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Meet Unique Needs with Phonak

Presenter: Peytra Gettings

All right, thank you so much, Anna, and for everybody joining us today, my name is Peytra Gettings. I am a senior clinical trainer at Phonak. And we're delighted to have you all with us during this hour, whether it's your lunch hour or beginning of the day or end of the day. As I mentioned, my name is Petra. I am employed by Phonak and I have no other financial or non financial disclosures.

So one thing that you learn very quickly in this field of audiology hearing devices is that each patient is so unique, regardless of how similar they may look on paper. You can have two audiograms, but completely different stories. So it's so critical to consider each patient individually so they can have the best outcomes. So take a look at these two kids here and imagine that we had asked them to run a race. One is in a size that fits them very well.

The other one is in a size that doesn't fit them at all. And his ability to run and play is certainly going to be hampered by this fit. So you're probably imagining him tripping down the field in those big clunky shoes. But on the other hand, once the clothes fit and are fit specifically to him, not only is that boy on the right going to be able to move around more efficiently, but there's also a greater sense of confidence that comes and this is what we provide to our patients. I think another thing that we all learn is that some hearing loss profiles seem to be easier to fit than others.

So today we'll talk through creating a personalized fit for some of these patients. We're going to focus on two special populations, patients with unilateral hearing loss and patients with severe to profound hearing loss. We'll talk about their unique challenges and then we'll explore which products can best meet their needs, whether it's programming tips and tools and what things beyond the hearing aid can set this patient up for maximum success for you during this process.

So by the end of this hour, you'll be able to describe the steps for cross by cross fitting, describe software tools to support those with severe to profound hearing loss, and finally explain how Roger can assist these special populations. You will go ahead and start with unilateral hearing loss. There are

several research and clinical definitions of unilateral hearing loss, but we'll take this definition from Marlene Bogado and colleagues. Unilateral hearing loss refers to any degree of permanent hearing loss in one ear with normal hearing in the opposite ear.

Now, the prevalence of unilateral Hearing loss varies in the literature, particularly due to these different research and clinical definitions. One in 1,000 newborns are identified at birth with unilateral hearing loss, and this number increases to approximately 3 in 100 children who develop unilateral hearing loss by the school age. Now, the overall prevalence of unilateral hearing loss in American adults is considered to be 7.2%, with 5.2% having a mild and 1.5% a moderate or worse unilateral hearing loss. There are many causes of unilateral hearing loss, as you can see from this long list, including silomegalovirus, bacterial meningitis, sudden hearing loss, Meniere's disease, and these numbers would probably increase for adults if we expand our definition to consider those with one unaidable side and one atearable side that isn't completely normal thresholds so patients with unaidable hearing loss in one ear face their own unique set of challenges. I think we all see that in clinic they have difficulty hearing in noise, difficulty differentiating sounds, and difficulty understanding speech that can cause greater problems like reduced socializing, increased listening effort and fatigue, and additionally can cause problems at home and certainly in the workforce course.

But fortunately, these patients can now benefit from infineo technology. Unilateral hearing loss is associated with audiological, psychosocial, and educational challenges. Audiological challenges include reduced awareness on the unaidable side, difficulties hearing in noise or at a distance, and reduced ability to localize sounds. Unilateral hearing loss affects communication and social interaction and as such is also associated with reduced psychological and social well being, reduced quality of life, and increased loneliness. Just last week when I was in a clinic, I was talking with an audiologist whose husband suffered a sudden hearing loss and she said that even though he had also undergone cancer treatment years ago and even had a heart attack, he felt that his sudden hearing loss was truly the

worst medical condition that he had dealt with because of its impact on his social and family life.

He's not alone. I think we've all seen these patients.

Take Carly Skygrove, for example. She highlights the challenges of sudden unilateral hearing loss in a recent article of the British Academy of Audiology magazine. She writes, not only was I struggling to deal with the practical challenges of living with a reduced sense of hearing, but I was also overwhelmed by the emotional aspects of hearing loss, such as feelings of isolation and the need to grieve the soul I had lost. In noisy environments, it was difficult to focus on a single person's voice. Socializing was demanding amongst the background noise.

In recognition of these challenges, rehabilitative solutions such as routing that signal or cross solution of hearing implants are on the rise across or contralateral routing of signal and bicross devices are non evasive, cost effective and easy to use Treatment options for patients with unilateral hearing. CROs and Bicros aim to improve speech understanding in quiet and in noise, especially when the speech is coming into the poor hearing side. And we know supporting communication is fundamental for social, emotional and physical well being.

Now we'll have a quick review and level set just to make sure we're all using the same terminology. A little trivia for you. The first CROs hearing aid was introduced in 1965. So I'm not or I am going to make the assumption that you all know this, but just to kind of quickly show you on the screen, you've got the cross the unaidable ear. Where's the transmitter that's sending the sound to the ear with normal thresholds or in a Bicros for example, we are sending the aided ear where the transmitted sound is then mixed in with the hearing aid sound.

So as we have this discussion today, you may hear me refer to the hearing ear for short. And so we'll go ahead and move along. We'll take a look here at the history of our Phonak CROs systems. In 2011,

Phonak introduced a CROs solution that was based on its 10.6 MHz wireless technology. Utilizing binaural voice stream technology, the Phonak CROs system was able to stream bidirectionally in real time the full audio bandwidth between two hearing aids.

In 2015, CROs 2 was introduced and this was a huge improvement over our original CROs as it was more selective about what was picked up and then transmitted to the hearing aid. This functionality and benefit is still seen in our current CROs system. And of course with even more improvements added along the way.

Our newest member on the family tree is the Infineo platform. The CROs Infineo Rechargeable is compatible with the Audeo Infineo Rechargeable and its associated chargers. So you'll see that charger Ric Infineo up at the top is the default charger. However, if your patient would like charging on the go, they can always purchase that charger Go Rick Infineo at the bottom.

If we look at the acoustic coupling options for CROs and Finio, you'll see again this is simply just for retention purposes as there's no sound being directed into that cross ear. We have that SDS or the cross tube is 6.0 for the coupling and that can be attached with a dome, whether an open or vented dome. Or if your patient does need a little bit more retention, you can certainly go slim tip or the cross tip route. Again just for retention purposes as there's no sound going in that side.

Additional CROs options are still available on the Lumity platform. So you can see here if your patient needs a solution with the telecoil, they can use the CROs lumity with the Audeo Lumity RT rechargeable T coil. And if your patient needs a BTE option, we've got those as well that are compatible with the CROs lumity.

With CROs, your patients get the full benefits of Autosense and smart speech technology from the paired hearing aid side in that CROs system. So this means they can take advantage of features like

stereo zoom and speech enhancer through the hearing aid side of that system. They also have that full wireless connectivity to Bluetooth as well as Roger technology.

Now one thing to note is that you will not see a technology level designation on the CROs device and that's because it will adopt the technology level of the hearing aid side. So this is really important when you are considering which hearing aid to fit on that aidable ear. When we fit a 90 level technology on the better ear or on that hearing aid side, patients get automatic activation of speech and loud noise, including Stereozoom 2.0 and access to speech enhancer when fit with a 70 level technology. On the hearing aid side, speech and loud noise can be added as a manual program to get the benefits of Stereozoom 2.0. I know these features can be especially helpful for these patients who are struggling in noise.

So again, it's important to remember that that CROs takes on all of the features and benefits of the hearing aid side on that contralateral ear.

We'll start with addressing a situation patients are in most often and that is calm situations. So think about challenges in these environments. Maybe it's that soft spoken spouse or grandchildren's voices. It could be speech from more of a distance due to like room setup and it could be somebody that you really are straining to hear. If only a monaural signal is available.

These patients don't have access to binaural summation to give a bit of extra boost for for distance or soft voices. And these situations can be very difficult even for binaural hearing. The advanced feature of Speech Enhancer is proven to help with these soft voices in quiet. You'll notice here in the target software, Speech Enhancer appears in the calm situation of autosense, providing up to 10dB gain for those soft peaks of speech.

We know from the research that Speech Enhancer has been shown to lead to improved speech intelligibility and less listening effort. New research now demonstrates its positive effects on lessening fatigue and higher memory and comprehension performance. So what could your patients do with their day if they were less fatigued? Would they want to go to that social event later in the evening because they're not as fatigued from trying to listen all day? Would they be more likely to join in conversation at that restaurant or maybe simply enjoy not being as worn down by the end of the day from having to work so hard just to hear?

These are some of the possibilities that could have a very positive impact on your patient's well being. Now we'll move on to background noise. As I know this is truly the biggest struggle for patients who are who have that unaidable hearing. On that one side. Starting back with the CROs 2 device and in Infineo technology, today we see that this has certainly advanced.

When in quiet, the hearing aid and the CROs system will utilize real ear sound configuration. And this takes into account the pinna effect. So this helps to lessen the amount of noise being sent from the poor ear to the better ear.

Now if we introduce moderate levels of noise while our adaptive beamforming kicks in on the hearing aid side, the CROs device remains in real ear sound.

But let's add even greater levels of noise. And this is what makes our CROs system so unique and so special in challenging environments. The CROs device helps out. You can see the mics of both the hearing aid and the CROs will work together as a four microphone system to further narrow the beamforming to pick up only intended signal. So this allows for much less noise to be transmitted to the hearing aid, ultimately leading to improved speech intelligibility and therefore reduced listening effort.

So you can see again, in that audeo infineo 90 level of technology, both hearing aids or both the hearing aid and CROs automatically go into that adaptive stereo zoom microphone behavior. With the Audeo 70 level technology, this can be configured as a manual program and then this would not be available in the 50 or 30.

We'll walk through the fitting experience of a CROs device in the target software.

We know that CROs patients aren't always a frequent occurrence in clinic. I always like to say they kind of came in waves when I was in clinic. So I want to highlight an easy way for you to remember or to confirm which devices are compatible with CROs. If you come here into the Instruments tab of the software, you'll choose CROs for the applicable side. And then you'll notice there's an easy compatible button at the top that filters that for you, so you can see quickly at a glance which models work together for seamless connection.

Connect both the CROs transmitter and the hearing aid to the target software using the NOAA Link wireless. And the connection workflow is essentially the same as with a standard hearing aid fitting. One of the benefits of Phonak CROs is that the CROs transmitter is active during the fitting process, allowing for fine tuning in real time. So let's take a look at how that looks in Target.

So the connection sequence is very familiar. You'll see that both devices are detected in the target software.

From here, when the devices connect, you'll notice you have the option to unmute the devices. And when you unmute the cross side, the notification appears stating that binaural voice stream technology will activate. The CROs system will briefly reboot, and this is an automatic reboot and your patient may hear the hearing aid briefly turn off and then back on. The CROs signal is now being streamed to your patient's better hearing side, allowing for fine tuning in real time. From here, you would proceed as you

normally would and confirm acoustic parameters in the target software.

And then of course, run that feedback test on the hearing aid side.

After you've run the feedback test, you will proceed to the global tuning tab. And here you'll see a CROs balance tab that only appears when a CROs device is connected.

Cross Balance is a tool to balance the mix of levels between the CROs transmitter and the hearing aid inputs. And if you are familiar with fitting a Cross Belong or Cross paradise or the CROs Lumity device, then this tool is similar for CROs and Finio. Now, the default starting point is zero, and this is the point where the transmitter and the hearing aid are balanced at the same input level. At this setting, you can go up or down five steps. Now, the levels are inversely related, so if you increase the input from the CROs microphone, then the input from the hearing aid microphone will go down.

Some patients, I've noticed, prefer the cross input to be slightly raised. Reporting that they feel it gives them a little bit of a sense of perception of localization. Again, remember, we're not providing localization with the cross, but they like having that perception of just a little bit more boost from that cross side. Cross balance can be set here in the target software by you, but it also can be changed in real time by the patients.

And device options is where you can configure that so you can review that with the patient. How they can use the multifunction button.

So in the cross side, the patient can adjust cross balance in the moment. So a short push would increase the input from the cross side and it decreases the hearing aid input. A short push down would do the the reverse. Now, on the hearing aid side, click this so that you can see a short push on the top of the hearing aid will increase the volume of the combined signal, and a short push on the bottom of

the hearing aid will decrease the overall volume. So again, you want to enable that volume control on the devices so your patient can have onboard access if you choose to give them that option.

Now, once fitting is complete, pairing for Bluetooth is typically the next step. The hearing aid side is always the Bluetooth side when pairing for phone calls and audio streaming. And for additional control, the CROs Infinio is compatible with the Myphonak app and can be used to make program changes, overall volume changes and remote support sessions. As a note, the CROs Lumity and Cross paradise devices are compatible with both apps. The Myphonak app pictured on the left as well as the MyPhonak Junior app.

So if you do have a need for a patient who just needs a little bit of a simplified app version, by all means pair their devices to that junior app. We've seen a lot of success with that. For typical hearing aid fitting, the patient has about three adjustments they can make, i.e. volume, a speech focus and then a noise reduction slider.

And remember, with stereozoom, we talked about that when your cross patient is in those very noisy environments, in the Myphonak app, patients have additional control of this setting to increase the strength for additional benefit. And you can see when it's maxed out, your patient can get an additional 2.5dB improvement in SNR.

So when I was showing the software, I had showed that the patient can adjust cross balance right on board on the hearing aid. But another way to adjust that is within the Myphonak app. So Cross Infinio patients will have access to that cross balance feature as well as cross mute right within the app. The left and right refers to the patient's left and right, rather than needing to remember which is their cross and which is the hearing aid they simply decide if they want to hear more from the left or more from the right. Naturally, Cross, Mute and Balance are compatible with Cross Infineo solutions and we know that means that Cross Infineo with the Audeo Infineo device.

It is also backwards compatible for Cross Lumity and Paradise solutions.

As mentioned, unilateral hearing loss can range from a mild loss right through to an unaidable profound hearing loss. The technological solutions in counseling to support a patient with unilateral hearing loss may be very different and even vary over time during that patient's journey when hearing loss is at able with normal hearing. On the other side, a patient might benefit from a hearing aid and a Roger. When the hearing loss is unaidable, either because of the degree of loss or poor speech recognition, a patient could benefit from wearing a CROs system. A CROs system is also a great option when a bicros setup is needed for amplification on the better hearing ear.

Now, if the poor ear is unaidable but the hearing ear is normal, some patients may opt to use a Roger. Focus two on the normal ear With Roger technology, BONAC is committed to providing hearing solutions regardless of the degree or type of unilateral hearing loss for these patients.

In summary, with CROs your patients can benefit from improved speech understanding in noisy environments, follow conversations wherever they are coming from, improve subjective quality of hearing such as ease of communication and sound quality, universal connectivity to smartphones, tv, Roger and more and finally have a device that's easy to use with a rechargeable solution.

A couple statements from participants that were in a recent study and these research participants were presented with a prompt 1 benefit to using my hearing aid in both ears or a hearing aid with the cross is this. And so you can see a couple of these comments from from these research subjects. One person noted that it's easier to hear in a classroom environment. I'm more aware of my overall environment, I feel safer, I feel like less of a burden and social situations are less daunting. I think this really shows how well Phonak Cross can help make the world brighter and support our belief that invideo unlocks a world of possibilities for everybody.

We'll now switch gears to another challenging population, those with severe to profound hearing loss and these can sometimes be our most difficult patients, but certainly our most rewarding when we've had that fitting and that patient is finally happy be one of the things that makes this population so challenging is how different they can be. Here we see test scores for single words in quiet plotted against hearing loss, when the hearing loss is less than 60dB HL, we can expect scores close to 100%. So if you see all those blue dots gathered tightly bunched together at the top left, once the words are loud enough, patients will likely get excellent benefit from speech understanding from their new hearing aids. But when the hearing loss is greater than 60dB HL, it is a completely different story. The word scores are no longer predictable.

We see those red dots that are just simply scattered about. The scores truly are all over the place. And the likely benefit of amplification with hearing aids can be anything from excellent all the way at that top little dot where that where it's close to 100% all the way to a poor percentage. So today we're talking about these common challenges, but obviously you'll want to consider each patient individually.

So if we dig into it, our power users face big challenges that force them to rely heavily on their hearing aids. They experience loss of auditory resolution, making it harder for them to tell the difference between speech sounds. They also experience loss of high frequency audibility, making it harder to hear soft, high pitched sounds and voices. And finally they experience loss of signal to noise ratio, making it harder to hear in those noisy, challenging environments. So think of how this impacts their day to day and their social interactions and engagements.

At Phonak, power truly is in our DNA. We have spent the last 75 years bringing patients power hearing aids. And for the last 16 years we've offered Naida hearing aids, giving patients the power and performance they need to tackle challenging listening environments. I think if you ever did hear that term Naida, you may not know really what it was, but that it was a power device. Ten years ago is when

we introduced Roger technology which is so helpful for this patient population.

Our current power family is the Naida Lumity. So let's take a closer look here. Lumity technologies are available in BTES across these three Naida models. The power rechargeable, that PR your superpower, which is powered by a size 13 zinc air battery, and then finally the ultra power, that is for the more severe to profound hearing losses. It's powered by a 675 Zinc Air Battery.

Your Naida users will also get the seamless adaptation of autosense and the performance of smart speech technology. And you can adjust those additional features within the target software.

We'll walk through what a target fitting can look like and overall the flow is the same as any other fitting. But we'll touch on some specific Tips for these long time power user with step one, obviously the basics, we're going to check acoustic coupling and run that feedback test once the devices are connected.

Step two would be if they are a patient who is a prior Phonak user, you have the option to transfer a fitting and we'll talk more about why you may or may not want to do this. Step three, you'll want to complete your real ear measures or use target match as you normally would.

Step four, we're going to set up the programs and features and we'll show you how you can reorder their programs. If they don't want autosense as their startup program, the next step would be Roger and streaming. These patients often benefit from additional support and noise and so sharing that this technology exists is important really from the beginning of that hearing aid evaluation and journey with them. And finally step six, time for the patients to take home their new devices and build up those auditory skills.

Now I want to review what will and will not transfer when you do transfer a fitting into the hearing aids. As a reminder, this would be for a Phonak patient who previously wore Phonak hearing aids. What will transfer is the program structure, the fitting formula, the global gain level. So where they set at 105%, for example the compression settings, whether it was prescribed or semilinear compression. What will not transfer are the feedback thresholds, the acoustic parameters, audiogram, direct target match, the tinnitus settings and program options.

So because of that, it is recommended to run the feedback test and review acoustic parameters before starting that transfer process. Even when done so, gains may differ due to different feedback thresholds and the fitting ranges. So knowing that, you may decide that it's worth starting with a brand new fit as opposed to trying to bring in older settings into a new hearing aid that may have a different fitting formula or features. So just some things to be aware of.

Now we'll get into the programs. So shown here on the left is the default AutoSense program list. Occasionally with those longtime power users, you may have a patient who would prefer the hearing to start in just a static program instead of autosense. And then they may want that decision to go into an automatic program. So you could easily set that up in the program manager.

Right now we see that the default AutoSense is the startup and there are no other manual programs here within the program manager you could easily check the box to give access to whichever program they want. So we've got calm situation chosen here. So then you could make that the startup program. You'll see there that little green bubble where that arrow is pointing that is set up as the startup program. So autosense for this patient would now be accessed by a long press or the program change using the rocker switch or the Myphonak app.

And this setup we are using a linked program and you could also add a new program copy that's completely independent of autosense to make that a startup. So just to reinforce this is probably not

something you're going to do typically for patients, but again for these maybe unique patient populations they may prefer instead of starting an autosen starting in a default program, you'll remember that we talked about the key challenges of these patients with more severe hearing loss and I want to highlight some specific settings and features that are especially useful in addressing these needs. We'll start with Adaptive Phonak Digital Contrast Fitting Formula.

APD Contrast is a proprietary prescriptive option to apply slow compression in all environments in order to increase the envelope cues for speech for those who need it most. Benefits of using this APD contrast fitting formula include more dynamic range, reduction of perceived reverberation comfort and noise, comfort in loud noise with impulse sounds, and better and more natural localization perception as compared to fast acting compression. This additional fitting formula gives you more flexibility to meet these patients needs with severe to profound hearing loss. So what benefits would or what patients would benefit from this unique fitting formula with slower compression? I think of patients who have more of an average dynamic range, patients who have poor discrimination kind of based on their audiogram, maybe patients who are just not adjusting well to amplification, or those patients who report I'm hearing but I can't understand so the clarity is still not there.

One thing to reinforce I'll just jump back. This APD Contrast fitting formula is available in all products, not just Naida products and it is available in all technology levels.

Next we'll come to the need for hearing high frequency inputs and this is where SoundRecover 2 or nonlinear frequency compression comes into play. SoundRecover was created to not only provide audibility for high frequency phonemic information that would otherwise not be heard by patients with a high frequency severe to profound hearing loss, but it also combats receiver limitations or the inability of modern hearing aids to provide sufficient high frequency gain for hearing losses.

I love how adaptive sound recover is and want to spend a little time reviewing how it works. So this is what it looks like. In the target Software you'll see CT1 or what we call the cutoff one is the solid line and CT2 is the dashed line. Now, the area below CT1 is always left alone and receives no compression. The area above the dotted line or CT2 always receives compression.

And then in between those two is what we call adaptive. So between those two lines, what happens there is dependent on the input signal. So for example, if the signal has significant high frequency energy like an F sound, S th, then compression will extend through the adaptive area. However, if that signal is low or mid frequency weighted, then you'll see compression will stop at CT2 and the adaptive area remains unchanged. So sound recover is continuously and instantaneously adapting in this way.

It's based on the distribution of the energy in the input signal and determining where that starting point is of compression and at any single point in time.

Now Another detail with SoundRecover, you've got two sliders, clarity, comfort and audibility distinction. SoundRecover 2 is very flexible, and between those two sliders there are 80 different possible configurations. If a patient isn't hearing high frequency sounds like S or sh, moving that top slider towards audibility will make Sound recover two stronger. Now, if they're hearing the sounds but having a hard time distinguishing between the sounds, maybe they're reporting everything sounds lispy. Moving the slider towards distinction will create a more separation between the sounds.

And if you're checking this using verification equipment, the S and sh should have 1/3 octave between them. Now let's look at that second bottom portion on this page. If the sounds are audible and they can tell the difference, but they feel somethings, or maybe something is just not quite right or vowels seem a little off, moving the Clarity comfort slider to the right will shift the CT2, changing the proportion of adaptive or the fixed areas.

One thing to note, if you move all the way to comfort, double check your audibility and make sure they still do have that. So I think of that top slider, the Audibility distinction slider as your slider. So the provider slider can the patient hear the difference between AN S&SH; and then that Clarity Comfort slider as the patient's kind of subjective preference. As you move from A to B to C to D, it changes the proportion of sound on either side of that cutoff. So you might change the slider.

If consonants are audible and they can distinguish them, but maybe their own voice sounds a little off.

The final note to remember with SoundRecover is if your patient has a difference between the ears, you can click under Global Tuning and SoundRecover to calculate the hearing aids independently. For those with asymmetric hearing losses, Sound Recover 2 is an extremely useful tool restoring that critical high frequency information that's so important to those with severe to profound hearing loss while maintaining the familiarity of low and mid frequency inputs.

Lastly, we come to a couple of some of the features specifically tested on individuals with severe to profound hearing loss that show the proven benefit for reducing listening effort and improving speech understanding. So we'll take a look closely at speech enhancer. In this study of speech enhancer for adults with severe to profound hearing loss, we looked at speech at a distance and the benefit seen was quite striking with a 24.6% reduction in listening effort when speech comes from a distance of 2 meters, increasing at 34.6% reduction at 4 meters and 22% better speech understanding at that same distance but even more reduction in listening effort you can see at 8 meters for severe to profound hearing loss, the reduction in listening effort increased as speech came from further away with speech enhancer activated.

And when it comes to noisy environments, we've tested stereozoom specifically with severe hearing loss as well. Here we were looking at the differences between stereozoom on versus off using speech and loud noise and calm situation manual programs in the Naida devices research participants listed to

sets of three sentences and then rated their listening effort to each set using the scale from a colleagues and EEG activity was recorded for three different SNRs in the image. Here we're looking at the EEG results and the red reflects that the brain is having a harder time to work or that listening effort. The yellow and blue indicate less effort is needed to complete the task. Results found that listening effort was significantly lower with stereozoom than without it at all.

Signal to noise or sorry SNRs were not just the most difficult ones. So in other words, listeners with severe hearing loss benefited significantly from stereozoom even when listening effort was already relatively low in that higher SNR condition. This reduced cognitive effort was also observed in the EEG data which showed significantly lower alpha band activity with stereozoom than without at all for all three of those conditions.

We talked about the variability of individuals with this severe to profound hearing loss and specifically with stereozoom. You may find that power users like to hear more of that noise coming in and so for those patients you do have the ability to adjust the activation level of speech and loud noise. Here we are in the fine tuning tab of fitting and specifically autosense os. When you come into here you'll notice that that activation level Right here in that center is set to 10 by default. But you can move that slider over to the right.

So a higher level of noise is needed to trigger the switch to speech and loud noise, so it's activated less often.

Like all of the Lumity family, Naida Lumity has direct Bluetooth connectivity to smartphones and other Bluetooth enabled dev, including laptops, desktop computers, tablets, even flip phones. So this provides access to the Myphonak app when your patients are connected to a smartphone, whether that's an iPhone or Android device. Really giving your patients peace of mind that they can have additional control of their aids in challenging or unexpected environments. And let's not forget about the

connection made possible by Roger.

We know that individuals with hearing loss often report they experience significant difficulties listening in noisy environments despite well fitted hearing aids. So hearing aids where verification measures were done, still 31% of those patients are struggling in background noise. And although there have been improvements in directionality and noise reduction, a common challenging listening situation that adults with hearing loss face is trying to communicate with several people when there is background noise.

So if we take a look at why, why Roger, I love this figure. Here we have this critical distance where hearing aids are able to work within. When it's quiet, your critical distance gets longer or farther away because the hearing aids don't have to clean so much noise in the middle. But as that noise floor increases and as you are seeing on the Y axis, the critical distance shortens so that you see probably every day when you're in a noisy situation. Think about a wedding reception, a noisy restaurant.

As that noise floor gets high, we get really close and we may even, you know, get closer to yell in somebody's ear. But we understand the fact that critical distance between the sound source, your mouth, the receiver, the person's ear needs to be shorter. And this is where Roger technology comes in. Hearing instruments in a near field environment are going to do great at cleaning up that background noise or bringing the speech sounds in and above the background noise. But when the noise floor gets too loud or when distance becomes too far, then that's when you'll rely on that remote microphone technology such as Roger.

Roger is the only remote microphone technology that uses adaptive gain. With adaptive gain, the Roger signal increases as the background noise increases to maintain a positive signal to noise ratio. Roger provides exceptional speech understanding in a group conversation and over distance. So whether you're working with the Roger on the Roger select or the Roger table mic, you can give patients access

to further improved hearing. And 90% of Roger patients would recommend Roger to their friends and family members.

This number here is so powerful to me. Think if you could give your patients up to 61% improvement in group conversation and 75 DBA of noise compared to using hearing aids alone. This study came out of research from Dr. Linda Thibodeau at the University of Texas at Dallas. And it's truly an impactful number.

And that's why demoing Roger can be such a powerful experience for patients.

Roger technology is very efficient at enhancing the speech intelligibility in background noise and from a distance. You might be familiar already with multibeam technology. And multibeam technology is a unique wireless microphone technology that automatically activates the microphone beam with the best signal to noise ratio by combining the output of the three microphones where six microphone beam combination can be produced and so that as conversations move around, that patient using the Roger technology can keep up. But how does it do it? Multi beam technology is one of the unique features of this Roger microphone.

It's analyzing the signal to noise ratio of each directional beam hundreds of times per second and the beam containing the highest SNR is activated. So in a conversation, especially in a complex listening situation, it's crucial that the patient knows which direction that speaker is talking to or talking from so that they can turn accordingly. Just creates for more of that natural experience.

So you can see that patient there in green is the patient using Roger. They can hear from the side that person is talking to them. Of the six microphone beams, the MultiBeam 2.0 technology selects the beam with that best SNR. As I mentioned, while giving that hearing aid wearer spatial information to determine which direction the speech is coming from. So think about those timing cues now to improve

the patient's listening experience even further.

Multibeam 2.0 technology in the Roger on allows for transmission of that speech signal to be heard and surround sound. So not only are we able to improve the SNR in that environment, we are now able to give important spatial cues and information that can help with localization of where that voice is coming from. Roger on is the first Roger microphone that allows for this stereo sound and it's switching this automatic.

So we'll look at another use of Roger technology. I really like to say that Roger is about 6 accessories in one.

This next use is pointing mode. So pointing mode was introduced in the Roger pen and it's one of the first microphones with Roger technology. Pointing mode would be used when your patient is trying to hear just one other person in front of them. Maybe they are a nurse or doctor making rounds in a hospital. And they could easily clip this onto their clipboard or or your patients out at a cocktail party environment.

Using that pointing mode. It uses three microphones in a row instead of two. That was previously in the Roger pen. You'll notice those are the three microphones that are activated in pointing mode.

The next use of Roger is presenter mode. And in some cases, such as attending a lecture or maybe listening to somebody in the backseat of a car, it could be clipped on. So with this lecture mode, no matter how that patient or the the speaker turns, that accelerometer activates into that upward pointing mode. So it knows the position as soon as it is clipped on. There is that internal accelerometer in there.

Automatically adjusting the microphone so the speaker simply needs to attach it, whether a clip or lanyard, about 8 inches from their mouth and they don't have to worry again about its direction.

This next mode is table mode. So think about your patient who's out to dinner with friends or family or they're gathered around a roundtable environment, maybe playing a card games. The three embedded microphones create a six beam combination. And this is using that multibeam 2.0 technology.

Roger can also be connected to all multimedia. So think about the TV that your patient loves watching laptops, desktop computer computers or even a landline phone.

Roger is truly easy to use with its accelerometer. It's automatically going to switch no matter how your patient is using it. So if it's clipped on, it will go into that pointing or that presenter mode. Or if your patient is pointing it, it's going to go into that pointing mode automatically. So they simply turn it on and it's going to work automatically for them.

It's no surprise that patients with severe to profound hearing loss reported less listening fatigue and more confidence independence and social inclusion and engagement and improved quality of life when they were using wireless microphone systems like Roger. So another tool that we you should think about when you have these discussions with patients. If you are curious about this technology, maybe you'd like a demo yourself. Reach out to your Phonak team. We love supporting you with this.

It really can be very impactful technology.

Another tool to share for patients in this patient population is hearing success. [Hearingsuccess.com](https://hearingssuccess.com) is a great way of supporting patients whether they're trying hearing aids for the first time, maybe they're getting started again, or for that experienced hearing aid wearer who's just adjusting to new hearing aids. It is a auditory training website that helps to ensure they learn to make really a sense of new sounds and supports their journey. For them, the Hearing Success Portal is like no other. There it is.

In conjunction with Advanced Bionics and of course as Phonak, we've created this one stop shop filled with evidence based auditory training tools and other resources that are convenient and customized to your patient. It also provides patients the opportunity to connect with other hearing aid wearers online to really strengthen their social network to have improved benefits for social emotional well being. And best of all, hearing success includes self guided resources so they can be done at home or on the go on their cell phone.

In closing this section you can see some additional resources here. This is a nice guide. You can scan that QR code to really give you more confidence as you're fitting that special patient population with severe to profound hearing loss. It is a quick practice guideline and it is a result of requests that we got put together by a group of experts to look at the research and give very practical, tangible advice for an evidence based fitting. So again, feel free to scan that code.

It'll pull you to the quick practice guidelines.

So today we've given you some perspective and tools on working with two different hearing profiles and unique needs. Patients with unilateral hearing loss and of course patients with a severe to profound hearing loss. We've outlined several products to meet those needs. Whether you are looking at the CROs Infineo device compatible with the Audeo Infineo device or the Naida products for your severe to profound patients. So the Naida Lumity SP or the ultra powered device powered by that 675 battery.

We've also talked about some programming tips. So think about using that APD contrast fitting formula. Think about setting up sound recover successfully for your patient. Maybe consider switching to a manual program as their startup program if they don't want autosense. And then think about introducing Roger technology in these discussions with your patient.

I remember being in a clinic before working with a patient and it was about a year into that patient's hearing aid journey and he said why didn't anybody ever tell me about this technology sooner? So it truly is up to you as their hearing care provider to take care of that total communication package. Talk about Roger sooner rather than later in that hearing journey. When we look at Roger fitting data, we actually see that 60% of Roger patients have a mild to moderate degree of hearing loss. So while it's very appropriate for your severe to profound patients, it can be even more or as impactful for Those patients with mild to moderate hearing loss as well.

So thank you so much for all of your time today. Your attention and joining this webinar on a Monday afternoon and feel free to reach out to your Phonak team with any questions. You've got support from a clinical trainer and an account manager. So please use your Phonak team we'd love to support in any way.

One question that did just come in that I will answer is Roger technology, what devices is that compatible with? So with the Roger on three it is compatible with all Phonak technology and it's directly just the Roger microphone plus the Phonak product. So no need to worry about any external receivers. Roger technology but also can be compatible with with non Phonak products. We have some great webinars on audiology online with Roger technology.

So if your patient does not have a Phonak product they certainly can use it. It would simply be a matter of using a neck loop. That would be the intermediary device or Roger X receiver. So reach out to us. We love setting up those configurations and happy to support those patients.

Again, thank you all so much. If you've got any questions, feel free additional ones you can pop them in the chat or reach out to your Phonak team.

Another great question. Let me just address this. Can you connect multiple devices with the Roger microphone, so two hearing aid users to one mic? Great question Laurie. The answer is yes.

So unlimited number of hearing aids can connect to one Roger microphone. So I'm thinking about maybe a husband and wife or an adult son and the parent. They both have Phonak hearing aids. They can all connect with the Roger device. So that would be like the Roger on three since it has unlimited receivers.

Another question coming in. I'm not familiar with that hearing aid, Trish, so reach out to your. You can email me. We're a really good website. If you just Google the Roger configurator.

It is a website where you can plug in the make and model of that hearing aid. It's an otc. If they have access to a T coil then you could use a neckloop with that. I'm unfamiliar if that device has a T coil. And another question coming in.

How would you connect Roger to a landline? That is a great question. There is an intermediary device that you could get. We don't sell that. But Sarah, if you email me I can.

I can send you the link. It's actually just a device you can get on Amazon. It would plug into the back part of the landline phone. So I've worked with patients who work in a call center, for example, you're seeing landline phones less often, but I know they do exist out there. So, Sarah, you can reach out to me.

My email is not on here, but it's patreon.gettingsohnak.com or to your Phonak team. Your trainer specifically would know that.

I'll give it another minute or two to see if there's any other questions.

All right. Well, again, thank you all. Have a wonderful rest of your Monday. We so appreciate you joining us today. Take care.