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Beltone Serene CROS Transmitter

Presenter: Laura Schachtel, AuD, FAAA

- [Kimberly] Welcome everyone to today's webinar, Beltone Serene CROS Transmitter. We are so pleased to welcome with us today, Dr. Laura Schachtel. And Laura, I'll hand things over to you.

- Thanks, Kimberly. So hi, and welcome everybody. Again, I'm Dr. Laura Schachtel, Beltone's product training development manager. And today's fast paced 30-minute sessions going to cover our new wireless rechargeable CROS transmitter. So excited that we finally have a wireless CROS transmitter. I know this was a product that you all have been asking for for quite a number of years and so it's so nice to finally be able to say we have one and to walk through how easy it is to fit and program in Solus Max and in our HearMax app. So again, as Kimberly stated, there's several handouts, which are the same ones that were for the past two sessions except the notes handout, printout would be different.

It'd be these slides for today. And if you can't access the handout this way or you need a different handout possibly than what's provided, our homepage, www.beltoneuniversity.com has all sorts of great handouts and resources for you there. So with that being said, let's get to our learning outcomes. So after today's session, you should be able to identify the difference between a CROS and a BiCROS fitting for a patient that has single-sided deafness. You should be able to describe the hardware needed to fit that CROS/BiCROS system. And then finally, list the appropriate steps for fitting a CROS/BiCROS system in our fitting software, which again is Beltone Solus Max. So a CROS transmitter is used to help those patients with single-sided deafness.

So this is the loss of all or almost all hearing in one ear. Or it could be a patient who has very poor word discrimination in one ear, making aiding that ear with a traditional hearing aid very difficult. And I think we've all had patients like this where they have a binaural loss, the loss is sort of symmetrical, but again, one ear just has really poor word discrimination, but we still fit them with binaural hearing aids. But the patient

comes back reporting that they feel like that bad ear, the poor word recognition ear is tripping them up, making it even harder for them to hear with that better hearing ear. So this is where a CROS transmitter might improve the situation.

So losses like these can be congenital, meaning from birth or acquired from something like an acoustic neuroma, a viral or bacterial infection, an autoimmune disease, a physical injury to the head or ear, an acoustic noise injury, a circulatory disorder, or that unknown etiology. Now obviously one of the main consequences of single-sided deafness is difficulty hearing from that impaired ear, meaning the patient isn't getting any auditory awareness from that bad ear side, which is just really awkward 'cause for environmental safety reasons, we really would like to know what's happening all around us. But patients can also experience poor sound localization. And as we all know, you really do need two ears to help with localization because of that timing difference for when the sound arrives to one ear and then makes its way around our head to then reach the other ear.

That can also having single-sided deafness can also help also, sorry, having single-sided deafness, a patient can also have difficulty understanding speech and noise. So again, with our two ears, it's a lot easier to pull out the background noise from what they want to hear when both ears work together. But when it's just one ear doing all of the work, sometimes it can't pull that background sound out to really help with speech understanding. And that can lead to something called auditory fatigue where there's more cognitive load occurring when just one ear is hearing than two. So again, if all of the sound is being processed on one side, that one ear is responsible for everything, not only does that just fatigue the patient auditorily, but physically the patient might notice that they're just a lot more tired because only one ear is carrying the weight of two ears.

Now also studies have shown that asymmetric hearing loss can result in a reduced quality of life, comparable or even exceeding that of someone with binaural hearing loss. And that a profound unilateral hearing loss or single-sided deafness can have a substantial impact on the patient's socialization, learning, and work productivity. So how can we help these patients with single-sided deafness or asymmetrical hearing loss? Well, that would be with our CROS transmitter. Now it might've been a while since you fit a CROS transmitter or even really remember talking about a CROS transmitter. So let's review for a moment. So CROS is an acronym that stands for contralateral routing of signals, and is usually seen on an audiogram like this.

And so it works and not the patient would wear a hearing aid on that normal hearing ear. So in this instance the right side. And then they would be wearing a CROS transmitter on the bad ear, which is our left ear. So when sound is then heard on that bad ear side, the left ear, it's picked up by the microphones on the transmitter and then now wirelessly streamed over to the normal hearing ear where then that right ear hears the sound that was on the left side of the body. So this allows patients to have sound awareness and audibility from that bad ear side, which secondarily can help with sound localization. This happens because sound arrives to the better hearing ear with a slight delay mimicking that natural process for localization 'cause the sound originate on the left, it takes a moment to transfer over to the right ear.

They're hearing it normally in the right ear anyways and that can help some patients with localizing. But as with any type of hearing aid fitting, this kind of new way, this CROS transmitter way might seem strange to some patients at first. But generally, most patients have overcome that odd feeling of like, "I'm hearing what's on my left side, on my right side." They can get past that and then it really, they have a great experience with the CROS transmitter. As far as localizing, some can. Their brain can adjust and really they can localize just as well as someone with normal hearing. Other

patients localizing, they're still not that great at doing it. So improved localization should never be the goal of fitting a CROS transmitter.

It's more just sound awareness from that bad ear side. So now if a patient has some hearing loss in that better hearing ear, we would fit what's called a BiCROS or bilateral contralateral routing of signal. And this is what an audiogram might look like. So in this case, the patient would wear a hearing aid on their better ear, so the right ear, and then again they would be wearing the transmitter on that poorer left ear. And so when sounds are heard on that left side, the microphone's on the transmitter pick up that sound. Again, they wirelessly stream that over to the hearing aid side. Where because of that hearing loss, that sound is then amplified and then kind of registered in that right ear.

So our CROS transmitter is only compatible with Beltone Serene and only available in that microRIE style. And since our microRIE has that accelerometer component which unlocks TapControl , that means our CROS transmitter also has TapControl . Our CROS transmitter comes in the same eight colors as our Beltone Serene RIEs and is also IP 68 rated. And as I stated earlier, our CROS transmitter is rechargeable and is compatible with any of our three charger options. And again, 'cause it's the microRIE housing style, the number eight will be in that charging well. Now how long does the charge last on that transmitter side? Patients can get up to 16 hours of use. And by use, I mean it's streaming to the better hearing side 100% of the time on a three-hour charge.

And so for me, since we all have to sleep a little bit, 16 hours is kind of all day use for a patient. And just to prophesize here, the 16 hours is just for the CROS transmitter. The actual hearing aid side, if it is our microRIE, we'll still provide the patient with that typical use time of 24 hours. So the CROS transmitter can use the low, medium, or high power SureFit three receivers. There is no support for M&RIE or ultra power

receivers, but if you need to use one of those two on the better hearing ear, please by all means, fit what's appropriate for the patient for the hearing loss on that better ear. Now since the ear requiring that transmitter has no usable hearing, the receiver strength doesn't really matter for this configuration.

So we recommend that you choose the receiver based on the patient's individual needs. So if they have a smaller ear canal, you might wanna use the low power 'cause it's a smaller size receiver. You might have a patient that would like their receiver to match their hearing aid side or you might have a patient that would like their transmitter receiver to just look very different than their hearing aid receiver. So there's really no correct, it's more what is best for the patient. Also, any of our SureFit three domes can be used with the CROS transmitter. Again, the domes on the transmitter side don't have any acoustic effect and you can fit any dome you want. However, we recommend starting with the open dome on that poorer ear because it might be the most comfortable for the patient 'cause it has that nice large vent.

It allows air to circulate through the ear canal just like the patient's been used to with their unaided ear or how they're used to before they come in and get help from you. So again, we recommend starting with open, but if the patient has worn a CROS before or your own prior experience, you just know most patients prefer some more occlusion, please go ahead and occlude the patient then. So any of the Beltone Serene styles and technology levels are compatible with the CROS or BiCROS configuration. Now the question might be what technology level to fit on that better ear? And our collective answer is it's always best to fit the higher level of technology as it offers more advanced features and can more accurately fit the audiogram and it just offers more options for programming.

So for those of you that could not join me on Tuesday, I just wanna quickly review what Beltone Serene has to offer for your patients. So Beltone Serene comes in our new

rechargeable microRIE style that 16% smaller than our Beltone achieve miniRIE and can provide your patients a maximum of 30 hours of battery life. But again, we'd say more typically 24 hours of use on that one charge. As with our other products, Bellone Serene is again IP 68 rated, uses the push to a sign feature, has the LED light for charging indications on that single push button, and has all of the connectivity. So 2.4 wireless, ear-to-ear communication, MFi and hands-free call, and the direct streaming with Android, so that ASHA protocol.

And the microRIE has TapControl is compatible with our new TV-Streamer+ and utilizes Bluetooth low energy audio which also means that our microRIE is what we call Auracast ready. And tomorrow, I will talk more about the TV-Streamer+ and the new Bluetooth protocol and what Auracast is. Now our non rechargeable 63 and 64, again very similar technology inside. So our 63 RIE uses a 312 battery and has that simple push button. And our 64 uses a 13 battery and has that multi toggle button and it has an ear level T coil. So if that's important to a patient, that is the solution for them. It's also all weatherproof with that IP rating of 68. Both can use that new push to assign feature.

And again, all the connectivity 2.4, ear-to-ear, MFi enhanced free, and that ASHA streaming. Plus they are compatible with the new TV-Streamer+ and again utilize that new Bluetooth slow energy audio protocol. And again it means they will, they are, 'cause you can order them now, Auracast ready. Just to note that TapControl is not available on the battery operated Serene RIE. So in order to fit our Beltone Serene CROS transmitter, you need to have Bellone Solus Max 1.17 installed. And since I know you all could have started downloading the fitting software about two weeks ago, hopefully most of you have done this. And I'm just gonna quickly walk through how you would program up a CROS transmitter for a patient.

We really strived hard to make fitting a CROS transmitter easy. So in our fitting software, there is no designation between fitting it as a CROS, so normal hearing in one ear, or a BiCROS, having some hearing loss in the other ear. And I will show you how easy it is to do that. So from the launcher screen, you can see that Beltone Serene CROS transmitter is kind of its own entity here. So the transmitter is a transmitter, plain and simple, it is what it is. If you wanted to simulate a fitting for some reason, you would need to go up to the Beltone Serene hearing aids and click on let's say Beltone Serene 17, pick a model, And we would assign that for the right ear 'cause our right ear is our normal hearing ear.

We would then click on the Bellone Serene CROS transmitter box, and we would assign the transmitter to our left ear. We would click on Simulate and walk through it. But if you actually ordered one of these for your patient, so you actually ordered a Bellone Serene 17 for the better ear, you ordered a CROS transmitter for that poorer ear. Just put the receivers on, turn the units on, and then click on the Continue to Beltone Solus Max button. So then you'll be to the assigned instrument screen, where again, notice how the fitting software knew that the transmitter was on the left ear, because I had a left receiver on it and it utilizes that automatic receiver detection.

And then notice how the nomenclature here for the CROS transmitter is CSE, that means CROS Serene transmitter. And then notice how the hearing aid on my right ear is SER, meaning it's the serene hearing aid. So you can assign these hearing aids using the Assign button right here on the screen or again pushing the push button on each one of these devices for the push to assign feature. And then each one will appear on the instrument tabs on the sidebar and then you would click on Continue. And then the fitting software does its kind of initial fitting, it just reminds you again that the transmitter is over on the left ear side. You just need to click Continue.

If for some reason you grab the wrong hearing aid and you meant for this to be a binaural hearing aid fitting, this is kind of a reminder of like this is just a transmitter, hang on, let me go get the actual real hearing aid that I wanted to fit this patient with, not just a transmitter. So when you get to the physical property screen, again you will notice we have this little CROS icon that will be displayed throughout the fitting software. Just reminding you which ear has the transmitter side on it. Notice over here on our right ear, our hearing aid ear, we have the dome recommendations. Because this is a real hearing aid, we would have all the same applications of fitting binaural hearing aid.

So we recommend for this specific audiogram that we use an open dome. Yes, I agree. When we look on our transmitter side, the left ear, notice we don't give a recommendation for a dome because again, acoustically it does not matter. But we recommend trying first with the open dome and then based on the patient's experience, you can always go ahead and occlude them. So just when you don't see that ribbon under the transmitter side, that was intentional. So once you selected your domes, you'll click Continue, you'll be brought to the MSG calibration screen. Or again, we're only calibrating for the right ear as that's the only side that has any gain and that has the receiver on and working.

Again, our transmitter side is not giving us gain. It's just sending sound information over to the hearing aid side. So no reason to calibrate. So once you get into the fitting software, again there is our CROS icon for the gain because again, there is no gain adjustment. You're not fitting gain on that transmitter side. And even in the sidebar, you notice where that transmitter icon is. Now when you fit a CROS with your patients, sometimes you get this complaint or this talking track from patients where they go, "I feel really plugged up on the ear that has the hearing aid." And this could be, 'cause they're not used to hearing amplification on that normal or more normal hearing ear.

So this specifically happens when they're amplified and there's someone sitting just on their right side or they're picking up a phone and holding it up to their ear. So our experience is if you actually increase gain a little bit, that can reduce some of that plugged up feeling that patients feel. Now you might notice in the gain chart here for the right ear that my gain has gone negative. So you might be wondering what that is all about. So that is a new feature that we have called negative gain and it's new in Solus Max 1.17. So negative gain is when the output signal is attenuated relative to the input. So when would you need to make the gain negative?

Well, you'd want to do this for any hearing aid fitting where occlusion, tubing resonances, or impedance differences are noticed. But specifically for a CROS fitting, you'd want zero dB insertion gain on the normal hearing ear. So in other words, you don't want the normal ear to feel occluded. Now remember the hearing aid microphones are on for that pretty much normal hearing ear. So allowing the gain to go negative can help reduce some of that occluded feeling. Now to make the gain negative, you can make the gain negative for all frequencies. But if you are trying to just make it negative in the low frequencies because of you know the CROS fitting that you're doing, you need to make a little bit of a change here.

You need to go to the display options and between the two gain graphs and then uncheck the vent corrections. Vent corrections prohibits you from seeing how negative you've brought the gain down. So by unchecking that, you can see that you are now in the negative range and how far negative you are. The max that you can go is to minus 10 dB. So that's the maximum. So just showing you that even on the advanced feature page, the features for the CROS transmitter are graded out. So again, when you fit with a higher technology level, you have more advancements for the features on that hearing aid side. But you still, again, you can adjust what needs to be adjusted on the hearing aid side.

And even just showing you that with the Tinnitus Breaker Pro, you can still activate that for the hearing aid side. It just won't be playing any sound, any mask or sound in the CROS side. Now you might have noticed that there's a new tab under the advanced features called CROS. And on this page, you have the one and only feature for the CROS transmitter, which is balance. Now this feature allows you to adjust the output of the CROS microphone relative to the hearing aid microphone, or you can think of it as the ratio of sound heard from the CROS side versus the hearing aid side on the better hearing ear. So volume adjustments again for that hearing aid side are completed on the gain adjustment screen.

In a way, this replaces that microphone to DAI adjustment that you had with our old corded CROS transmitter. Now for most fittings we recommend that you first fit gain to the hearing aid prior to coming here and adjusting the balance for the CROS transmitter. The balance slider defaults to zero for all fittings, meaning that the output between the CROS transmitter and the hearing aid is equal. So they're hearing what's coming in from the hearing aid microphones volume equal to, quote, the volume from the CROS transmitter. So when adjusting the balance, if you want more sound from the CROS transmitter, you would make that more positive. And if you wanted more sound to be blended in from the hearing aid microphones, you would slide the balance more negative.

Now here's a quick video to help explain this a little bit better. So again, we would place the hearing aid on our better hearing ear and that is our right ear. And then we put our CROS transmitter on the left side, our poorer hearing ear. And so again, the slider starts at zero, but when we slide the slider closer to the CROS microphone, it's increasing the input from that CROS microphone or from that CROS transmitter. And again, therefore the number displays positive. When we move the slider closer to the hearing aid microphones, it's decreasing the input from the CROS transmitter, therefore

it displays a negative number. Now your patients will have access to the balance slider in a way on their HearMax app and ear level.

And we'll talk about that in a moment. So under manual controls, you have the option for the push button on that CROS transmitter side to change the programs and to activate streaming just like it does on the hearing aid side or that push button can be set for volume up and down on the hearing aid side. And then for what's now called CROS up and down. And what's actually changing on the CROS transmitter side is that balance. So CROS Up changes the balance so that more of the CROS transmitter is heard on the better ear side, or CROS Down means less of the CROS microphone sound is mixed into the hearing aid side. So you also notice that the volume control is no longer the same since one's volume, one's really the balance.

So the volume control range is no longer synchronized between the ears. So just pointing that out that they are now kind of two separate entities. And you'll also notice under the beeps, there are no beeps for the CROS transmitter. Any beep, whether it's for the transmitter or the hearing aid side will be heard on the hearing aid side. Those low battery indicators should a patient hear one for the CROS transmitter will be heard on the hearing aid side. So again, no tone on the CROS transmitter and all of the beep tones or melodies or frequency, it's exactly the same as it is for the hearing aid side. And then the saving process is just as if you were saving a hearing aid, just you can save to the database to the instrument only.

And again, it just has that transmitter icon. Again, just reminding you, I just wanna point out that there is a CROS/BiCROS feature animation under the help and feature demonstration guides. And then there's also a quick fitting guide for you under that Help menu. So now we've walked through a fitting through Beltone Solus Max. Let's talk about pairing to the HearMax app. So our Beltone Serene CROS transmitter system can very easily be paired with smart devices and in the HearMax app, and they

compare to our TV-Streamer+ and our older or legacy accessories as well. So the pairing process for a CROS and or BiCROS system is exactly the same as the pairing process for any set of binaural hearing aids.

Our apps, the cell phones, the accessories will automatically recognize that the pairing is that CROS/BiCROS configuration and will accommodate the appropriate controls. So here you can see on my iPhone, it's saying I have a Serene hearing aid plus I have a Serene CROS transmitter. Notice the nomenclature there. Once you're in the Beltone HearMax app, you will notice that that volume control bar is expanded or shows both a right and a left by default. And this is because the slider for the better hearing ear is adjusting gain or volume for the hearing aid side. And the slider for the poorer ear will be adjusting the sound balance of that CROS transmitter. So to help your patients, that CROS icon that you saw in the fitting software is also here in the app.

So this is under the status, they can just see how much charge is in their hearing aid and their transmitter. And then if they were dumped into the charger, as I like to say, again, you see the status with the little lightning bolt, meaning they're both charging. So as I mentioned a moment ago, the CROS transmitter can be paired to our new TV-Streamer+ and our other accessories. Now when streaming audio, either a phone call or from one of our accessories, the audio will not stream to the CROS transmitter. Audio will only stream to the hearing aid side. So when streaming audio from our TV-Streamer+ or our myPAL, the microphones on the transmitter will be muted, okay?

When a patient has their transmitter on, they're enjoying conversations but then they get a streamed phone call and the patient answers that call, the transmitter stream will temporarily be paused, and that transmitter stream or microphone pickup will resume once the patient hangs up that call. And this is similar, this behavior of the CROS transmitter, not streaming accessories or stream phone calls is similar behavior to other hearing aid manufacturers that have a CROS system. So just to quickly summarize,

and again, if you have any questions, now would be a great time to type them in. So as soon as I'm done with the summary, I can go ahead and answer those questions for you. So just summarizing our Beltone Serene now has a wireless and rechargeable CROS transmitter.

The transmitter can be configured for that CROS fitting where one ear is healthy and the other ear is unaidable. Or for that BiCROS fitting where one ear is compromised, so has some hearing loss and the other ear is unaidable. Now to fit our Beltone Serene CROS transmitter, you can use a low, medium, or high power SureFit three receiver. And we just recommend starting with the open dome on that transmitter ear. But again, do what's best for your patient. And within Solus Max you have controls for the CROS balance. And to help with occlusion, the gains can now go negative. And again, the gains can go negative for any of our Beltone Serene products and the gains can go negative for all of the frequencies.

So with that, I just want to thank all of you for taking a quick 30 minutes out of your day to join me to hear more about the our Beltone Serene CROS transmitter. I don't see any other questions have come in, so I will go ahead and close the session. So again, thank you all so much for spending 30 minutes with me. And again, I hope to see you tomorrow for our last session on our TV-Streamer+, Bluetooth Low energy audio, and Auracast. Bye everyone.