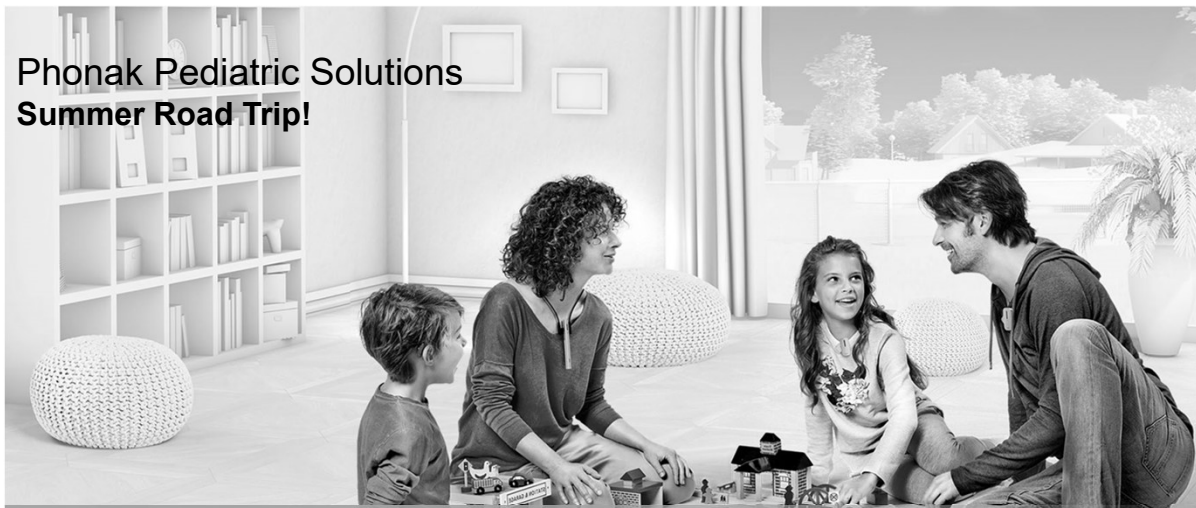


Phonak Pediatric Solutions Summer Road Trip!



#WeAreChargedUp

#WeArePhonakUS

A Sonova brand

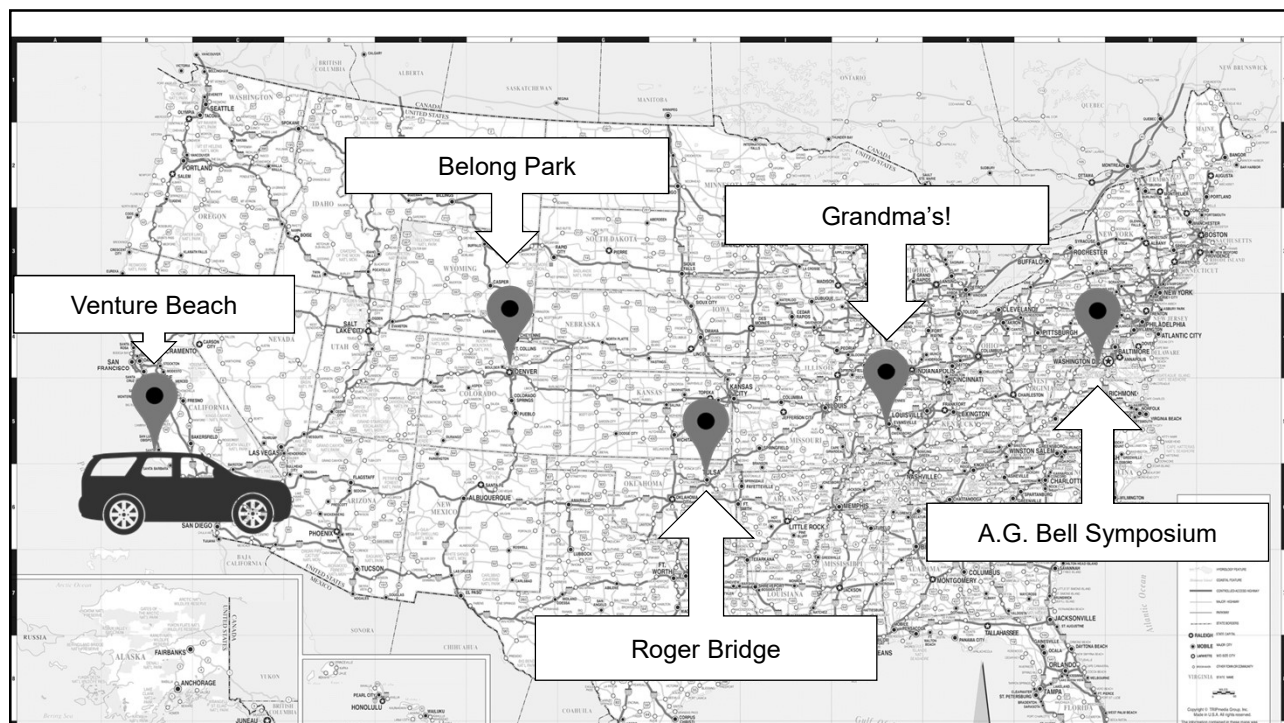


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Buckle up for our Summer Road Trip!

- –Venture Beach
- –Belong Park
- –Roger Bridge
- Grandma's!
- –AG Bell Symposium





First Stop: Venture Beach

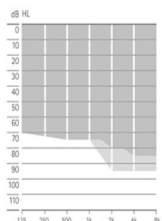
Sky V hearing aids



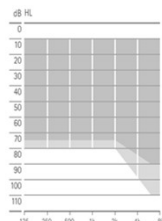
Comprehensive pediatric portfolio - 5 models



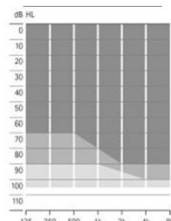
Sky V-M



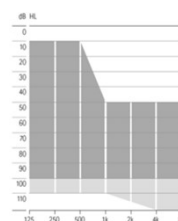
Sky V-P



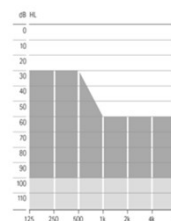
Sky V-RIC



Sky V-SP



Sky V-UP



Battery size

■ SlimTube HE
■ Regular Tube

Comprehensive pediatric portfolio - 3 performance levels

	90	70	50
EchoBlock	•		
UltraZoom Premium	•		
20 fitting channels	•		
Speech in Wind	•		
StereoZoom	•	•	
SoundRelax	•	•	
SNR-Boost	•	•	•
FlexControl	•	•	•
Flex Volume	•	•	•
DuoPhone	•	•	•
WhistleBlock	•	•	•
NoiseBlock	•	•	•
QuickSync	•	•	•
SoundRecover2	•	•	•
IP68 Rating	•	•	•
Indicator Light	•	•	•



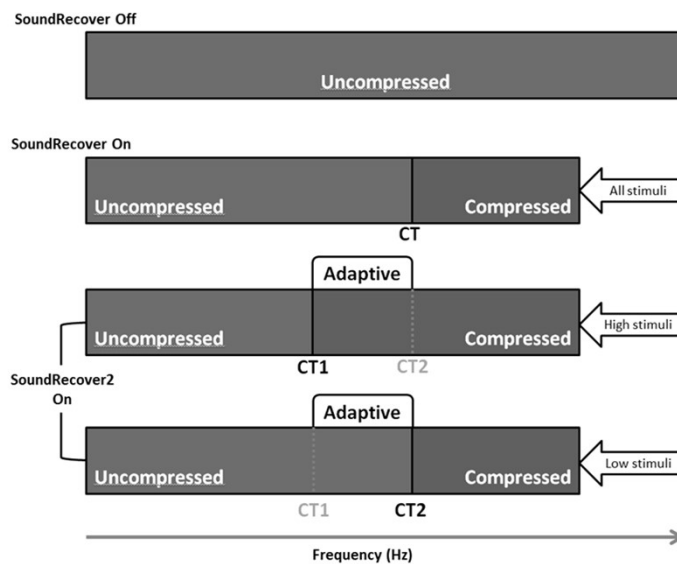
With IP68 rating, blogger DaddyKnott can take his son to a beach wedding with no problem!
#cute #chins #deafkidsrock

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SoundRecover vs. SoundRecover2



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Start up default programs

Setting	0-3 years	4-8 years	9-12 years	13-18 years
Startup	Roger/DAI+M	Roger/DAI+M	Roger/DAI+M	Roger/DAI+M
AutoSense Sky OS	Disabled	Disabled	Enabled	Enabled
Roger and directional	Omni	Real Ear Sound	Fixed directional	Fixed directional
Indicator light	Enabled	Enabled	Disabled	Disabled
Push button	Disabled	Disabled	Enabled	Enabled
Volume control	Disabled	Disabled	Enabled	Enabled
RogerReady	Enabled	Enabled	Enabled	Enabled

9

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Roger and Directional - **Omnidirectional**

- ☒ 0-3 Age group
- ☒ Hear from all around for incidental listening
- ☒ No changes from Sky Quest
- ☒ Recommended for infants and those with poor head control



#firsttriptothebeach #heardthewaves #lifeison

10

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Roger and Directional - **Real Ear Sound**

- ✓ 4-8 yr old age group
- ✓ Hear from all around for incidental listening
- ✓ Essentially omnidirectional with small amount of directionality
- ✓ Helps with localization
- ✓ Helps with attenuation of high frequency sounds




#endlesssummer #wavescrashing #lifeison

11

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Roger and Directional - **Fixed Directional**

- ✓ 9-18 yr old age group
- ✓ Fixed null point allows her to hear her friends from the side
-  Real Ear Sound is the default in quiet
- ✓ Fixed directional is automatically activated based on two parameters:
 - ☐ ~50% Speech in Noise classification is detected
 - ☐ Ambient noise level exceeds a moderate level



#campingwithfriends #firecrackle #lifeison

12

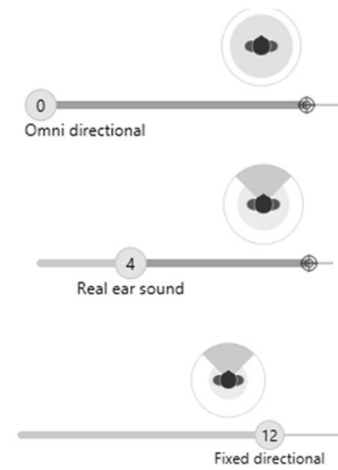
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Roger and Directional



Three microphone modes:



13

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Roger DM test scenes

Teacher and peer talker in noise (65/65)



Peer talker from behind in quiet



N= 15

14

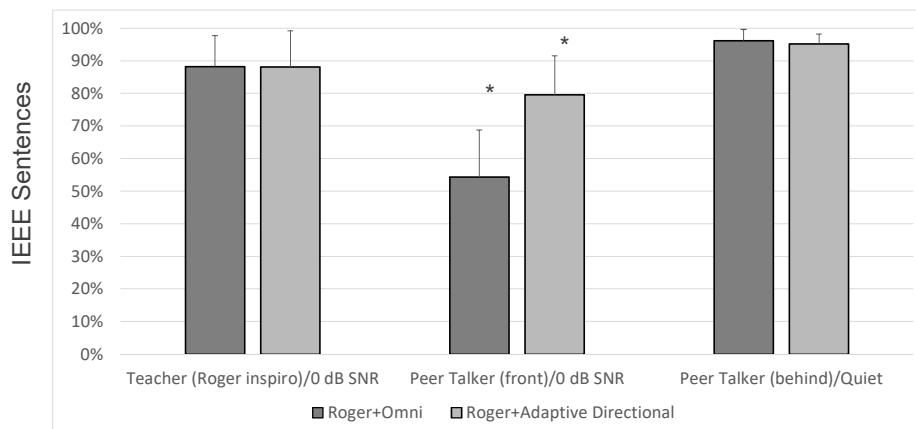
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Wolfe, Jones and Rakita (2016)

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The adaptive directional mic significantly improves understanding of peers

Greater than 25% improvement in speech recognition for sentences!



Error bars = 1 S.D. $p=.003$

N=15

PARC
Phonak Audiology
Research Center

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15 7/31/17 Wolfe, Jones and Rakita (2016)

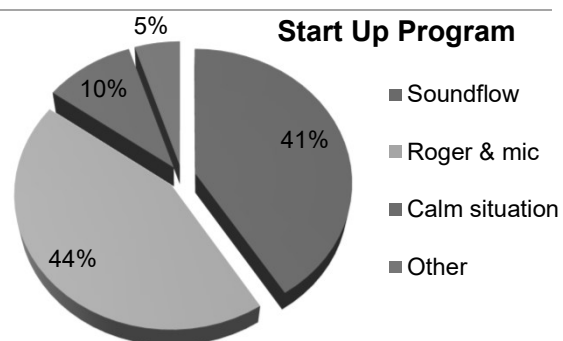
Trade offs with past technology

Roger/DAI+Mic

- Start up in Roger
- Omni directional
- Never miss Roger signal



Start Up Program



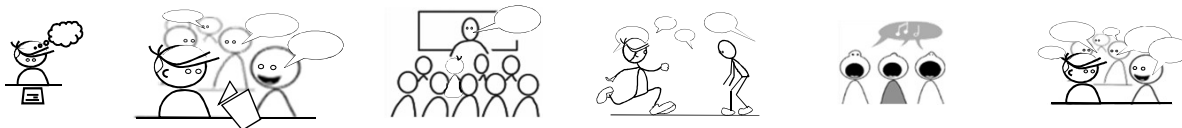
Soundflow

- Start up in SoundFlow
- Directional microphones
- May forget to press button

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The listening environment of school-age kids constantly change



Greater need for performance
with speech in noise and comfort in noise

17

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Phonak Insight, April 2016

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Without Phonak's Industry-Leading AutoSense Sky OS...

Children would struggle
to interact and understand



Group and interactive lessons
are the most difficult situations
to understand peers



Exciting activities
commonly cause discomfort

1/3
of the school day

18

7/31/17

Phonak Insight, April 2016

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AutoSense Sky OS

for the soundscapes of a child's life



30%

more precise
Speech in Noise classification

*Sky V activates directional
microphones more often and
at lower noise levels*



39%

more precise
Comfort in Noise classification

*Sky V accurately recognizes
yelling and shouting as
unwanted noise*

19

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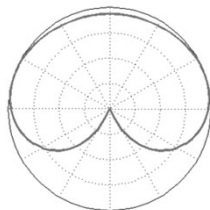
Phonak Insight, April 2016

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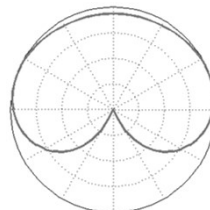
Benefits of mic modes

– Roger and Directional

Fixed directional beamformer



– AutoSense Sky OS



UltraZoom



20

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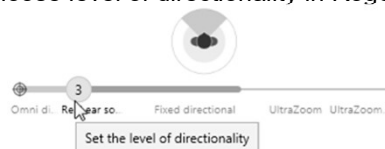
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Fitting flexibility

- Choose start up program
Roger/DAI + Mic or AutoSense Sky OS



- Choose level of directionality in Roger program



Key Point:

No matter your fitting philosophy,
this is truly the best of both worlds.

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What if I want it all?

AutoSense Sky OS

- automatic program
 - designed for their lives
 - helps improve understanding during noisy classroom activities
 - improves comfort in yelling

and

Roger and Directional

- directional microphones
- improves SNR for teacher's voice and peers



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RogerReady - Automatic activation of Roger

Transmission from the Roger microphone activates the Roger program

Automatic switching into the Roger program occurs in <400ms

Switching out of Roger program occurs after ~50 seconds of no transmission

Available in AutoSense Sky OS and also in startup program

RogerReady now enabled by default for all Junior mode fittings in Phonak Target

100%
of the
time!

23

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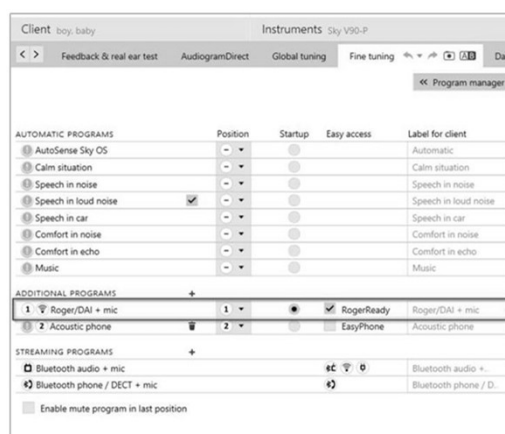
RogerReady

- 1 The Roger/DAI + mic program is always in Target's program structure and cannot be deleted by accident
- 2 No additional programming required
- 3 Automatic activation of the Roger/DAI + Mic program



Key Point:
Sky V is ready for Roger as soon as the child is!

Roger/DAI + mic in Target



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Automatic noise management technology for children



Inspired by research of Manuela Feilner that resulted in automatic scene classifier designed for children

Study: Automatic Noise Management Technology for Children



n= 15 children

Ages 9 -14 y.o.
(mean = 12 y.o.)

Moderate to severe
hearing loss / Pure Tone
Average (Better Ear):
53.9 dB HL

Compared performance across three conditions



Calm
(Real Ear Sound)



Automatic program
(AutoSense OS)



Manual mode
(Speech in Noise)

Study: Automatic Noise Management Technology for Children, *cont.*



Phonak Audéo V90 hearing aids fitted to DSL v5.0 target



Children wore hearing aids for 2-4 weeks with calm program or automatic program via pushbutton

Conducted in three phases

1

Speech recognition in noise across three technology conditions

2

Four week real-world trial with journaling to capture technology preference in everyday use

3

Speech Intelligibility Rating Index

27

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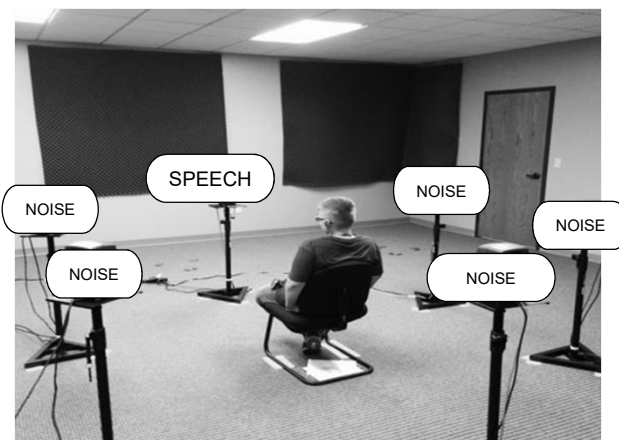
Wolfe et al, in press, JAAA

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Study: Phase 1, set up

1 *Speech recognition in noise across three technology conditions*

- Study performed in a real room
- AzBio Sentences and classroom noise
- Four acoustic situations
 - **Speech in Noise** 60 dBA/Noise: 55 dBA (+5)
 - **Speech in Loud Noise** 72 dBA/Noise: 70 dBA (+2)
 - **Car** 55 dBA/Noise: 50 dBA (+5)
 - **Quiet Speech**: 60 dBA
- Three hearing programs
 - Calm
 - Manual Speech in Noise
 - AutoSense OS



28

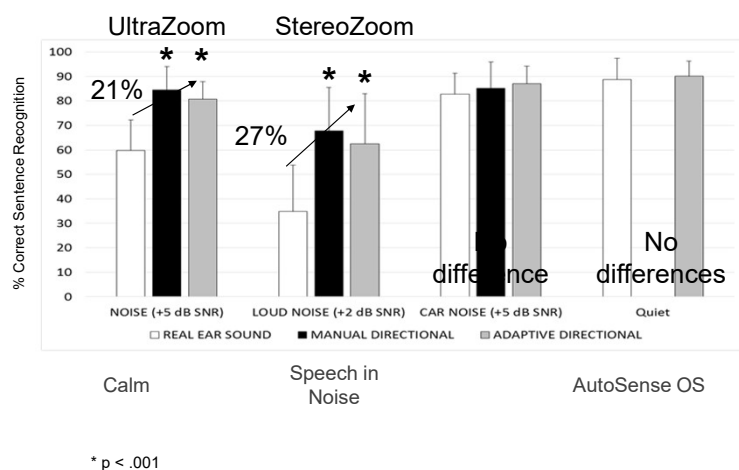
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Wolfe et al, in press, JAAA

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Study: Phase 1, test session 1 results

1 Speech recognition in noise across three technology conditions



Test Session 1:

Examined effects of directional technology when the talker is **in front** of the listener

Key Points:

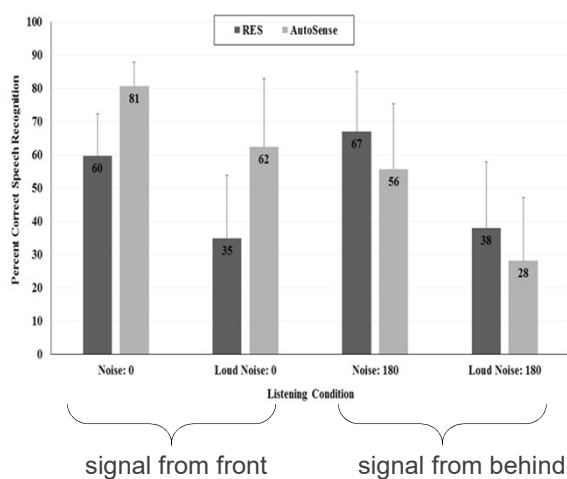
- Children listening in noise did better using a directional microphone rather than an omnidirectional one.
- Children did equally well with an automatic or pushbutton program.
- Children listening in quiet had no detriment comparing calm to AutoSense OS.

29 7/31/17 Wolfe et al, in press, JAAA

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Study: Phase 1, test session 2 results

1 Speech recognition in noise across three technology conditions



Test Session 2:

Examined effects of directional technology when the talker is **behind** the listener (speech at 0 vs. 180° azimuth)

Session 2 Results:

- Speech at 0 better than speech at 180
- AutoSense OS better than Calm for in the speech at 0 condition
- Calm better than AutoSense OS in 180 conditions

Key Points:

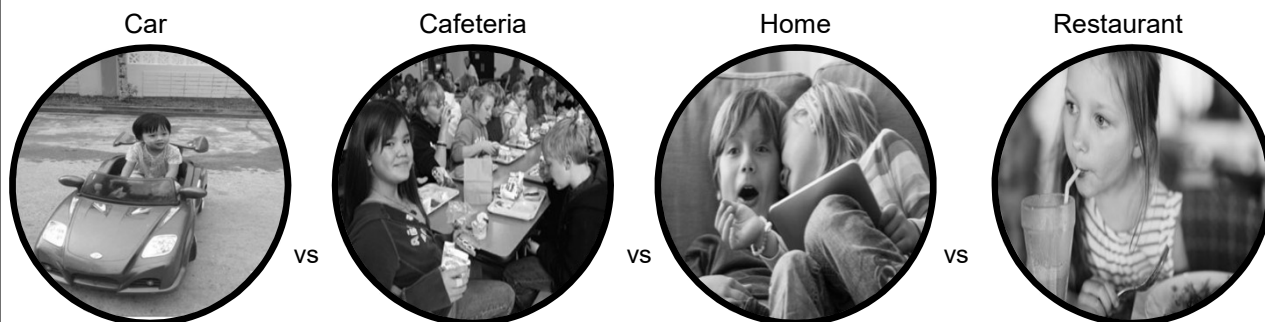
- Speech in noise better from front with directional mic.
- Small decrease in recognition from behind in noise

30 7/31/17 Wolfe et al, in press, JAAA

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Study: Phase 2, measuring adaptive directional mics in various situations

2 Real-world trial with journaling to capture technology preference in everyday use



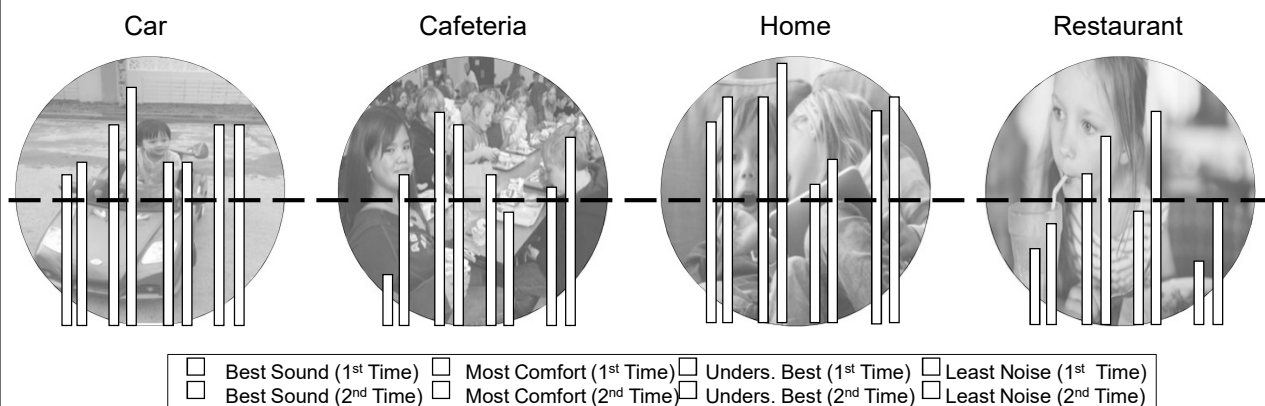
Across 4 environments with 4 qualitative factors, children preferred the AutoSense OS setting over Calm.

31 7/31/17 Wolfe et al, in press, JAAA

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Study: Phase 2, measuring adaptive directional mics in various situations

2 Real-world trial with journaling to capture technology preference in everyday use



Results Interpreted:



- Positive number equal preference for AutoSense OS
- Negative number equal preference for Calm program
- Two trials per condition



Key Point:

- Most participants preferred AutoSense OS (positive ratings) over Calm

Study: Do adaptive directional mics “work” for children?”

- Research conclusively shows that they can improve speech recognition in noise when the signal arrives from the front
- They may degrade speech recognition for signals arriving from behind (Ching et al., 2009; Ricketts & Galster, 2007)
-  But our most recent research suggests the benefits may outweigh the detriments when designed for school age use
- There is no evidence supporting their efficacy for infants and young children
-  More research is needed!

Review: An evidence-based systematic review of directional microphones and digital noise reduction hearing aids in school-age children with hearing loss.







- Speech recognition
- Directional microphones were more effective than omnidirectional microphones with speech directly in front and noise directly behind.
- Omnidirectional microphones were more effective when speech was not in front.
- Self- or parent-report
- Children preferred directional microphones over omnidirectional microphones for the majority of situations in one study.
- No differences between the two microphone types in another study.

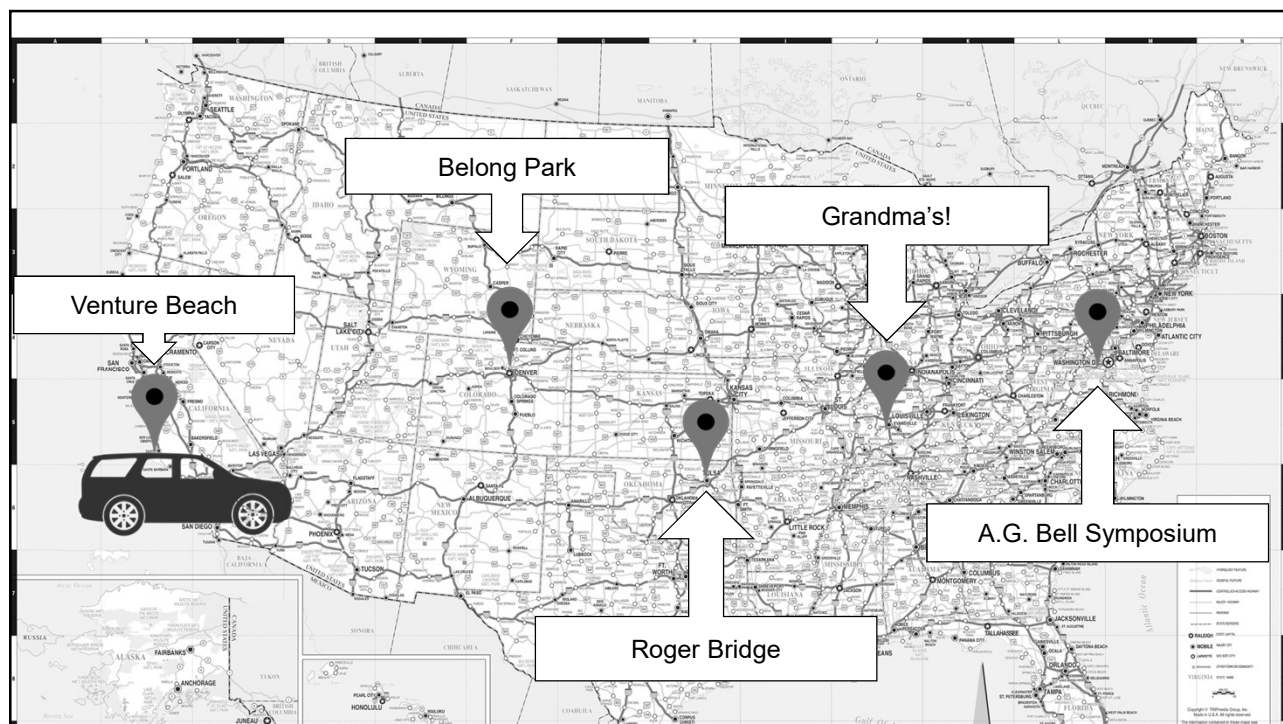
Guidelines: American Academy of Audiology. (2013). Clinical practice guidelines on pediatric amplification.

- Outcomes:
 - Directional microphones provided benefit in school environment if the child faced the signal .
 - Resulted in greater difficulty when the target signal was behind the listener.
 - Benefits from a directional microphone were smaller than those obtained with FM.
- Recommendations:
 - Technology that automatically switches the microphone between directional and omnidirectional modes of operation should be considered
 - Professional is responsible for understanding how the adaptive program functions as well as where it will be appropriate.

Sky V summary



-  Tamperproof solutions
-  IP68 rating
-  Flexible fitting range
-  Fun colors and indicator light
-  AutoSense Sky OS with RogerReady
-  Roger and Directional



- Next stop:
Belong Park

Phonak Belong

#wearechargedup



Introducing Belong!

Comprehensive RIC or BTE portfolio offers

- SoundRecover2
- RogerReady and Roger Directional in Bolero and Audéo B 90/70/50-13
- Size 13 battery uses Roger 18
- **Rechargeable battery option available**

24 hours of battery life in 1 charge!



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Built-in lithium-ion battery

- Encapsulated to protect from moisture and dust
- Ensures battery reliability
- Increases lifetime of the hearing aid
- No deterioration after years of charging

Power management

- Regulates the Lithium-ion voltage
- Improves battery capacity
- Maintains state of charge
- Prevents battery from overheating
- Protects the battery



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Phonak Power Pack



- Easily attached to the Phonak Charger Case
- Ideal for short trips where no power source is available

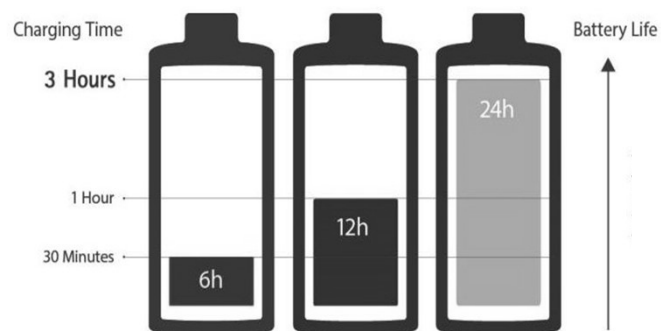


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The quickest charging rechargeable BTE hearing aids

- **Fully charged in just 3 hours!**
- **24 hours*** of hearing with one simple charge
- **Easy handling**, no more hassles of disposable batteries



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Battery life: Hours of use

- Up to 80 minutes media streaming
– 24 hours*
- 5 hours of audio/media streaming
– 20 hours
- 10 hours of audio/media streaming
– 16 hours



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How to access Roger with Rechargeable

Complot II with Roger X

- Wireless streaming connection for hearing aids
- Can provide Roger access to size 10 and 312 battery
- Ready out of the box, no software needed
- Press home button to accept Roger signal
- Roger MyLink with Bolero B-PR and telecoil



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Things to remember



- Devices are sent to you in "sleep" mode
- To "wake" the devices, simply insert into a charger for 2 seconds
- Devices are shipped with a partial charge. We recommend charging prior to fitting



- iCube II is required to program these devices
- Be sure to turn the devices on (long press of the push button, the LED light will blink 1x) before connecting to iCube II

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What's the difference?



	Sky V	Bolero B-PR	Audéo B-R
Rechargeable		●	●
T-Coil	●	●	
Push Button	●	●	●
Volume control	●	●	●
RogerReady	●		
CROS II/B compatible	●		
IP68	●	●	●
AutoSense Sky OS	●		
Tamperproof ear hook	●		
Fun colors	●		
Indicator light	●		



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Belong summary



- ✓ Rechargeable battery
- ✓ Flexible fitting options
- ✓ RIC or BTE
- Long battery life for active day
- Can use Compilot II
- ✓ Many charging options

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Introducing the super discreet



Phonak Virto™ B-Titanium

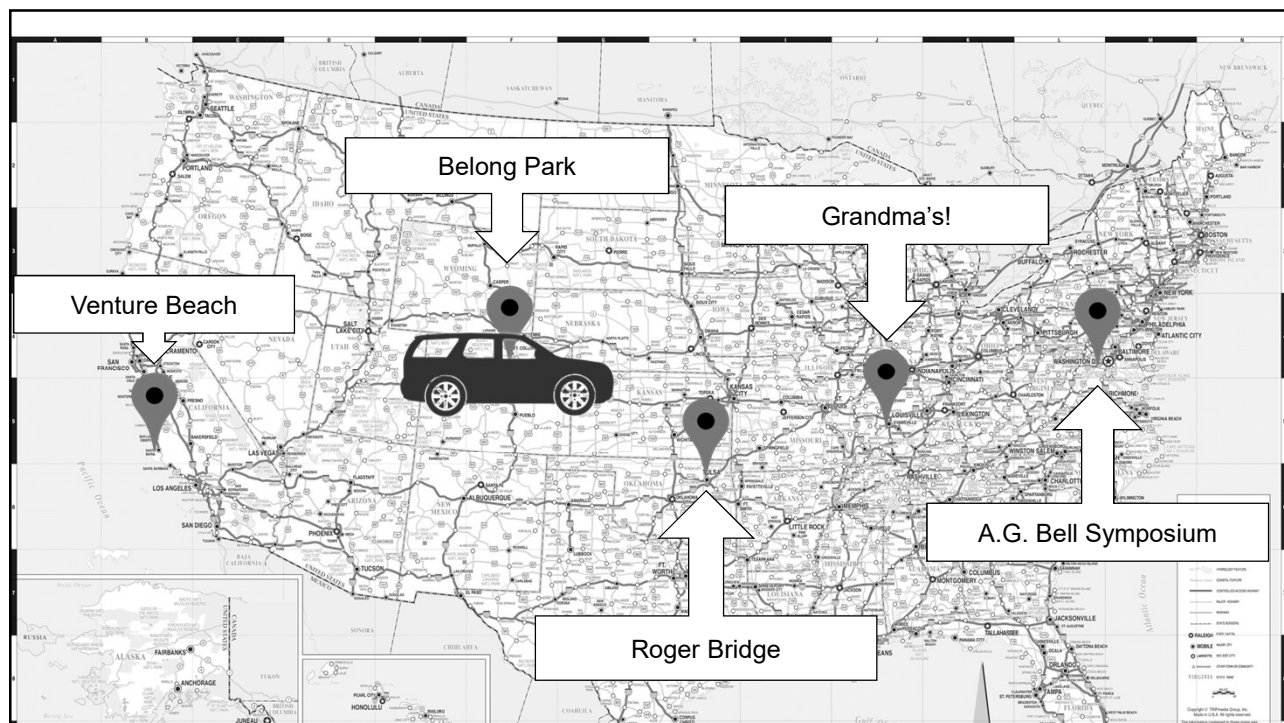
High-tech titanium custom hearing aids

- The **smallest** Phonak custom products ever
- Made from **medical grade titanium** using sophisticated 3D printing technology
- **Great alternative to Lyric!**
- Up to 26% smaller thanks to
 - 50% thinner shell
 - Smaller electronics

48 7/31/17

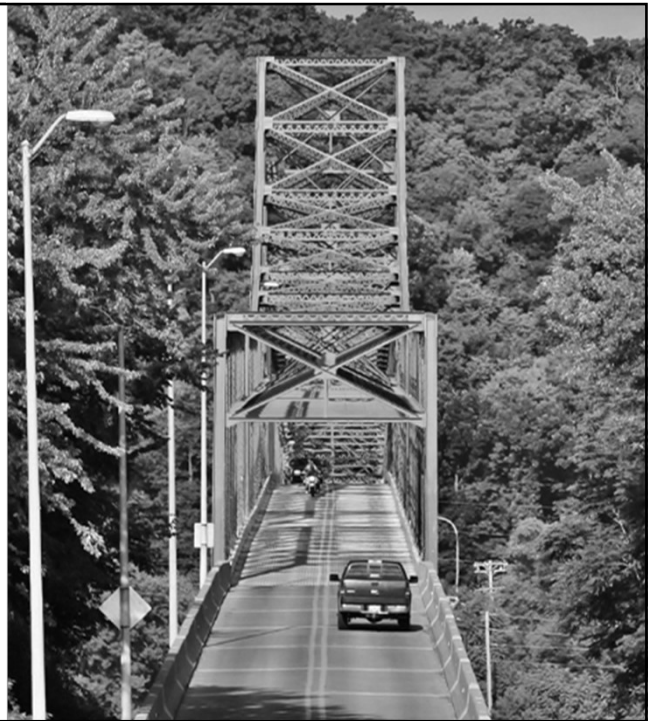
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Questions?

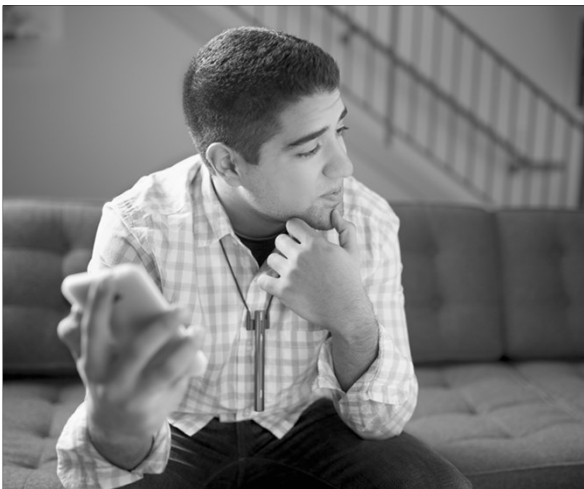


- **Third Stop:
Roger Bridge**

**Roger - Bridging the
understanding Gap
since 2013!**



Roger Pen



Built-in accelerometer

Watch videos and listen to music in the car

Hands free and headset Bluetooth protocol for phone calls

Children live in a noisy world!

Poor SNR in children's
every day environments

- **Car seat** (70 mph): -10 dB SNR
- Can't see parent
- Soothe the baby with mom's voice



Key Point:

Use in situations in which the child has no chance to hear without using a remote mic

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Roger Touchscreen: Small Group mode

- Great for family discussion.
- Automatically activated by accelerometer
- Intelligent microphone system responds with a highly directional rotating beam
- Focuses on the voices of those in the group for improved engagement and participation
- Connect both kids!



Key Point:

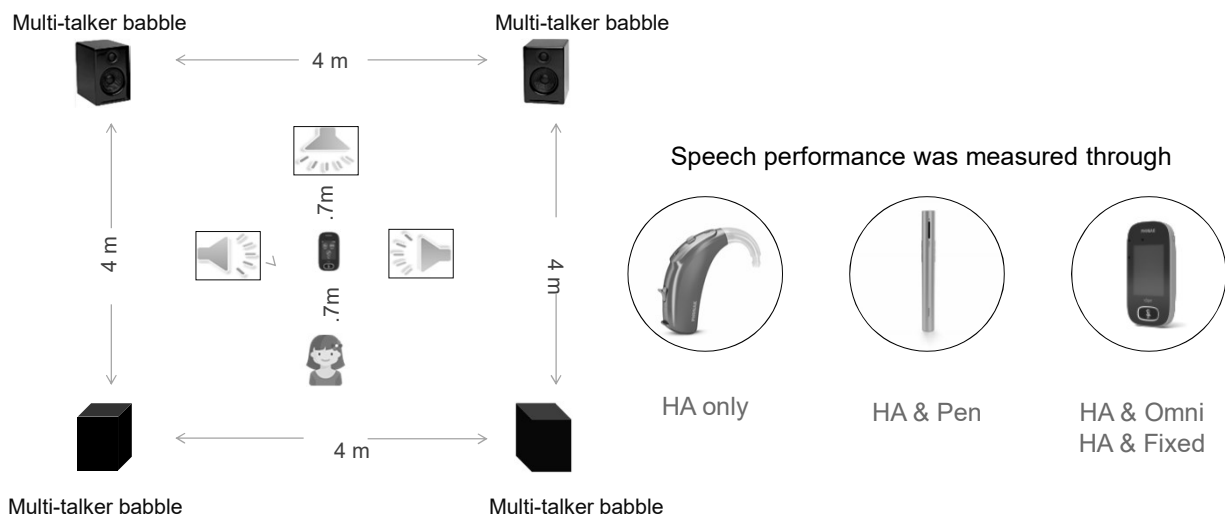
Help both kids participate in the conversation with small group mode.

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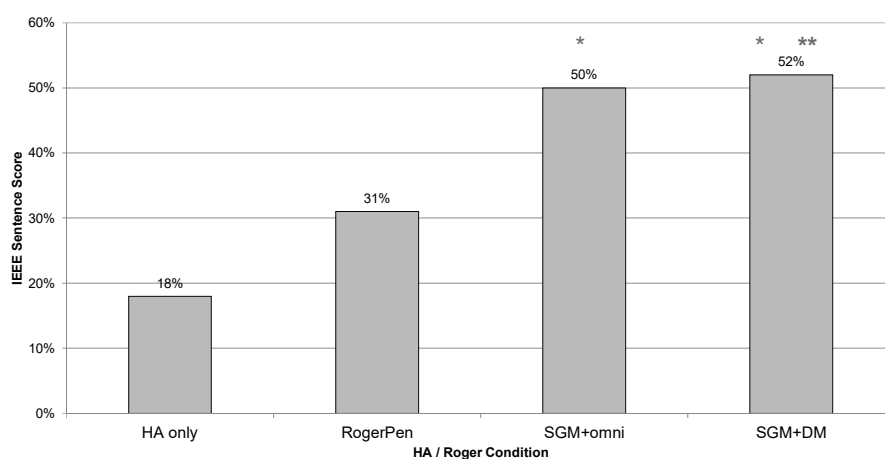
Study: Speech perception testing



55 7/31/17 Wolfe, Jones and Rakita (2016)

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Study: Speech perception results show significant improvement with Roger Touchscreen small group mode



* Significant improvement compared to HA only

** Significant improvement compared to HA+Roger Pen

$p = < .05$

56 7/31/17 Wolfe, Jones and Rakita (2016)

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Evidence to support Roger over Remote mic

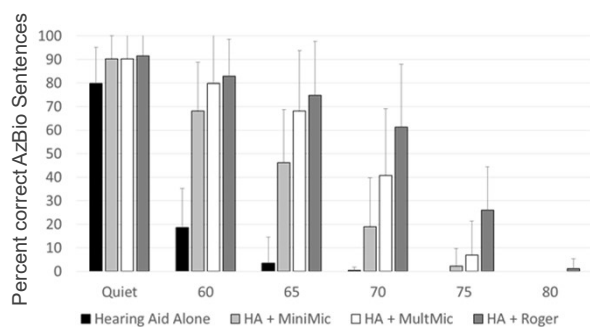


Why do families use Roger?



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Why did we choose Roger Touchscreen?



- ✓ Easy connection and disconnection
- ✓ Small group mode great for family time
- ✓ No button pressing at hearing aid
- ✓ Best sound quality



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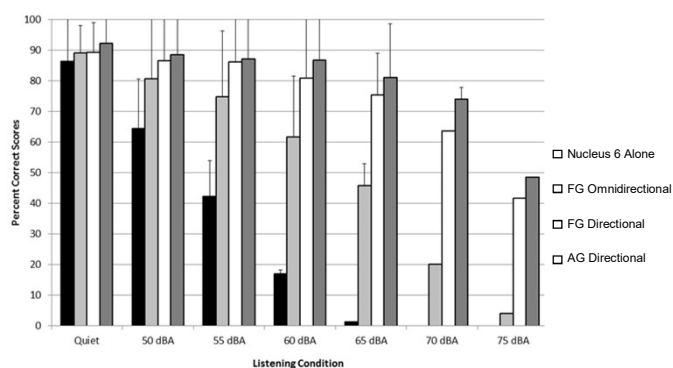
59 7/31/17 Wolfe et al, in press, JAAA

How do we know what remote microphone accessory is the best with N6?

Consider ease of use differences

Automatic activation

Automatically disconnects after 5 min



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60 7/31/17 Wolfe et al, in press, JAAA

A Roger system for every need

Multiple transmitter and receiver choices

- Compatible with multiple amplification technologies and hearing aid brands



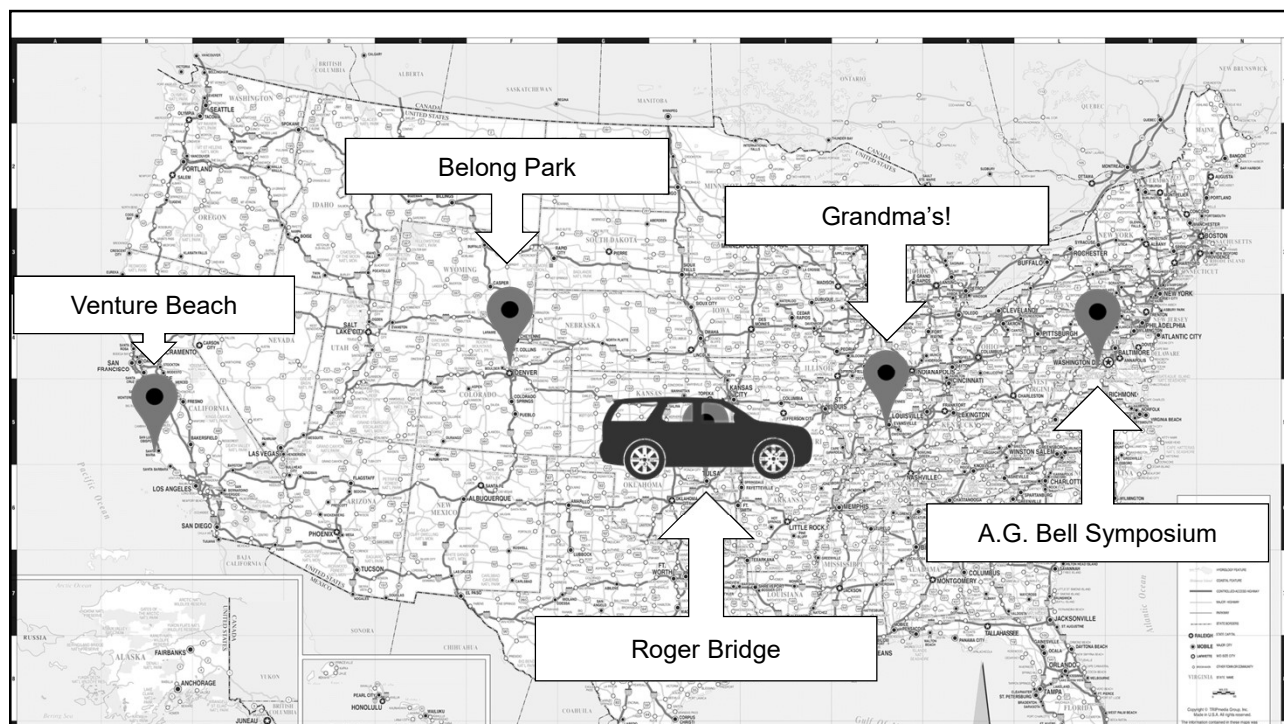
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Questions?





● **Grandma's!**

Unilateral Hearing Loss



CROS II BTE choices

CROS II-13



CROS II-13 with
CROS Hook

CROS II with
SlimTube

CROS II-312



CROS II-312
with SlimTube

CROS II-312 with
CROS Tip

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Easy and comfortable receiver

Push button volume control

312 battery
on & off

Ready-to-wear design

66

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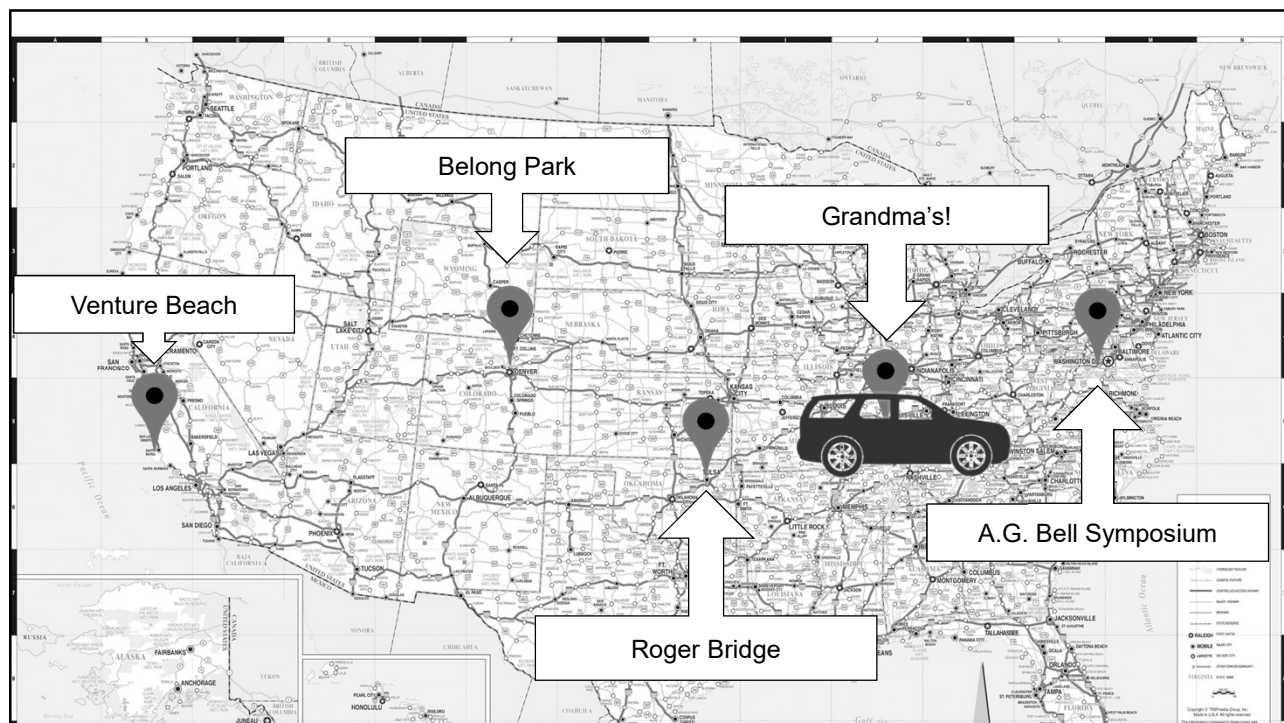
• Join Us:

- 2017 Unilateral Hearing Loss in Children Conference
- October 22 – 24 in Philadelphia
- Register Today!

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● Last Stop:

**Arlington
(AG Bell Symposium)
Phonak Support**



Phonak support
overview

Professional tools

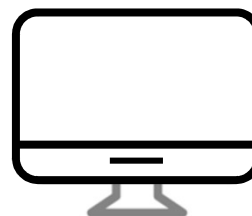
- Counseling
- Product and best practice guides
- Marketing support for clinics

Tools and support for families

- Leo: stories, stuffed animals and activities for young patients
- Teens: tools to plan for careers and college

Hearing loss communities

www.hearinglikeme.com



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Product and best practice guides

www.phonakpro.com



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Leo's world

www.phonak.com/drawingleo



Helping children explore the world
with Leo

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Leo's world

www.phonak.com/drawingleo



Download the template
www.phonak.com/drawingleo



Submit drawing and consent form
by September 1st, 2017



E-mail to susanne.wenger@phonak.com

Results announced on September 21st, 2017.
There will be 12 winners.



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Support for teenage patients

www.phonak.com



Assessments >

Self-advocacy >

Parent support >

Laws & funding >

Technology >

Useful resources >

Planning guide for teens with hearing loss
This guide helps to prepare teens and young adults with hearing loss for the transition to college, university or the workplace.



www.bringstoundtolife.com

Being a teen with hearing loss

Don't let hearing loss hold you back. Explore the world with confidence.

- Playing sports
- World of music
- Real Stories

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Hearing loss community

www.hearinglikeme.com



7 Tips for Travelling with a Deaf or Hard-of-Hearing Child

As much as I love traveling abroad, it can be a daunting experience taking a toddler or child on a plane to another country – **even more daunting if you're travelling with a deaf child.** However, there are things that you can do to ensure your trip runs smoothly, so that you and your little one feel comfortable.

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Thanks for coming on our Summer Road Trip!

**Together,
we change lives**