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Grand Rounds By ReSound: Directionality Session 3

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Okay, so it is the top of the hour, and we are going to go ahead and get started with our grand rounds by resound, or session number three of directionality. So, my name is Valerie Kedem, and for the next 30 minutes, we are going to be talking about some of the lesser known features that you get with resounds directionality options. This can be in the form of either software changes or even a receiver. So these are our learner objectives. After this course, participants will be able to describe spatial sense.

After this course, participants will be able to discuss Marie benefits. After this course, participants will be able to compare and contrast directionality options available to providers and patients.

So, as I mentioned, this has been a three course series. It's the last part of this directionality series. And when we take a look at this slide, it breaks it out to what we've been talking about. When we hear that word directionality, I just want everybody take a moment to think about what does it mean to you when you see directionality in our hearing aid world? What comes to mind for me, what comes to mind is, what's my microphone doing at any given time?

What is happening with those microphone patterns? And we know that having different options can be very beneficial to our patients depending on where they are during their day. So session number one focused quite a bit on the philosophies of resound, kind of this automatic control for ease of use. These options that we see here are what come with our program number one, all around automated, meant for daily listening. And just to make sure that those mics are in the appropriate setting, no matter where the patient happens to be.

The second session was more about program number two, what we refer to as our hearing noise program. And I always like to think of this as like a restaurant program. So how do we help our patients hear better in these very challenging environments? And that's what we're doing with program number two, by improving that signal to noise ratio. In addition to having these options in program one and program two, we also have some ways to improve that sound quality.

So this could be through a receiver, which is Marie, or through maybe some different directionality options that we're going to find here in the software.

So when we're thinking about program number one or that first category for those directional options, know that no matter what level of technology you have, five, seven, or nine, the basics are what we see here in this video. The hearing aids are automatically going to be in an omni. Omnidirection, no microphone pattern, or maybe when there's a change in speech and noise. They might go to this asymmetrical pattern that we're looking at here. One hearing aids in a directional beam form, the other is an omnidirectional.

And then as that more challenging listening environment comes into play, these hearing aid microphones are automatically going to go into that more traditional directional, directional option. So that's what's going on when you see these words. 360 all around, all access binary directionality. Three, you have these four automatic microphone patterns operating the background. That's traditionally what we're going to find in program number one.

When we cruise into program number two, we are calling this program hear in noise. Why? Because we want you and our patients to look at the name of the program and say, what's the point of this program? Oh, it's so I can hear a noise. So operating with the same idea behind it as you go up into different levels of technology, we still have this bilateral beam form, but we are going to make it more sophisticated, very much like what we're doing in that program.

Number one functions, the same sophistication is a little bit different.

So in addition to having these directionality options, we also have some features to make the hearing aids sound better, and we also have some different ways to do directionality. The first of these is

something called directional mix. So we don't talk about directional mix very often. It's kind of that feature that it's there. If you happen to have a level nine, you might see it pop up in the software, but what is it actually doing?

So when we think about directional mix, just know it's your crossover frequency. So how much are we processing information more omni or directional? We do this anytime the hearing aids go into this directional pattern. Think restaurant program, and it's always operating in the background. So directional mix is the level of directional mix is going to be chosen automatically depending on the hearing loss as well as the style of hearing aid that the patient is wearing.

It operates in the five, the seven, and the nine, the same. But the difference is in a level nine, you have access to it. And its claim to fame is that even if you're in a directional beam form, we want the hearing aids to sound good, and we also don't want to lose those interval timing differences. So directional mix helps make sure that these two things are happening. It's usually my last thing that I might change in the software.

Reasons that I might change my directional mix by either increasing or decreasing it is maybe somebody's come back a couple three times, and they're still saying that, man, I go into this restaurant, I can kind of hear everything around me, but I can't hear the people in front of me. That might be a good time to increase your directional mix. We will go into the software to look at it so you can see what I mean when I say increase and decrease. But that could help with that particular complaint. On the flip side of that, maybe in a quiet environment, the patient still feels like the sound quality is noisy.

You've turned expansion on, you've reduced flows. You've done an increase in the noise reduction feature, but it's still not fantastic. Then that might be a time that you decrease the directional mix. So again, it's something that you see in a level nine that you have access to change. But it does operate in the background for the fives and the sevens.

Now, a different directionality option. So microphone pattern option is called soft switching. When I think about soft switching, I like to explain it as this used to be our super fancy microphone pattern prior to those four automated patterns that we saw in the video. A couple slides back. But soft switching is still around for a couple of reasons.

A soft switching is the default that you get if you have a monorail fit or if you happen to have a cross or bicross device. This is what we're going to be seeing. It's going to be soft switching within the smart fit software. We can see here that this is going to be the conditions for when the hearing aid decides to go omni. Omni versus directional.

Directional. And that's all operating in the background. Every once in a blue moon, we have a patient that cruises through, and they maybe feel a little bit off center with that asymmetrical pattern. One hearing aid in omni, one hearing aid in directional. Or they just have worn resound hearing aids for a really long time, and their sound preference is soft switching.

Another directional option that we have is in the form of spatial sense. Spatial sense has been around for quite some time. If you've ever seen binary directionality. Three with spatial sensor, binaural directionality to a spatial sense, this is the feature that we're talking about. It used to be something that you only saw in the premium directionality option.

But over the years, we've put it into all levels of your technology. The whole reason to have spatial sense is to make sure that we help our patients have access to average penicillus. We know that whenever we put a hearing aid behind the ear, whether that's a BTE or a rick, these are great, wonderful hearing aids, but we do lose those penicillus. We basically bypass the function of the penna when we put a BTE on. When we take a look at these three pictures here, this shows what we're talking about.

So if we look over here at the left side, this is just slapping a hearing aid that's a BTE or a rick on and not putting those average pen and cues back, not trying to help the patient have access to the information that they need. When we compare the left picture to the middle picture, this is what we get just with the regular ear, we can see that there's quite a bit of information that we're missing when we activate spatial sense. When we put these average pentacles back into the hearing aid, we can see that even though it's not exact, we have given that patient more of these pentacue type information that they really do need to be successful in their listing environments. So spatial sense is there, all levels of technology, and it's there to help make sure that we have these averages, these average penta cues in there.

So, a few years back, we launched a new receiver, and that new receiver is called Marie. So the first several items that we talked about are software changes. Whether changing a feature that would be your directional mix within the software or changing the type of directionality that we're doing, that would be spatial sense and soft switching. Marie is a little bit different because it's a receiver. So when we think about our receiver lineup, we've got our four typicals, we've got our low power receiver, our medium power receiver, our high power receiver, our ultra power receiver, and we have a fifth option in the form of Marie.

It is named, aptly, it's literally a microphone and a receiver in the ear. And we've put a microphone here at the back of the receiver, right at the opening of our patient's ear canals. Why do we like this? Why do we need this? So it's very similar to facial sense.

The difference is that Marie is literally collecting the patient's own penicues and using that as part of the processing for these hearing aids. When we take a look at these pictures here, we have our open ear. So just a regular measurement. Nothing's going on. When we put that BTE or that rick in, we're back at this pana restoration.

So when I take a look here, I've got my vertical lines on the right side looking pretty good, looking very similar to what I have over here in my normal open ear. And when I take a look on my left side, I have some of this information, but those red horizontal lines are as prominent as what I see here in my open ear. When I put a Marie receiver on, this is what I got. So Rosette has this philosophy called organic carried. It's essentially in a nutshell.

We look at Mother Nature, we think she's pretty smart. She sees, see what she does, and then we take that and we put it back into our hearing aids. Marie is an ultimate example of that organic hearing philosophy, because when I compare this to my open ear, not only do I have my blue vertical lines on the right, I also have my dark horizontal lines on my left. So this is more how we hear naturally. And this is that collection of those pentacles when we look at side by side comparison here.

So now we've got, we haven't helped out at all. No pennile restoration. This is what we have normally. This is what we get when we have pennile restoration. And when we add that, Marie, we have pretty much gone back to what the normal ear does as far as that collection of pentacles.

So beyond those pictures, what do we find with Marie? What I like about this is that you might note that up here it says, National Acoustics Laboratory. We've done our research internally, of course, but Nal has taken the last year or so to do their own research and see, is this working how we think it is? Yes or no? So the good news is, yeah, re receiver is giving us these benefits that we've been talking about for the last several years.

We know that when patients use Marie, they localize to sound better. They're able to really know where things are coming from. Think of, like, an airplane flying overhead or a motorcycle driving by, or maybe kids running in the background and trying to pinpoint where are they exactly. We know that because patients have better directionality and better localization when they get into these noisier environments,

that they're better able to tease out speech from background noise. So they tend to do better overall as it gets a little bit more challenging because we're using the patient's neural pathways for this sound processing.

At the end of the day, they're just not as tired. They're not having to work as hard. They're not having to listen as hard, because the brain is like, oh, yeah, I recognize this. Cool. And something that I also like very much, especially because I live in Florida and, you know, in January and February, we're outside wearing flip flops.

So lots of sailing and boating and outdoor activities, golf, whatever it may be. We get a really big reduction in wind noise when we use a Marie receiver. And this is all just based on anatomy. Wherever putting that microphone down in the ear canal so it has protection against that wind noise. I don't know if anybody has ever heard hearing microphone in wind, but it.

For me it sounds like I've got a blow dryer just following me around right over those hearing microphones go. It's very, very noisy. Doesn't sound all that great. If you have a Marie receiver, then this tends to eliminate and drastically reduce those wind noise complaints. But we also see, I don't know how many of you all have had patients come back in and back in that hear noise.

That rustling over the microphone is driving them crazy with Marie receivers. This also helps out significantly with that type of complaint because most of the time those back microphones are monitoring the environment that Marie microphone is on and protected from all that wind and hair that's brushing over the microphones. Typically something that is not listed on our slide here is kind of cool as far as connectivity and phone calls. So because we have this microphone placed down in that ear canal for patients who have landline phones, who have float phones, who just don't want to have that direct connectivity between the hearing aids and their smartphones with a Marie receiver, it allows us to kind of go back to the old days, if you will, where you just answer the phone and put it right up onto your ear

canal. So that's an additional benefit that we get when using Marie.

Probably not something that we were shooting for, but just was a nice additional thing that happened.

Now, of course, everything comes with a stipulation, right? There's always those outliers. And utilizing that Marie receiver, we want to be aware of a few things. It doesn't make the fitting process any more difficult or any harder. You're not going to really be doing anything different if you happen to place the Marie receiver on these hearing aids.

But you definitely need to be aware of a couple of things. One is now the fitting range. Now this is the fitting range. You can see it's pretty broad. We don't always recommend steeply sloping hearing losses for Marie because they're really testing the boundaries of the feedback system.

So we want to make sure these hearing aids are sounding good, operating how they're supposed to, and of course not squealing. But that being said, I have experienced users who love their movie receivers and refuse to go back to a standard receiver because they really tend to notice that different differences between what they had before and what they have right now. You can push the boundaries if you want, but this is going to be the fitting range, and we kind of like it to be within this fitting range. So you're not having to do so many things to get the sound quality and the feedback right. The second thing is to remember with Mr.

Refit, close it down, you have to include the fitting. I know in our audiology hearts that if you have a patient come in and their thresholds are at zero, zero for 200 and 5500, one k, that you're like, and I know I am too. Absolutely not. No way am I going to close this fitting down. It's okay because we're collecting the patient's own penicillins.

Occlusion effect is not a complaint that we come up against. So go ahead and close it down with a tulip dome, a closed dome, a power dome, an ear mold that's not encased. If you encase it, you're covering up the microphone, kind of defeating the purpose of Marie, it's okay to do that. You're not gonna have the issues that you think you're gonna have, so close down the ear canal. And the second consideration is about our feedback control.

So with all fittings for resound, we want you to run the calibration. We want you to run the calibration because this activates our feedback system for each year individually. When you do this for anything that's not Marie, and you get something that looks like the left side over here, all this is saying to us is, hey, we're glad that you ran calibration because now your patient has protection against feedback. We're also not cutting the gain here. We're just making sure there's no feedback with Marie.

If you happen to see this, it is not going to be a great fit. So maybe the patient is an MRE candidate at this point. If you can't get this looking better, we really don't want the curve to go down past this second line, the gain 65 line, by very much, because then we just run into some sound quality problems, feedback problems. The microphone's not operating in the way that it was designed, so they're not really getting the benefit of those individual penta cues. Two ways to fix this option.

One, occlude more. Rerun the calibration, see if this gets better. If it does not, then we're going to need to go ahead and go back into a standard receiver. I would usually do a low power, medium power receiver is perfectly fine. Rerun the calibration, and then you'll be good to go.

When I talk about Marie, this is the thing that I try not to do. I try not to talk about it very much until I know that the patient is indeed a candidate. So I'll put the Marie receivers on, run the calibration, make sure that I'm not getting this. If I'm not and everything looks good, I'll talk about the benefits of Marie. If I see this, then I'm going to go ahead and exchange for a standard receiver and then go on my merry way with the fitting because I don't want to, you know, talk this thing up and then the patient can't have

it.

It's always not a fun thing to have to do.

So those are our things that we need to remember with Marie occlude. Make sure you don't have a curve that looks like this. So I want to do right now is jump into the software so we can see what some of these things look like and where they're located. And then we'll finish up with some case studies now because on my hearing aids that I have connected to the software right now, I do have Marie receivers on there. And with that being said, it'll show up as Marie versus facial sense.

So this is a screenshot from earlier today with my standard receivers on there, remembering that spatial sense is average pentacles and Marie is the patient's own peniculus. If I happen to have a Marie receiver on my right side and a low power receiver on my left side, it will still show up as spatial sense on both sides. That's just how it is. We also don't recommend that you do that. We want it to be apples to apples, standard to standard or Marie to Marie.

When I click into my software over here when we're looking for how to change the directionality options, advanced features speech here. And this is my directionality dropdown. So we'll default to 360 all around and a nine or all axis or binaural directionality, three, just depending on what level of technology you have. But you do have these options as well. So maybe your patient loves soft switching.

This is what you could do here.

It will change to synchronize soft switching. It's the same thing. Or maybe your patient loves omnidirectional microphone pattern and they have that Marie receiver on there and they only want it to be this Marie. You could change that here as well. If I cruise over here to my outdoor program and I have my Marie receiver on it defaults to omnidirectional.

But maybe the patient likes to be in that Marie setting. You could change it to that as well in the outdoor. So Marie operates when the hearing aids are an omnidirectional microphone pattern, giving those individual pentacles.

So what about directional mix? That's a great question. Typically, we're going to see directional mix here in all around program number one. When I click back onto 360, all around, my directional mix comes back into play. So maybe that patient's back and they're saying, restaurant's not good, can't hear the person in front of me.

You've done your normal stuff. That's when you can come into your smart fit software, come into directional mix, and you're going to be pulling it to the right. So when I do that, I'm going to move it to high. Then we can see this line here. What's that saying?

Is that all the stuff on the left side is going to be more omnidirectional processed, and the stuff on the right side is going to be more directional. And what we're trying to do is make speech better across the table. Okay, that makes sense. What about if the patient comes back and they need it to be lower? So then we would go to the left.

You can either click and drag, or you can just click on where you want it to go. So if I go to very low, then this is more half and half, right. All the stuff on the left side, more omni, all on the right side, more directional.

So we're going to pop back over here into our PowerPoint, because we have a few case studies to cruise through and the next couple of minutes here. So when we have patients that come in like this, patients were in hearing aids for a while. She's about to get some resalnexias. And whenever you're doing your consult, she mentions that she's got this huge backyard, she's got a bunch of dogs. And

when they go running around and she can't see them, she really struggles to know where they are.

Like, she knows they're out there, she can hear them, but she often misidentifies their location. So if my patient comes to me and they tell me this, as long as they're a candidate, I'm going to go ahead and try a mirror receiver on them. So I'm going to occlude that ear canal. I'm going to run the calibration. I'm going to make sure that my feedback system looks good and that my curve isn't down far past my gain 65 curve.

So hopefully that is going to help my patient with this particular complaint or this particular observation. What happens when she comes back in and she's like, hey. So I remember that we went through a bunch of different dome options, and the only one that worked for Marie that gave us that proper calibration for feedback curve was this medium power dome. And I love the sound quality. It's wonderful.

But it just. I do not like it in my ear canal. And I've had them for three weeks and I just can't. I can't. No.

So. But I really like that I know where my dogs are in the backyard. So not a Marie candidate just for more of a fit issue. But what else could we do to give them some of those pentacles? So you're going to take off that Marie receiver.

You're going to pop on a standard receiver, probably low power, medium power, rerun the calibration, and then you're going to change directionality to spatial sense. So it looks like this and our software, and it would say spatial sense versus Marie, but because we have a Marie receiver attached live, that's what we've got. But that's how you could address that.

How about this patient? Torn hearing needs forever. Never. She's had a pair of links, links squared links, three days, links quattro, so forth and so on. And then over the years with her, like, resound

omnias, she felt like she didn't necessarily like the default directionality.

She's also somebody who's new to you, but she remembers her audiologist saying something about microphone patterns. She doesn't like all the automatic changes. She just likes a few. This does not happen very often, but we do have patients that cruise through from time to time. So at that point, I'm probably going to change from whatever default setting I have in program number one all around.

And I'm going to go ahead and go into soft switching and see if that doesn't help our patient out here.

Now, this patient, she loves to sail. She's outside all the time. She's in the wind quite a bit. So as long as this person is a candidate. Occlusion, occluded ear canal.

Make sure that DF's looks good. That calibration curve looks good. I'm going to go ahead and put on a Marie receiver because I know that that is going to greatly reduce the amount of wind noise she's exposed to. It's going to sound more natural because the microphone is being protected by her ear canal. Also, if you've got those patients who complain of hear noise, hear noise, hear noise.

Marie receiver helps out quite a bit. And then last but not least, our gentleman here is just struggling. He still can't hear the people right across the table from him. It's the only reason he got these hearing aids was so he could go out to dinner and not struggle as much. So after you do the normal stuff that you typically do at this point, you might want to think about increasing that directional mix.

So pulling the slider over to the right. He has level nines, of course, so he will be able to have this feature, and that might be a way to address this patient's particular complaint. So 30 minutes goes by super duper fast. We are at the end of our time together. We do have quite a big support system for you all.

So if you have any questions or concerns or you want more information, please not hesitate to reach out to anybody here on this slide. Also, do not forget to take your five question quiz so you can get that half hour of a CEU. And I am going to come over here and just make sure that there aren't any questions that I missed. And it doesn't seem to be. So if you have anything that pops up in your head, please reach out to anybody.

We'd be more than happy to help you. Thank you so much for joining us today. I hope that you have a better understanding of some of those lesser features or less common features for directionality that we have. And I hope you have a wonderful rest of your day and your week. Thank you so much.