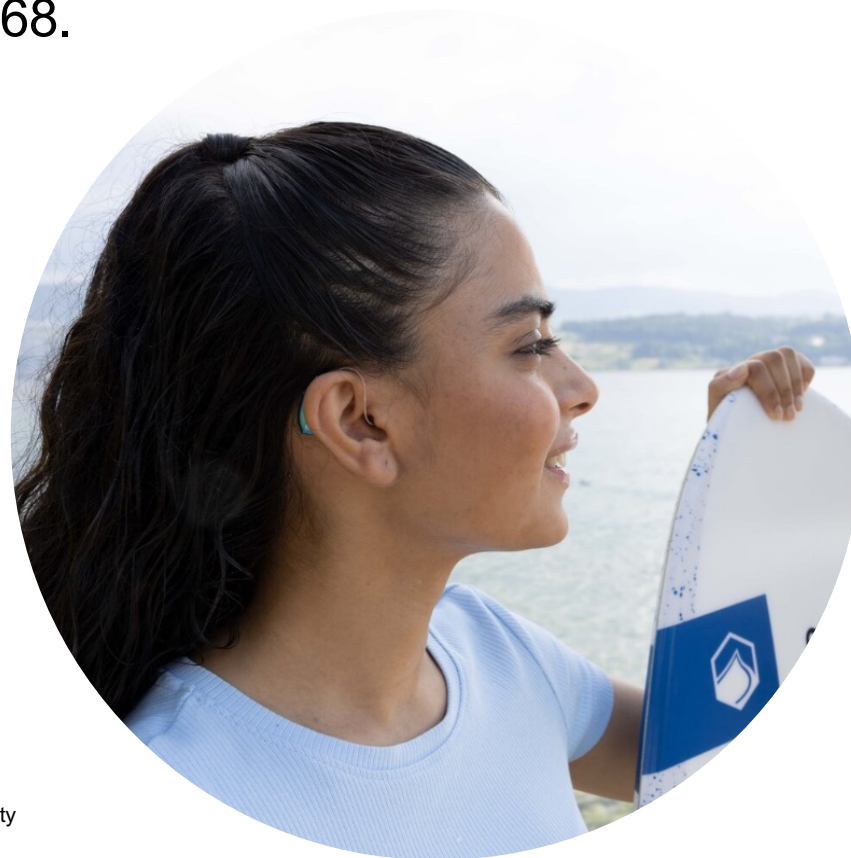
Audéo Life. More than your average IP68.

- ✓ **Water-resistant at 1 m for 1 hour**
- ✓ Waterproof at 50 cm w/o time limit
- ✓ Freshwater tests
- ✓ Pool water tests
- ✓ Saltwater tests
- ✓ Sweat tests

Charger
Case Go



*update firmware version for improved charging reliability



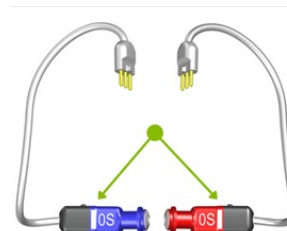
New! Cerustop wax protection for RICs

Back by popular demand!

Compatible with new SDS 5 receivers

Choose your SDS with your order

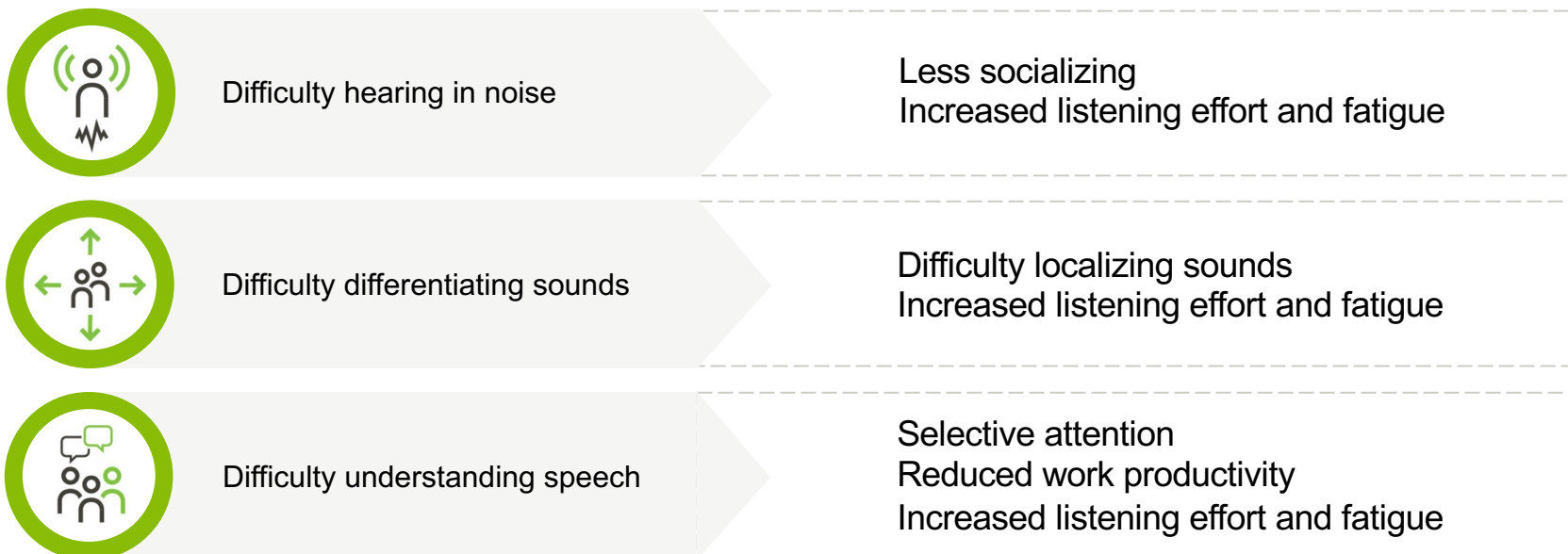
Compatible
with Marvel
and
Paradise
RIC devices





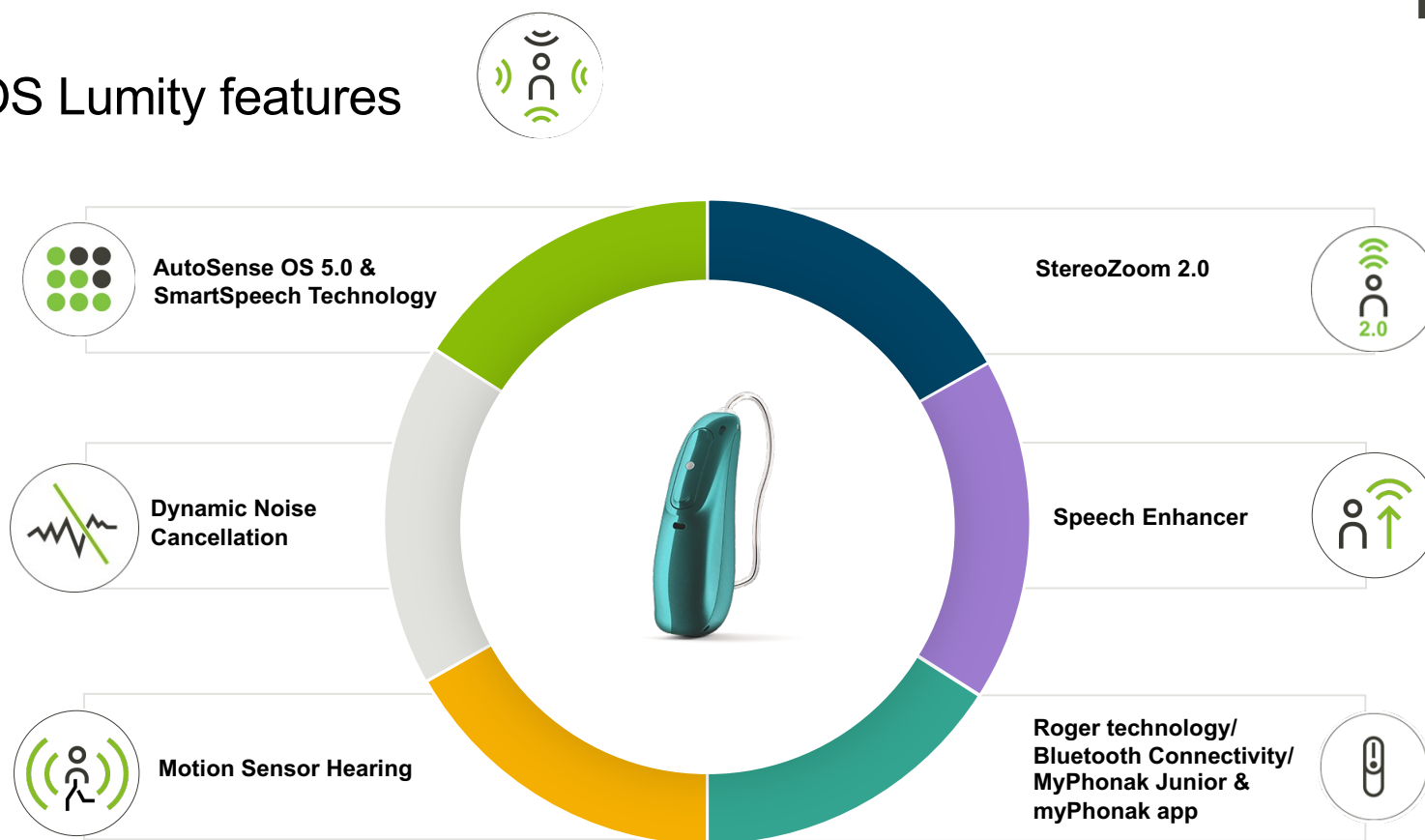
Phonak CROS Lumity.

Unaidable unilateral hearing loss: Small population, big challenges



Stewart, E. & Woodward, J. (2021). Out of the (Head) Shadow: A Systematic Review of CROS/BiCROS Literature. The Hearing Review, 28(8), 22-25. <https://www.hearingreview.com/inside-hearing/research/head>
 Picou, E. M., Davis, H., Lewis, D., & Tharpe, A. M. (2020). Contralateral Routing of Signal Systems Can Improve Speech Recognition and Comprehension in Dynamic Classrooms. J Speech Lang Hear Res, 63(7), 2468-2482.
https://doi.org/10.1044/2020_JSLHR-19-00411

CROS Lumity features



CROS Lumity compatibility

Sky L-PR
+ CROS L



From 6 years of age

Audéo L-R
+ CROS L



From 8 years of age

Audéo L-RT
+ CROS L



Charger Ease
Compatible with
CROS L-R

*Sky L-PR can be fit to children from birth | Audéo L form factors can be fit to children from 8 years of age | CROS L can be fit to children from 6 years of age.



Phonak Connectivity.

Compatibility with Roger™



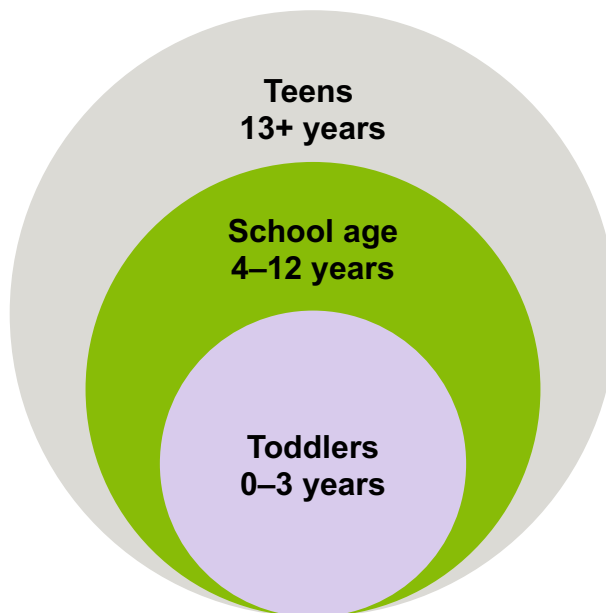
For home



Roger Clip-On Mic



Roger On™



For education



Touchscreen Mic



Pass-around



Multimedia Hub



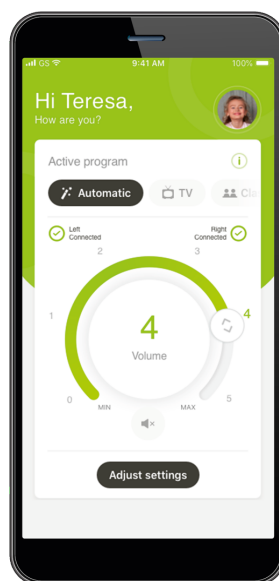
SoundField

What's new in myPhonak Junior 1.2?

Compatibility with:

- Sky L-PR and UP
- Audéo L-R, RT, RL
- CROS L, CROS P
- Naída L

Wearing time and
goal setting



New user interface for
teens/tweens

Increased personalization

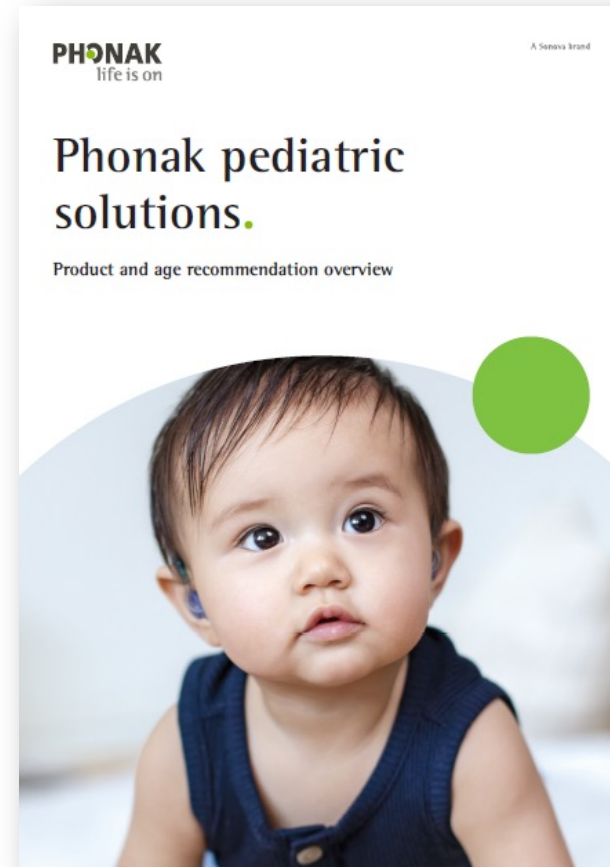
Operating system requirements
Apple: iOS 15 and Android: OS 8



A solution for all

Age consideration guidelines

- Considerations for:
 - Sky
 - Audéo
 - CROS
- Roger microphone information
- Benefits of myPhonak Junior app



A Lumity solution for pediatrics



50 years of commitment to
pediatric solutions



Speech understanding
with innovative technology



Connectivity



Designed for young users



Impact of fatigue on children with hearing loss

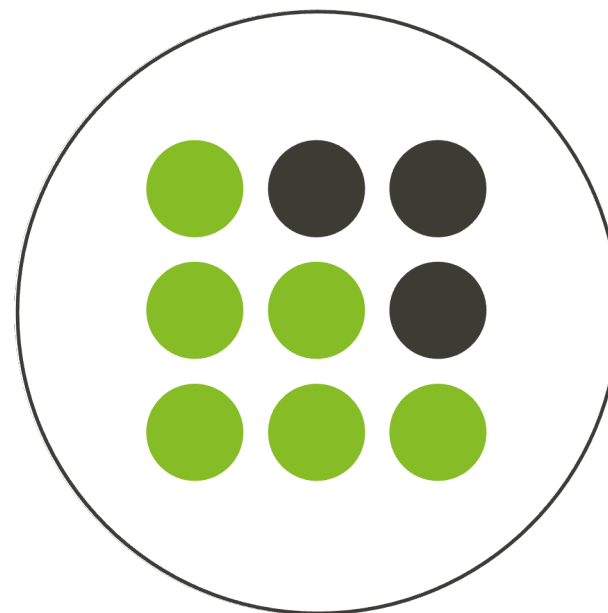
- Children with hearing loss **experience greater levels of fatigue** than children with normal hearing which is attributed to the **difficulties they experience in noisy environments**¹
- Almost **90%** of an elementary-age child's school day is spent **listening** to speech in noise²



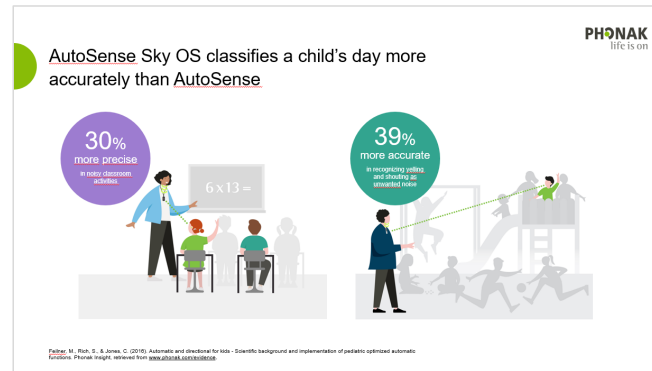
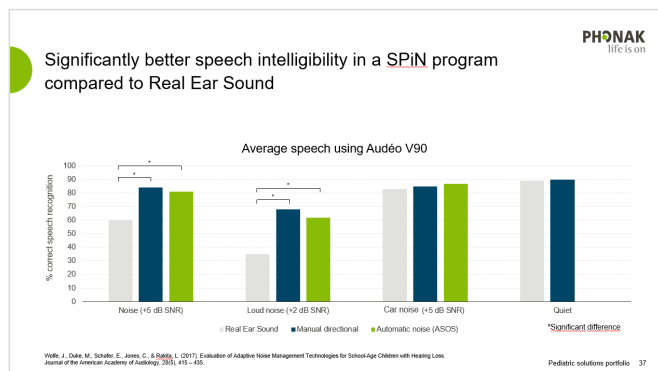
1. Hornsby, B. W. Y., Gustafson, S. J., Lancaster, H., Cho, S. J., Camarata, S., & Bess, F. H. (2017). Subjective fatigue in children with hearing loss assessed using self- and parent-proxy report. *American Journal of Audiology*, 26(S), 393–407. |
2. Cruckley, J., Scollie, S., & Parsa, V. (2011). An exploration of nonquiet listening at school. *Journal of Educational Audiology*, 17, 23–35.

How AutoSense Sky OS helps

- **200+** unique setting combinations
- Scans the environment **700 times** per second
- More than **20 years of innovation** in machine learning using real-world sound recordings of children's environments
- AutoSense Sky OS 5.0 provides **greater listening comfort** by accurately classifying both speech and noise to provide the right level of noise reduction

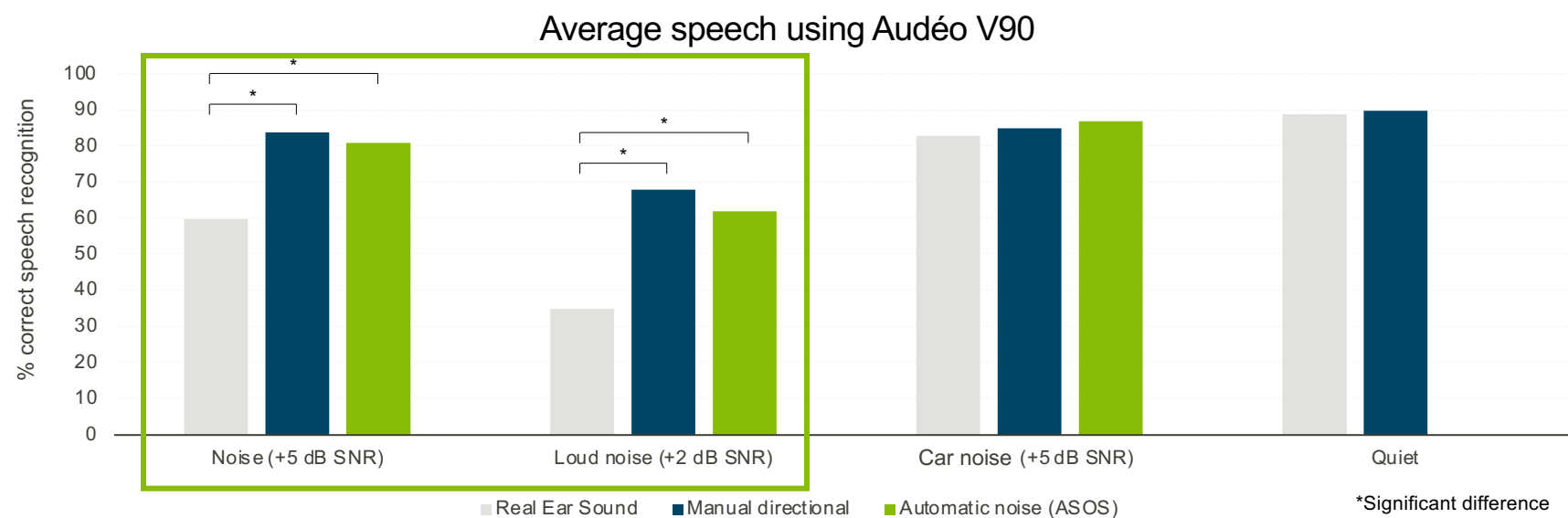


The evolution of AutoSense Sky OS – What do we know?



1. Wolfe, J., Duke, M., Schafer, E., Jones, C., & Rakita, L. (2017). Evaluation of Adaptive Noise Management Technologies for School Age Children with Hearing Loss. Journal of the American Academy of Audiology, 28(5), 415 – 435. | 2. Feilner, M., Rich, S., & Jones, C. (2016). Automatic and directional for kids - Scientific background and implementation of pediatric optimized automatic functions. Phonak Insight, retrieved from www.phonak.com/evidence. |

Significantly better speech intelligibility in a SPiN program compared to Real Ear Sound

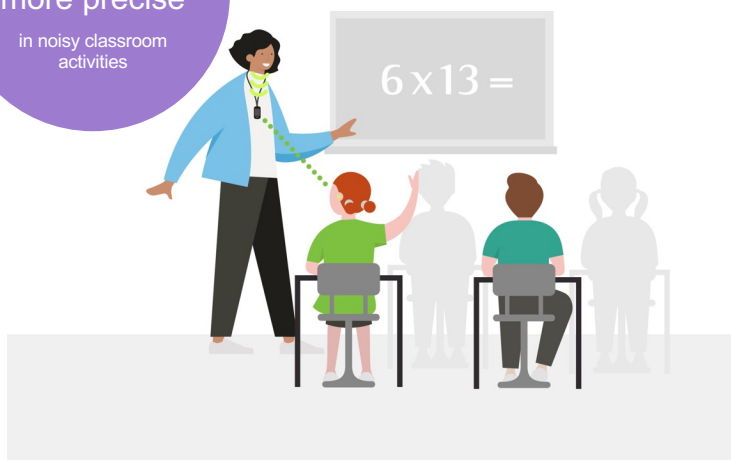


Wolfe, J., Duke, M., Schafer, E., Jones, C., & Rakita, L. (2017). Evaluation of Adaptive Noise Management Technologies for School-Age Children with Hearing Loss. *Journal of the American Academy of Audiology*, 28(5), 415–435.

AutoSense Sky OS classifies a child's day more accurately than AutoSense

30%
more precise

in noisy classroom
activities



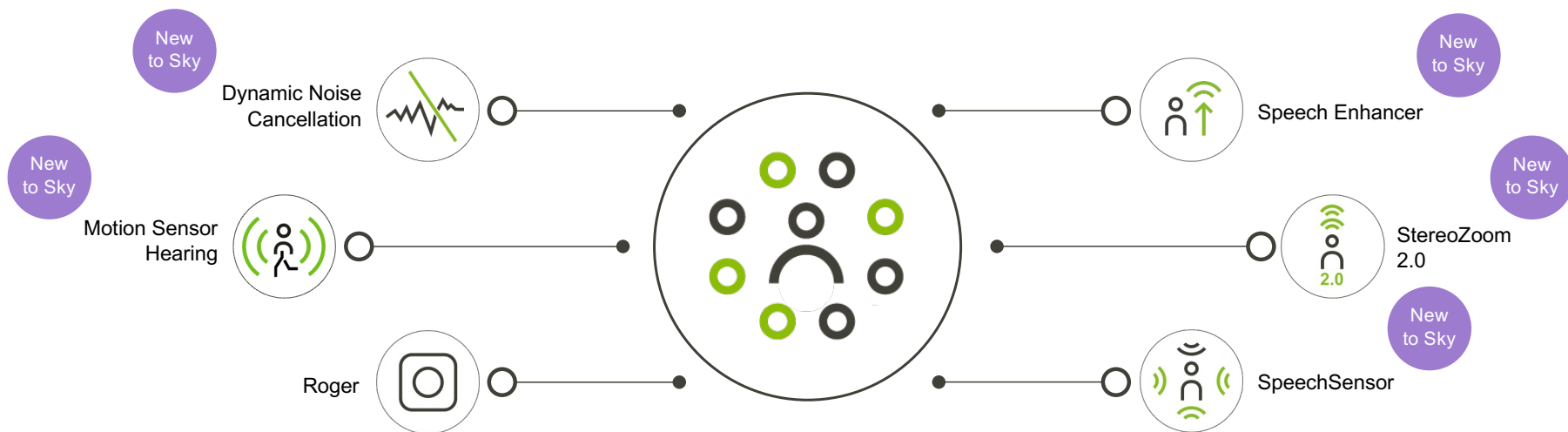
39%
more accurate

in recognizing yelling
and shouting as
unwanted noise



AutoSense Sky OS 5.0

Featuring Phonak SmartSpeech™ Technology



Speech Enhancer

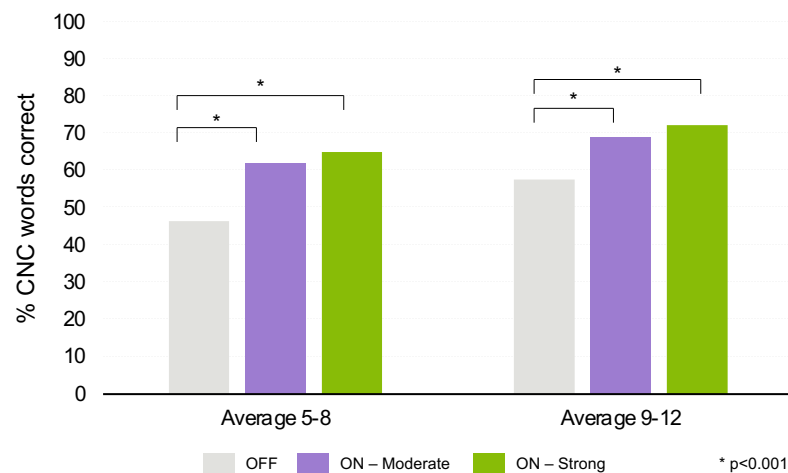
- Adaptive feature that is designed to enhance the peaks of speech in quiet situations
- More gain for speech in quiet while maintaining listening comfort and natural sound quality.
- Less listening effort



Benefit of Speech Enhancer for kids with mild–severe hearing loss



Speech Enhancer Off vs Moderate vs Strong 40dBA speech



Activating Speech Enhancer helps children understand more soft speech

Manning, J., Wolfe, J., Neumann, S., Nelson, J., & Dunn, A. (2023, May 11-13). The Use of Speech Enhancer with Pediatric Hearing Aid Users, [Conference Poster], 7th Phonak European Conference, Berlin, retrieved from www.phonak.com/evidence.

Dynamic Noise Cancellation

- Spatial noise canceller that works in combination with a directional beamformer to improve the SNR in noise up to 4 dB.
- Reduces noise from the back and sides
- Reduces listening effort
- Personalized in the myPhonak app



Dynamic Noise Cancellation—thoughtful application

- Turned off in Junior mode
- If DNC is “OFF” in Target, patients can still turn it on and adjust it in the myPhonak app



Motion Sensor Hearing

- Automatically steers the beamformer when walking in noise
- Reduces listening effort
- Patient preference for localization, sound quality



StereoZoom 2.0

- For focus on speech coming from the front
- 2.5 dB better SNR than StereoZoom 1.0
- 16% better speech understanding (compared to fixed directional)
- Decreased listening effort



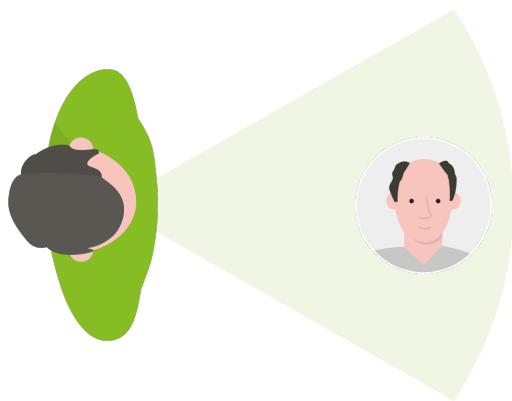
SpeechSensor

- Spatial speech detection algorithm, accurately detects the direction of the primary speech signal in noise.
- Improved SNR when speech is coming from the sides or back
- Reduced listening effort when speech is not in the front as compared to SZ2.0.

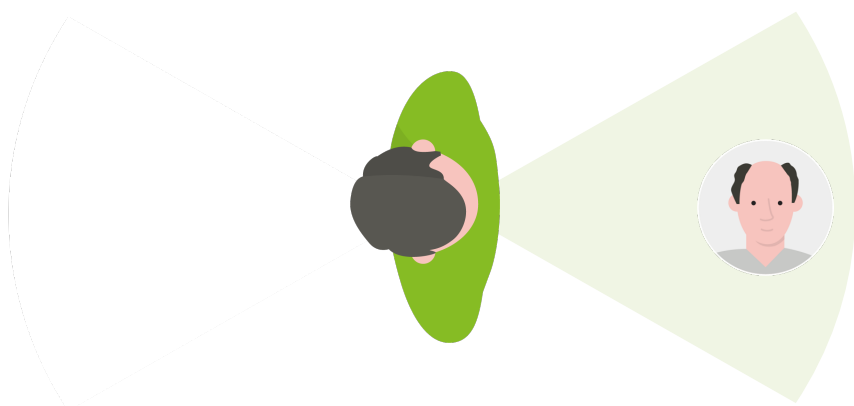




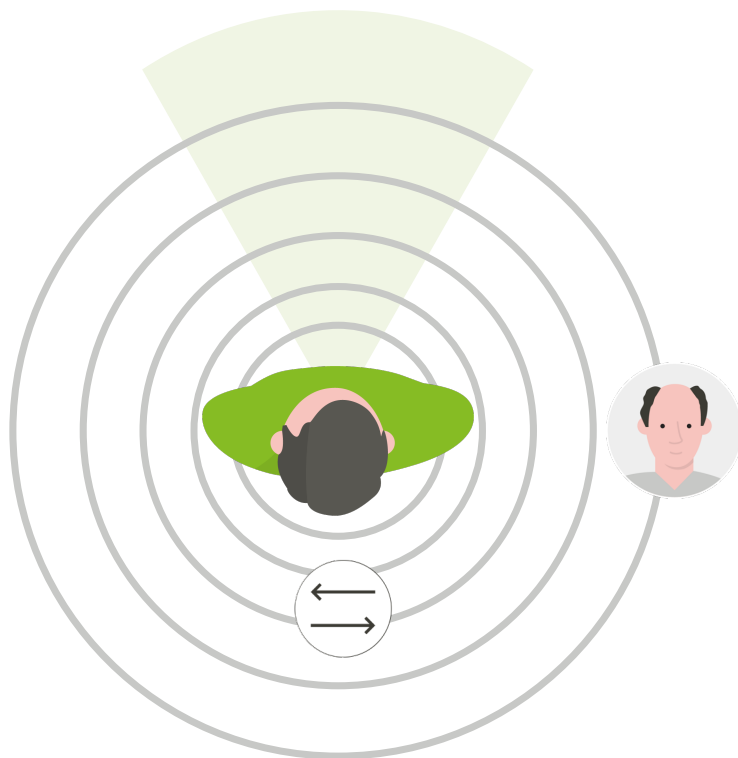
SpeechSensor: Accurate detection of speech



SpeechSensor: Accurate detection of speech



SpeechSensor: Accurate detection of speech



- 1 Monitor noise level, Signal-to-noise ratio and direction of loudest speech signal.
- 2 Hearing aids exchange information.

SpeechSensor: Accurate detection of speech



- 1 Monitor noise level, Signal-to-noise ratio and direction of loudest speech signal.
- 2 Hearing aids exchange information.
- 3 Decision made based on information on which direction main speech is coming from.
- 4 ASOS 5.0 activates the most appropriate beamformer setting based on direction of speech.

SmartSpeech Technology defaults for pediatrics



Features	Default
 Speech Enhancer	Moderate*
 Dynamic Noise Cancellation	Off**
 Motion Sensor Hearing	Wide
 StereoZoom 2.0	Age-dependent feature

* Based on Speech Enhancer study

** Dynamic Noise Cancellation study results pending

Roger

- *Adaptive* remote microphone technology that bridges the understanding gap by wirelessly transmitting the speaker's voice directly to the listener.
- Unique in its adaptive behavior to keep a positive SNR
- Speech understanding in noise and over distance
- 61% Improved speech understanding in a group conversation with MultiBeam technology compared to hearing aids alone



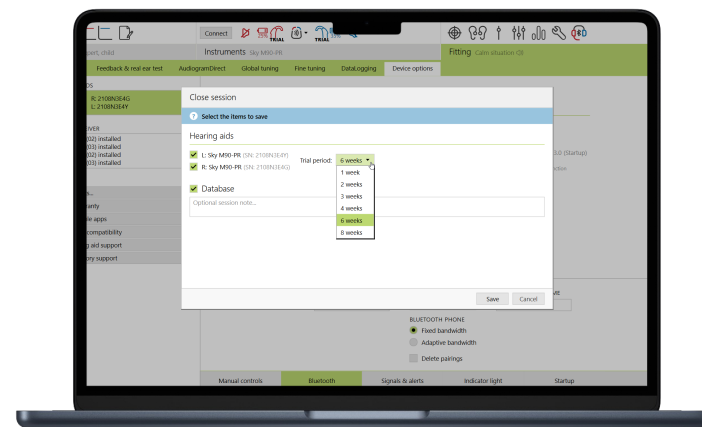
Greater flexibility with Trial devices to support each family's needs

1

All Trial devices come with permanent Roger licenses installed

2

Ability to choose length of trial period within the fitting session



Benefits of Roger with kids

At least
32%

better speech understanding
compared to hearing aids alone¹

5,300
more words per day²

12%
more child-directed speech³

Kids appear to be
**Alert, Engaged
& Attentive⁴**

Better
receptive discourse skills⁵

Significantly better access to both quantity and quality of language

1. Wolfe, et al., (2021), 2. Benitez-Barrera, et al., (2018), 3. Bacic & Tharpe (2019), 4. Thompson, et al., (2020), 5. Curran et al., (2019).



How does this help the family?

8

Weeks maximum for
the a trial period

56

Days' use for a baby
that has one nap per
day

Life
style

The trial length can
suit the family's
lifestyle and your
business needs.

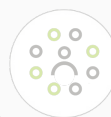
Options

Can be reset with
Remote Support

A Lumity solution for pediatrics



50 years of commitment to
pediatric solutions



Speech understanding
with innovative technology



Connectivity



Designed for young users



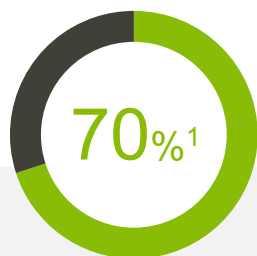
Connectivity for all



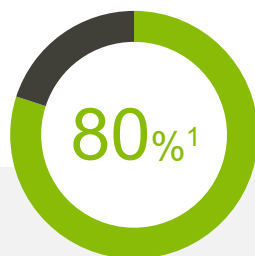


Connectivity and well-being

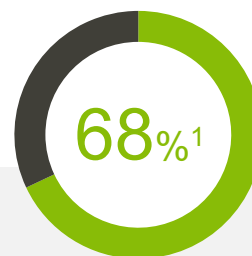
What do teens aged 13–17 years think about being and socializing online?



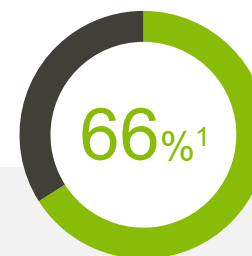
Feel closer to
their friends



Use online services
to support their
well-being



Watch online videos
for relaxation



Watch online
videos to make
them feel happy

Using the internet to socialize with others online is considered to have a positive impact on well-being²

1. OFCOM (2022). Children and parents: media use and attitudes report 2022. <https://www.ofcom.org.uk/research-and-data/media-literacy-research/childrens/children-and-parents-media-use-and-attitudes-report-2022>. | 2. National Deaf Children's society (2020). Emotional well-being in deaf children and young people, and their families. https://www.ndcs.org.uk/media/6198/emotional_wellbeing_literature_review_2020.pdf.

Connectivity and empowerment

Self-advocacy

Ability to **communicate** what your needs are¹

Expanded self-advocacy

Taking control and creating change²

Empowerment

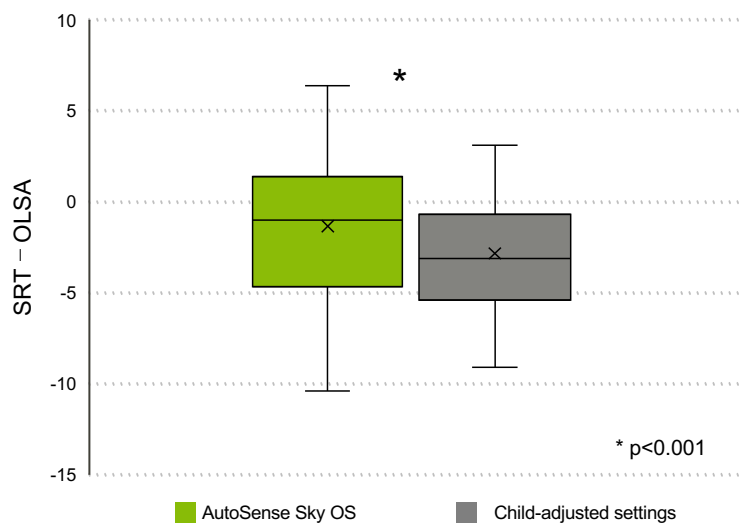
Must involve real-world evidence³



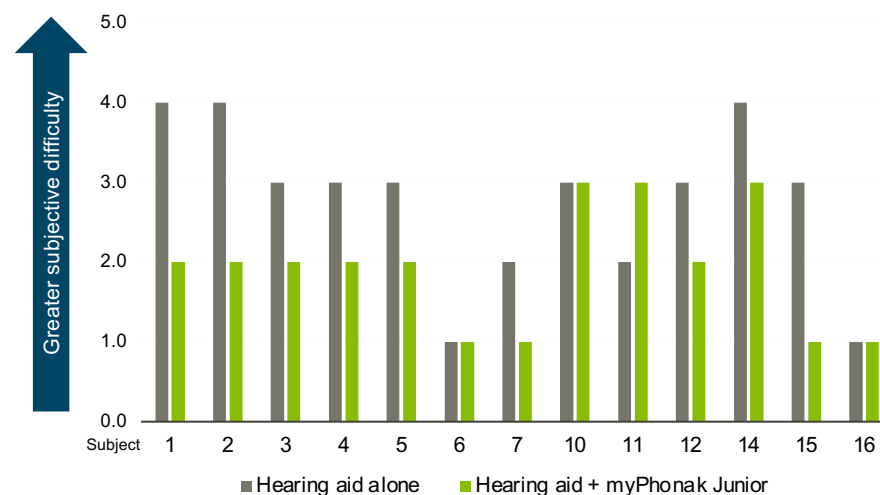
1. Self-Advocacy: What It Is and Why It's Important | Understood | 2. Impact | Volume 24, Number 1 | Social and Emotional Well-being of Children and Youth with Disabilities: A Brief Overview | Institute on Community Integration Publications (umn.edu) | 3. How to Attain Real Personal Empowerment | Psychology Today

Key insights from myPhonak Junior study University of Mainz, 2023

Comparison SRT AutoSense Sky OS with child settings



Children as young as 11 found listening in challenging situations to be easier when using myPhonak Junior in real world



Optimizing pediatric fittings



How Phonak Target can support your pediatric fittings

DSL fitting ranges

Fitting range now shown with DSL and APD/NAL

Tamper-proof

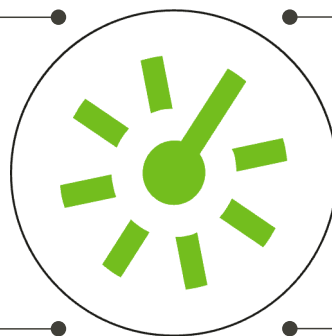
Additional acknowledgement of tamper-proof solution before proceeding with fitting

Client view

A great counseling tool for parents, caregivers, and teens

Over-tuning

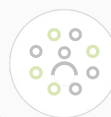
Can now be adjusted in 3 dB and 1 dB steps



A Lumity solution for pediatrics



50 years of commitment to
pediatric solutions



Speech understanding
with innovative technology



Connectivity



Designed for young users



Sky Lumity: Pediatric design

- AutoSense Sky OS 5.0
- StereoZoom 2.0
- Speech Enhancer
- SpeechSensor
- Dynamic Noise Cancellation
- Motion Sensor Hearing*
- RogerDirect™

- CROS L-R compatible*
- Tap Control*



- Universal Bluetooth® connectivity
- myPhonak Junior app
- Wearing time and Remote Support

- Robust and reliable housing
- Stylish color range
- Tamper-proofing options
- LED Visual Indicator
- Pediatric workflow

*Sky L-PR only

A hearing solution that meets the needs of each child





Together,
we change lives ●