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## Joining the Path to Ponto

Presenter: Lisa Reedy, AuD

- [Lisa] Hi everyone, thank you so much for taking time out of your busy schedules to watch this presentation that we're doing today called "Joining the Path to Ponto." My name is Lisa Reedy, I'm an audiologist and clinical territory manager with Oticon Medical. So I've been with Oticon Medical for about four and a half years, and I currently cover the Midwest territory. So let's go ahead and dive right into the presentation, and you can learn all about Ponto and working with Oticon Medical. Our learning outcomes are as listed here. So, after this course, participants will be able to identify potential candidates for a Ponto system. They will be able to differentiate the processors that are available with the Ponto system and also be able to identify the accessories that are available in the Ponto Bone Anchored System.

Next up, we have here the standard financial disclosure that you see on these presentations. I am a paid employee of Oticon Medical, I don't have any non-financial disclosures to make. This course is going to describe the Oticon Medical Ponto System and Sound Processors. And finally, this course has been approved for 0.1 CEU by AAA and by ASHA. So here we have our agenda for today. First, we're gonna go over Bone Anchored Systems in general, including how bone-anchored devices work, what the candidacy is for them, and things to know and keep in mind when you're fitting a bone conduction system. Next on the agenda, we will go over the specifics of the Ponto System itself, including our surgery and our processors.

In our next main bullet point, we will then take a quick peek at the software. More in-depth information about fitting our devices is available in other courses when you are ready to learn more. And finally, with our last bullet point, we will wrap up the information that I can give you about how to work with Oticon Medical. So let's jump in and start by going over the basics in understanding and working with Bone Anchored Hearing Systems. First up, we will talk about how bone conduction works in general and how the systems overall generally work. So what we have here is a table that shows the available types of commercially available bone conduction hearing

solutions. There are two basic types of devices, Direct Sound Transmission and Skin Transmission.

Of those skin transmission solutions on the right, we have non-surgical ones. These are ones where a user would wear a device on a soft band or a headband, possibly connected to glasses, or using a sticker to stick it to the skull. Then we have passive transcutaneous devices. This is where the transducer is actually external to the skull. And then on the left side of the chart, under Direct Sound Transmission, we also can subcategorize into two other types. One is an active transcutaneous device where the transducer is actually implanted, and the second one we have is the percutaneous devices, which is where we would categorize our Ponto System when worn on an abutment. The Ponto Bone Anchored Hearing System has three main parts.

If we start from the outside and work our way in, then we begin with our external sound processor. The sound processor will take the acoustic sound signal from the environment and transform that sound into vibrations. The sound processor then snaps onto an abutment, which is a very small post. It comes in varying lengths that is dependent on skin thickness. It's available in six millimeters, nine millimeters, 12 millimeter, and 14 millimeter lengths. That abutment then connects to a very small titanium implant that is secured in the bone of the skull, and then that little green screw is what connects the implant to the abutment. The implant itself is either three or four millimeters long and that is dependent on bone thickness.

The sound and the speech that the sound processor has collected externally is transmitted via vibrations to the implant that is embedded in the skull. Bone Anchored Hearing Systems take advantage of the natural process called osseointegration. When that small titanium implant is surgically placed in the skull bone, the bone itself actually begins to grow onto the implant, creating a strong physical connection between them. This is because the bone cells naturally want to integrate with the implant and its

surrounding bone, and as a result, they established the direct route for sound transmission. When Oticon Medical entered into the market, a Bone Anchored Hearing System or as we call it BAHS, the BAHS surgery was, you know, it really was a surgery.

But then in 2015, Oticon Medical launched the MIPS procedure. MIPS stands for Minimally Invasive Ponto Surgery. It's a unique and suture-free procedure. It takes only a few minutes, but it has a huge impact on quality of life for patients. We have seen the uptake of MIPS across the world. And now, as of 2021, we have the new minimally invasive MONO procedure, which has made another leap forward in innovation by reducing drilling to just one single step. So we really have moved this from a surgery to a procedure, and that can be comforting for patients and good for them to know when counseling them that how simple this procedure really is. So let's dig a little deeper. The MIPS procedure is completed in six easy steps.

First, you prepare the site by choosing the location. You may need to remove any small amount of hair if necessary, and then you measure the skin depth. Once the local anesthesia has been administered, a biopsy punch is done and that removes the skin down to the bone. A cannula is then inserted, which acts as a drill guide. The cannula itself is the same circumference as the biopsy punch, and also the same circumference as the implant in abutment itself. So what that means is we're not having to do any extra cuts, causing any extra additional trauma to the skin. The surgeon then drills through the cannula down to three millimeters while saline is administered. After checking to confirm that solid bone is still down there, they then drill from three millimeters down to four millimeters.

After checking the bone once again, the widening drill then is used to widen the space in the bone to be ready for the actual implant itself. Step five is the implant installation, and then we complete the procedure in step six with a healing cap and a dressing. So, here on the slide, you can see what things look like post-op compared to the previous

way that surgery was done, and then looking at how the MIPS procedure looks, even just one week post-op. So MIPS, again, is performed with minimal skin penetration, and so that's less interference to soft tissue than compared to other methods. So this reduced level of intervention aims to minimize post-op complications.

We believe less trauma leads to less complications as well as better cosmetic outcomes for our users, as you can see on this slide. A recent literature review found 98% of patients report an increase in quality of life after Ponto implantation. So obviously, this increase is not small, and in fact, it's actually on the same kind of magnitude that we see in cochlear implant patient outcome studies. Additionally, 95% of follow-up visits need no skin-related after-care, and we have excellent implant survival rate of 98%, and that includes traumatic events too. So you know, for example, kiddos riding their bike and they crash into a tree, you know. An implant survival rate of 98% includes those kind of incidents as well.

So this is truly a small procedure that changes lives. There's no doubt in the success that we've had with the minimally invasive Ponto procedure, but we are always striving to find ways to improve on something that is already great. By introducing the world's first one step drilling procedure, we feel that we have taken another step forward. Now, the new minimally invasive MONO procedure has made this other leap in innovation by reducing drilling to just one single step. We're using the same cannula as we use in the MIPS procedure as a drill guide, and the specially designed MONO drill allows surgeons to drill down to the widened four millimeter depth in one single step instead of drilling to three, then drilling to four, then using a widening drill.

While using one drill instead of three does save some time, that's not really the goal of the MONO procedure. The importance of using just one drilling sequence is that we're exposing skin and bone to less heat and less trauma than in a three drill sequence. And so, therefore, that's gonna be resulting in less damage to the surrounding tissues, and

that will mean better and more efficient healing. For those kiddos who are too young to have surgery or anyone who has any contraindications for surgery, we do have our Softband 5, so that users can wear a Ponto without having the surgical implant and abutment. Our Softband 5 has a completely redesigned connector plate. It also has an emergency safety release, so if it happens to slide down and end up around their neck, we don't have to worry about any kind of choking hazard.

And there's also a length adjuster. Softband 5 gives the clinician more options to fit and then individualize it for both unilateral and bilateral hearing losses. We have eight different colors available with matching parts on the connector plate that will be in dark or transparent colors, depending on the color of the band. And for best customization, along with length adjusters, we've actually introduced two adjustable sizes. So we have extra small/small, which will fit most of the kiddos that you would see, and then medium/large, which would work with most adults. This also gives the clinician an additional option for making sure we get the fit just right. It's always a good reminder that once our kiddos reach the age of five years, barring any contraindications, we should advocate for those children to have the implantation completed as soon as possible.

Even when corrected in the fitting software for use of a Softband, we still do not have sound transmission on the Softband that is as efficient as we see in a Direct Sound Transmission system with the implant and the abutment. Those mid to high frequency ranges are gonna be the ones that are most compromised in the Softband fitting, and sometimes by as much as 10 to 20 dB. In young learning minds, we know that that can definitely have an impact in the school setting and on learning outcomes. Here we have a good overall look at the breakdown for candidacy for BAHS devices. So one type of potential candidate are those patients who have conductive or mixed hearing losses. The right candidate will have a bone conduction pure-tone average of 65 decibels or better at 500, 1000, 2000, and 3000 hertz.

Patients should be fit bilaterally if their hearing loss is symmetric. If it's asymmetric, then we should be fitting that patient unilaterally on the side with the better bone thresholds. Another type of candidate are patients with single-sided deafness, where their contralateral ear is within normal hearing range. And again, all surgical candidates must be five years or older. So, looking in a little deeper at candidacy. Under that candidacy for conductive and mixed hearing losses, these are your patients who have, like, Microtia, Atresia. They have chronic ear infections, middle ear diseases, and syndromic patients like those with Treacher Collins, Goldenhar, and CHARGE. Those who have fluctuating hearing losses are especially good candidates for bone conduction systems, because whether they're having a healthy ear day or an unhealthy ear day, their bone conduction thresholds remain constant.

So therefore, fitting them with a bone conduction device, their fitting can actually remain the same. So then you know there's no risk of over amplification on the good days or underamplification on the bad days, which can be a risk that you have with air conduction devices. Additionally, research suggests that if a patient has an air-bone gap greater than 30 decibels, then speech recognition is likely to be better with a bone-anchored hearing device than with a traditional hearing aid. The reason is because traditional air conduction hearing aids require higher gain since they have to overcome that air-bone gap, and higher gain can lead to excessive whistling or feedback as well as a degraded sound quality.

This higher gain needed by hearing aids, as I said, it can cause problems with feedback because that louder sound delivered by the loudspeaker can leak out of the ear canal and be picked up by the microphone of the hearing aid. When we think about ways that we can combat that leakage from the device, we would often try to fit a tight earmold to prevent sound from escaping the ear. Unfortunately, in patients with a lot of, you know, middle ear diseases, that can not only be uncomfortable, but if they have

chronically draining ears, chronic ear infections, that can also worsen their infection issues. A high amount of gain can also cause distortion in the signal that's delivered to the patient as the hearing aid is pushed closer to its output limit more often.

Since a bone-anchored hearing device does not have to compensate for the air-bone gap, it uses less gain, which leads to a better sound quality and less problems with feedback. As an added bonus, as the sound is transmitted by vibration through the bone, the ear canal can remain completely clear. So again, this is especially important for those patients who have chronically draining ears. We don't have to have anything in their, you know, kind of making things worse and giving more potential to have continued middle ear issues. The other type of candidate is someone who has single-sided deafness. In this instance, a sound processor is placed on the non-hearing ear and picks up sound that is then transferred to the functioning better ear cochlea on the opposite side via bone conduction.

So in this scenario, a bone conduction system is working similarly to a CROS device, but it only requires wearing one device, only using one battery. And again, their good ear remains open and clear and unobstructed. By definition, a single-sided deafness candidate for a BAHS device does need to have normal hearing in the good ear. For these types of patients, their biggest hearing issue is caused by their own head because the head shadows the sounds that originate on the dead ear side, but it doesn't affect all sounds equally as we know. We're pretty much looking at 1500 hertz and above, and it can cause attenuation of up to 20 to 30 decibels in those high frequencies. So the goal with a single-sided deafness fitting is to provide amplification in the high frequencies, and you won't see much if any gain in the low frequencies.

So that's what you'll see when you're looking in the software and why it's important to designate in your fitting, whether it's a mixed/conductive loss versus an SSD type of loss. So, who's not a candidate? People who are not typically good candidates, think

of patients who have been through cancer treatments as that can affect bone quality, and therefore, affect the ability of the implant to osseointegrate. Other questionable candidates are patients with uncontrolled or poorly controlled diabetes. If one has poor circulation, then they have poor blood flow, a poor blood supply to the skin results in skin that doesn't heal properly and/or stay healthy. And as mentioned earlier, if the patient is under the age of five, then they are not a surgical candidate per the FDA regulations.

Other than the age of five, items one through three are not necessarily deal breakers, they are just things to keep in mind when considering candidacy, and they will be things that definitely the physician will be considering as well. So now that we have our types of candidates nailed down, let's talk for a second about amplification principles in BAHs devices. The topic of output as it relates to bone-anchored hearing devices, can sometimes be confusing. For clinicians who've been focusing on hearing aids for a long time, it takes a time to shift the brain to think about things in this different way. So let's just spend a few minutes going over this. So in the hearing aid world, big hearing losses require a lot of amplification.

So with a lot of amplification, we need to keep in mind the MPO, or Maximum Power Output, because as you know, if hearing aids are turned up too loud, they have the potential to cause additional hearing damage. So the question is, "Do we have to deal with this same issue in the bone-anchored world?" In bone-anchored devices, we are not dealing with max power because we are working with force instead of power. So instead of MPO, we're working with MFO, Maximum Force Output. And while we can pump air conducted sound down the canal loud enough to cause damage, it's actually physically impossible with all bone conduction devices on the market to be able to shake the skull hard enough to cause any hearing damage.

And you know this, because when you are doing an initial audiogram with your patient, you can never reach an uncomfortable loudness level in the sound booth when using the test band, so you're never going to see a warning about the possibility of overamplifying your patient when you are fitting even SuperPower devices. Because BAHS devices have a reduced maximum force output when compared to the maximum power output in hearing aids, bone-anchored devices do have a reduced output dynamic range. We are reproducing that range of the softest sounds to the loudest sounds in a much smaller area as compared to traditional air conduction hearing aids. So if you have also fit cochlear implants, this concept would be familiar to you as well, having that limited output dynamic range.

So practically, what this means is, we need to make the limited output dynamic range in bone-anchored devices really count. So in checking the effectiveness and in looking at patient outcomes with bone-anchored hearing devices, we don't wanna be focusing on the softest sounds that your patient can hear. So as you can see here, that shaded area in orange is our output dynamic range. And currently, if someone whispers to that patient, that whisper is outside of that dynamic range. If we adjust the fitting so that the patient can hear that whisper, all we end up doing is moving that output dynamic range up. And so that results then in a lot of the sounds in our speech banana being distorted because of that finite amount of power in bone conduction devices.

So turning up the gain for soft sounds does not widen the output dynamic range, it just moves that range up and gives the focus to quieter sounds. And that makes the patient less likely to be able to hear clear conversational speech and especially any speech that's louder than normal conversational speech. With a limited output dynamic range, our goal is to allow the patient to hear conversational speech, not necessarily to be able to hear the softest sounds. Therefore, our outcome measures for patients with these types of devices should consist of speech or even better speech-in-noise testing

at conversational levels, so we can understand the true benefit the patient receives from wearing a bone-anchored device.

If you would like, we do have suggested protocol for testing candidacy and recording outcome measures for bone-anchored devices. Just reach out and we can send you our testing protocol materials for both adults and pediatric populations. When our device output is limited as it is in all bone-anchored devices, we can maximize the output by choosing a SuperPower device for the patient. Again, there is no risk of overamplifying. So even if they are a candidate for a normal powered device, getting them a SuperPower device is not putting them at any risk for overamplification. Luckily, Ponto has the only abutment-level SuperPower device on the market and it's able to fit patients who have up to a 65 dB bone conduction pure-tone average.

And of all available abutment-level devices, we have the highest MFO with our Ponto 5 SuperPower, as you can see here in orange on this graph, that's comparing the outcomes and output of different commercially available bone conduction devices. So next up on the agenda, let's take a closer look at the advantages that the Oticon Medical Ponto Bone Anchored Hearing System can bring to your patients. We believe that the Ponto System is a future-proof system because along with being a small implant, it is also non-restrictive because it can easily be made dormant. And it's universal as well, because it's compatible with other system's sound processors. So it really is the confident choice for your patients. As these surgeons implement the newest minimally invasive procedure called MONO, we are finding that the procedure time has averaged only 10 minutes.

So think of how much anesthesia time that saves up as well as overall OR time, that we are saving up by using these procedures. Second, 97% of patients had no or only minor skin reactions resulting in fewer follow-up appointments with the physician, and then better overall adaptation to device use. As we have gathered this data, we also

found that 95% of all patients reported increased quality of life on the Glasgow Benefit Inventory after they have had the MONO procedure. And finally, as the implementation of the MONO procedure has reduced the time necessary to complete the procedure as well as reduced the number of follow-up visits for each patient, we now know that this is proven to reduce costs to the clinic as well as costs to the patient.

On the processor side, our Ponto 5 family includes two different options. The Ponto 5 Mini is the smallest bone anchored sound processor available and has a fitting range up to 45 dB for a bone conduction pure-tone average. The second option is our Ponto 5 SuperPower, which is the world's most powerful abutment-level processor and can fit up to a 65 dB bone conduction pure-tone average. Though it still has the familiar Ponto shape that we've seen from way back in the beginning, our current Ponto family has changed a lot over time. The underside of the Ponto processor is a black shell and coupling, which creates a shadow effect for discrete wear. We have an LED light on the front of the device and that can be turned on or off in the software.

This is helpful especially in the pediatric population, so parents and teachers can know the status of the device at a glance. We also have a place on our devices to add a retention line, and we also have available tamper resistant battery doors for safety purposes. All of our devices have an IP57 rating and have been through extensive testing for durability, ability to withstand heat, moisture, extreme heat and cold, and being dropped. And the device is also available in six different colors. So now, if you've ever fit Oticon hearing aids, then you're probably pretty familiar with the concept of BrainHearing. But if you've heard all of this before, just stick with me for a quick overview. BrainHearing is an Oticon trademark term and is used for all products developed at Oticon, Inc.

, and at Oticon Medical, so in both the hearing aid and the bone-anchored world. We use this as our guiding star for what products we develop and how the features work.

Our goal with BrainHearing is to develop devices that allow patients to easily understand speech and expend minimal effort to do so. Fundamentally, BrainHearing uses the natural ways in which the brain makes sense of sound. The four processes of BrainHearing are described in the image and then we work our way from the top clockwise, so we understand first that the brain must orient itself to the sounds that are going on in the environment. This means that it's trying to figure out where all the different sounds are coming from and what those sounds are, then the brain separates those sounds from one another by comparing and contrasting them.

The brain can then focus in on the important sounds and give less attention to the noise and more attention to the speech or what it wants to hear, and then finally recognize what sounds are what based on past experiences, and then can gather meaning on its way to understanding. By using this natural process in the development of our devices, our goal is that the patient expends less effort to hear in all of their everyday environments. One of our sound processing strategies under the umbrella of BrainHearing is OpenSound Navigator. OpenSound Navigator consists of three modules, analyze, balance, and noise removal. The OpenSound Navigator system is always on, but it only kicks in and it only kicks in at different levels when it's needed.

And that's based on the personal settings in the processor, and it's based on what's going on in the environment around the patient. In the analyzer module, the environment is scanned over 100 times per second in 16 frequency bands, and the sounds are categorized as speech or noise by the voice activity detector based on how the sound is modulated. The level, position, and frequency characteristics of the sounds are also analyzed. To enable users to feel at ease in a sound environment, OpenSound navigator balances surrounding sounds, so the focused sound is clear. And other background sounds, they're still available, but they're not disturbing. In this way, no sounds are eliminated, but individual sound sources are rebalanced to support

the user in separating sounds, making it easier for their brain to switch attention immediately when needed.

The Ponto 5 family of devices can be individually adjusted to support users in these different types of sound environments that they encounter. OpenSound Navigator also attenuates excessive background noise quickly and effectively in the noise removal module. So this includes noise that comes from the same direction as speech, even noise coming from the front as well as all other surrounding noise in 360 degrees. It even removes the remaining noise between words to make the overall background sounds less intrusive. Based on individual needs, noise reduction can be optimized separately for simple versus complex environments in the fitting software. Another big improvement with the Ponto 5 family is OpenSound Optimizer. OpenSound Optimizer breaks the feedback cycle by introducing a breaker signal that briefly pauses amplification and then reapplies it again in a very rapid pattern.

A conventional feedback system typically needs about 500 milliseconds, where OpenSound Optimizer only needs 60 to eliminate audible feedback. These amplification pauses are shown by those dark vertical stripes in the spectrogram that you see there. In between each ultra fast, low energy, dark vertical stripe, the gain is fully restored, thereby making a minimal impact on the speech spectrum and preserving speech effectively. OpenSound Optimizer is also only applied in the frequency bands where feedback is building up. The frequency range is broader in the beginning of the process, and then becomes more and more precise as the system narrows down exactly which frequencies are impacted. Very importantly, the frequencies unaffected by feedback are left untouched by OpenSound Optimizer. Therefore, this is a precise and very targeted attack on feedback, not an overall cut to the gain.

The OpenSound Optimizer system can handle a positive feedback loop gain of +6 decibels before any gain reduction occurs. So now that we've discussed the processors, let's take a look at the connectivity options that are available with the Ponto 5 family. The Ponto 5 family can connect directly to Apple products, and our new Companion app can be downloaded to any modern smartphone. Available accessories include a remote control, a TV adapter, and the EduMic. In order to connect to Android phones, we need to use the ConnectClip accessory. Same for the available phone adapter accessory, which can be connected to landlines and then streamed through the ConnectClip. With the purchase of any Ponto device, one accessory of choice is included, and those accessory choices include the remote control, TV adapter, EduMic, or ConnectClip.

For bilateral patients, they do get the ability to choose two different accessories. Ponto 5 is made for iPhone, it's directly connected to the iPhone. Ponto 5 doubles as a wireless headset without the need for an intermediary device. When making calls, the user's voice is picked up by the microphones located on the phone. The iPhone also doubles as a basic remote control for the Ponto. The Oticon Companion app makes it easy for Ponto users to have additional control of their devices with just the touch of their fingertips. The iPhone or Android is connected to their Ponto using Bluetooth 4.0 or Bluetooth Smart. The Companion app allows users to adjust the volume levels, switch between programs, and access and adjust different accessories they may be using.

The app also offers a "Find My Hearing Aid" function, which is especially nice for kiddos or anyone else who may, you know, misplace their device. Also available is counseling advice, links to user instructions, and a low battery notification. Ponto and the Companion app work with Apple products and with Android phones. Again, please note that direct audio streaming is currently not supported by Android, so you do need the ConnectClip to be able to stream to Android phones. That ConnectClip allows

connection between the Ponto and Bluetooth-enabled phones. When it's connected, the user can stream music, watch movies, and have phone calls go directly to their Ponto. A built-in microphone on the ConnectClip will pick up the user's voice if using the ConnectClip as a remote microphone or for phone calls, and so that's making communication hands-free because you don't need to have the phone actually even out of your pocket or your purse.

The EduMic can be used in four different ways to stream stereo sound to the Ponto 5 and our Ponto 4 family. Microphone and jack mode are designed for both one-to-one and one-to-many communication. So for example, if there's more than one child in the classroom with an EduMic compatible hearing instrument, the teacher only needs to wear one EduMic, and then they can stream either their voice through microphone mode or stream stereo audio using jack mode to all the kiddos in the classroom using EduMic compatible devices. In these modes, the EduMic range is about 65 feet. The other two modes, FM and telecoil mode, are designed for one-to-one communication. In these modes, the EduMic must be within about 10 feet of the compatible hearing devices during use.

FM mode is likely to be used in the classroom where another remote microphone system like a Roger is already in place for another student. So if a student gets a Ponto 5, they can use EduMic as the gateway to that existing classroom system. Telecoil mode may be used in some large lecture theaters that have loop systems installed. So not necessarily in, you know, young kiddos classrooms, but perhaps in college. Outside of an educational setting, telecoil mode may be able to be used when going to a movie, going to the theater, or attending a place of worship if they have a system installed. The TV Adapter 3.0 wirelessly transmits real-time stereo audio from a TV or home entertainment system directly to a Ponto at about a distance of 15 meters, which works out to about 49 feet.

Users can set the volume to their preference level for a listening experience free from any distraction of surrounding noises. The TV Adapter is connected and placed at the TV, and multiple users with compatible hearing instruments can be listening and streaming at their own individual preferred volume level. The remote control, which is roughly the size of a key fob, gives users the discreet control over the Ponto 5 family. Users can easily adjust the volume, switch between different programs, or control connectivity sources. It's simple and easy to use, and the remote control is beneficial as well for users who may have dexterity challenges. The connectivity range is about one meter or three feet between the remote control and the hearing device.

Pairing the Ponto to these accessories is simple. You don't need to do any in-clinic or software setup. You simply open and close the battery door on the Ponto to turn it on, and that starts the three-minute pairing window to connect to the accessory of choice. Now, there is a spot in the software to be able to make modifications to how sound is streamed through different accessories. So for example, how the sound is streamed through the TV Adapter, or how phone calls are streamed through the ConnectClip. And the patient does have control over some of those settings through the app, but you can help them out as well by making adjustments to settings in the software itself.

Next up on our agenda, we'll take a very brief look at the software used to program the Ponto 5 Family, Genie Medical 2023.1. So if you're familiar with programming Oticon hearing aids, you're probably going to immediately recognize the familiarity of the Ponto programming software. We always say, "Ours is orange and theirs is purple." Other than that, you're gonna find most things to be in the same places. It's intuitive and easy to use, and that's gonna help to make your Ponto appointment times nice and efficient as well. Speaking of efficiency, our recent review of U.S. programming data has revealed that the average patient attends only 1.6 appointments, with an average of only 8.5 minutes of programming per session. So, as we think about the fact that 95% of patients report an improvement in quality of life.

Along with this fitting information, the data does show that we have fast, easy, and cost-effective patient care. And I can attest to that from my time in clinic as well. Often I would see a patient for their first fit, and it was pretty much fifty-fifty on whether or not they would show up for their follow-up appointment. And that's just because with Ponto and bone-anchored devices in general, sound quality is very good. It's pleasing, it sounds like what they remember, and so these are generally very happy patients. A first fit of a Ponto device follows four simple fitting steps. First, we connect the instruments to the software using the Noahlink Wireless. Second, select the hearing loss and connection type, so whether you're on the abutment or on the Softband.

Step three is to measure the feedback limit. This is an important step for successful Ponto fitting and should never be skipped. Finally, you measure bone conduction in-situ, which is basically completing a bone conduction threshold test using the user's Ponto device. Because our fitting bandwidth goes out to 9,700 hertz, you will want to complete BC in-situ at all available frequencies in the software, including interactives from 250 to 8,000 hertz, and that's gonna give you the most precise fitting. If you would like more information on fitting, check out the recent presentation from my colleague, Gail Leininger. We will also be doing another AudiologyOnline presentation in January on "Verification with Ponto," which is pretty exciting. I'm looking forward to that one.

So be sure to check that out from my colleague, Dina Panopoulos. To wrap up today's agenda, let's take a quick look at what it's like working with Oticon Medical and how you can get started. If you don't already have an account with us, you can get started by filling out a credit application. Of note, we are a separate business entity from the hearing aid folks at Oticon, Inc. So you do need to have a separate Oticon Medical account with us. Once we have that credit application completed, then your Oticon

Medical territory team can get you set up with the items that you'll need to work with us, so that you can provide Ponto as an option for your patients.

These items include our software, different brochures, order and insurance forms, and demo equipment. And someone like me, your clinical territory manager, can also provide you with more in-depth training as well as assisting with your first appointments, or any tough cases you may encounter. Someone like my partner, Territory Manager Todd Baker, would be working on the surgical side to get surgeons comfortable if they're new to Ponto, and can also provide OR support for the first case or two, or whatever the surgeon would prefer. So I wanna go just a bit further into our insurance process, since this is often an area that results in a lot of questions. Oticon Medical, we do have our own dedicated insurance team and they can take over obtaining authorization for surgeries, upgrades, and Softband orders from your patient's insurance company.

So we can do that work for you and save you some time and resources with your team. However, it's important to know that we do need a packet of documentation to be able to do these things. The process of submitting to the patient's insurance can be initiated either by you at the clinic, or by the patient. We have our paperwork available online and the address is listed here, or you can call the insurance team at 855-400-9761, or you can send an email to [insuranceservices@oticonmedical.com](mailto:insuranceservices@oticonmedical.com) to start the process. Any documentation that we need can also be faxed if that's something that you would prefer. Our fax number is 888-683-8736. Once paperwork is received, the insurance team reviews it to make sure we have everything the insurance companies require.

We do send notification that we have received your materials, but the team will also reach out to you if there are any documents missing, or any further information is required by the patient's insurance company. Different insurances have different and often constantly changing requirements. To move the process along as quickly and

smoothly as possible, providing the same documents every time helps our team to cut down on needing to ask for additional items later. Aside from the intake forms that I mentioned earlier, which are available online, a few other documents are always needed. These documents include a recent audiogram, assigned physician order, also known as a letter of medical necessity, and relevant clinical notes from the patient's last visits with audiology and/or ENT.

Those clinical notes, it's important to have within them something about why the patient needs this type of device, or why they need to have an upgrade. It's important to emphasize, the majority of insurance companies will not accept an audiologist's signature on documents. So paperwork, including that letter of medical necessity should always have the physician's name, credentials, and their signature on them to be accepted. My colleague, Shana Tidrick recently did a presentation on our insurance process. So if you would like more information about this, you can find her presentation on AudiologyOnline as well. All right, so it looks like I have a little bit of extra time, so I will take a few moments here and go into the fitting screen and show you some tips and tricks and important things to keep in mind as you are going through a fitting.

Now, again, your clinical territory manager or clinical specialist in your territory can come out to assist you for your first demos, fittings, any problem appointments that you might have coming up where you're just not sure what to do. So don't hesitate to reach out to your territory team if you would like additional training or additional help with any appointments. So when you open up Genie Medical BAHS 2023, you'll see that you are on the correct fitting formula generation up here in the top left corner. This is just a patient that I made up, so their last name is Test and the first name is Conductive. I do wanna note too that right here, I've already connected my Ponto device, but to keep it from squealing, I've muted it.

So you can mute and unmute the devices when you have them connected with a patient present right here up on the screen. So if you wanted to go into the software itself and play around before your patient comes in, you do have this option on the bottom here to hit SIMULATE and you can go in and, you know, just kind of go in and play around and get comfortable with the software itself. You also then can go into CONNECT and actually be able to connect to the devices. So again, I've already connected, so it's asking me if I want to disconnect. We're gonna skip that. Once you have connected, or if you're connecting for the first time, you would actually probably see this little selection screen.

So this software works with both the Ponto 4 device and then with the Ponto 5 family, either the Mini or the SuperPower. So it just gives you a little bit of information about the device that you're choosing, or the one that you have connected. At the very bottom, you do wanna make sure you're checking these two little boxes here to make sure you are on the right settings. So if you have a conductive/mixed patient versus single-sided deafness, you wanna make sure you've got the right one selected. And then if you're fitting it on the abutment or on the Softband, it's important to select the correct one there, so that the fitting algorithm is processed accordingly. So, let's go back up to the top.

Now, again, as I mentioned earlier, if you have fit Oticon hearing aids, this all should look very familiar to you and the fitting flow path will be similar as well. So you're gonna just kind of work your way across the top here, and then work your way down the left side to make it through all of the steps of a fitting. So once you've selected and connected your device, and you can see it's connected here with a little green bar, then you can go into the actual fitting session. So if you had a device that had already been programmed, for example, if you've done a demo with someone and you're going in to do a demo with another one, you would say Proceed with new selection.

If this is a previous patient and they're coming in for a follow-up, you would say Return to previously selected fitting. So on the fitting screen, the first thing that pops up is your Fine-tuning handles. Now, again, as I mentioned earlier in the session, we wanna keep in mind the idea of the reduced output dynamic range window. So, while you do have the ability to make adjustments in this Fine-tuning screen by changing the gain controls, just keep in mind that whatever you do is going to adjust where that window of dynamic output range is going to be stationed. So again, we're not making that window any bigger, it's gonna stay exactly the same as it is.

You're just kind of changing exactly where that window is placed. So, as I mentioned earlier, then the Feedback Analyzer is gonna be the next step that you will complete in your fitting after you've selected your device and device orientation. So the Feedback Analyzer is a very quick test. It's about 10 seconds of white noise. Once the test has been run, you'll see a little shaded danger zone. It's usually just up here in the peak. If it were on the left side, it would be up there in the peak in blue. So that little shaded area that you'll see when you have finished your feedback test is just kind of letting you know, "Hey, that little shaded area has the potential to have feedback.

" Likely, your actual gain curve will not be up in that shaded area. So once you've run that feedback test, again, it's just a quick 10 seconds. You can see the bar going across there. The background noise level is telling me that my big loud mouth is really loud. But hopefully, when you're actually doing a test with a patient, you won't see anything going on there. But yes, so you can see this little pink shaded danger zone, pink because it's a right instrument, and your gain curve is well out of the way there. So the next thing you'll do is go to BC in-situ. And again, as I mentioned earlier, this is where you're basically doing a hearing test with the patient's own Ponto device.

So, I would typically use a pulsed signal, just like we do in the booth. It's just easier, especially for any patients who might have tinnitus. Another nice feature is turning

Mouse over on. What Mouse over ON does is, you know, when you're presenting the tone, you can usually hit the space bar to present it, hold the space bar down, and then release it when you're done presenting the tone. But some of those patients, especially if they have single-sided deafness, they can actually hear you clicking that space bar. So what Mouse over does is it makes it so that you hover over PLAY TONE here and you'll see now I'm off, now the tone is not playing.

Now I'm hovered over it, the little red indicator is on and it's playing the tone through the device the entire time that you see that little red indicator. Again, it would be blue if we were fitting the left side. So that way, the patient is not hearing the space bar clicking, and you might get a little bit more honest feedback from the patient because they're not being clued in about that clicking space bar. And then, again, you're gonna wanna do 250, all the way out to 8,000 hertz. Hit all those interactives if you can to get the best and most precise fitting. You do get this little box that comes up. So you would say, Yes, re-prescribe settings based on what you have done in the BC in-situ.

Then if we continue down, the next spot is OpenSound Navigator. So we do recommend for first fits to just kind of leave the defaults where they are, and these are the defaults for an adult patient. In simple environments, noise reduction is actually set to zero. So this is back where that little section that I did on OpenSound Navigator, analyze, balance, and noise removal. This is noise reduction, so that's what that is doing. It's doing that third step to reduce the sound between any kind of background noise between words. So we've got Simple set to zero and Complex set to -7. The other default is that we have this medium transition. So as we go from a simple environment to a complex environment, the patient gradually gets more and more support to be able to hear the more difficult the listening situation becomes.

So again, these are the defaults and we do recommend kind of keeping these where they are. And then when they come back for their follow-up, then you can make

adjustments from here. So on the bottom right corner we have, it says currently Open Automatic. So that means OpenSound Navigator is on and working. Now if you happen to be fitting a pediatric patient and they are, you know, six months old, this actually defaults to an Omni setting, an OpenSound navigator is turned off. That's because we know, you know, the device is probably not sitting behind the ear where it's supposed to, it's probably sitting somewhere along the forehead. So you wouldn't want to have OpenSound Navigator turned on, Omnidirectional mode would be a much better setting.

But if you had a patient who perhaps wanted a secondary program where they wanted it to be Omni, you could do that. Or if they wanted a fully-directional program, you could do that as well. So Full Direction takes us a little bit back in time, where instead of OpenSound Navigator being able to access speech wherever it's located, fully-directional is putting patients back in that old style beam form. So if they're in a really noisy environment, they're really only gonna be able to hear the sounds that are coming, you know, directly in front of them, or directly wherever direction they happen to be looking in. If you went to Program Manager, you could add a second program, and you know, be able to add on those things.

I also wanna point out that under here, it defaults to NAL NL1, but if you hit the little side arrow, you can switch to DSL. So I know a lot of pediatric clinics like to use DSL, so this is where you would find the ability to do that. We also have some pre-made programs. Now a lot of patients don't need these because OpenSound Navigator works so well. But if you wanted to have, for example, a Music program or Speech in Noise, or Comfort, you don't have to go in and you know, reinvent the wheel, you can just use one of those defaults for the patient to try. So I just wanna show, for example, now we have a program one and a program two.

If you wanted to make adjustments to the different programs individually, you would make sure that you click that to unlink program one and program two, and then you can just adjust each program individually. If you wanted to make an overall change, say, for example, you know, adding more gain, then you would wanna link those up to be able to adjust both programs together. If we continue down, now this is down here is some stuff that's kind of extra, you don't necessarily have to, you know, go in and adjust any of these things. Transient Noise management is how the system is managing sudden impact sounds. So doors slamming, dishes crashing, things like that. You can make adjustments there.

And then Feedback Management. So Feedback Management is how OpenSound Navigator is actually working. So you'll actually see if you go in here for two different patients, sometimes you'll go in here and see it's set to low and you haven't touched anything, and sometimes you'll go in here and see that it's set to normal and you haven't touched anything in the fitting. The reason for that is because how Feedback Management is as a default is based on the patient's audiogram. So for example, if a patient has pretty much normal bone conduction thresholds, they're all fives and tens all the way across, that patient, we don't need to put a lot of gain into the device for them to be able to hear well.

So therefore, they're not at a very big risk for having feedback, because we're just not pushing a lot of gain. So those patients would actually by default be set to low. Now if they had a big, you know, mixed component bone conduction thresholds at thirties, forties, fifties, for those patients we do need to put a lot more power through the device. So in that case, then you would see that patient set to normal. The other time that you would always see a patient set to normal is if the fitting is on a Softband, just because they're, you know, more likely to be able to be having issues with feedback as well. So that's your Automatics screen.

Another thing that I wanna show you is up in Preferences, if you go to Edit and then go to Pediatric settings. So for those pediatric clinics out there, you have different defaults for what's going on in the software based on age. So zero to one, one to four, four to 18. And you can go through and see what all those different settings are, but I'm just gonna go to the extremes, just as an example. So zero to one, like I mentioned before, that device is probably sitting somewhere on the child's forehead. So Volume control and BUTTONS and INDICATORS are off. On the four to 18, it's more similar to adult settings, but it still defaults for Volume control, that the settings are off.

If we look at OpenSound Navigator settings, again, that child who is about six months old, their device defaults to Omni mode. So OpenSound Navigator is off, there's no noise reduction. But for age four to 18, OpenSound Navigator has been turned on. It's set to that Medium default, just like for adults. There's a little bit less noise reduction in complex environments. Think about a school setting. You know, it's noisy in the classroom, we don't want it to be quite as aggressive so that the child is able to pick up on any incidental learning. So along with changing those settings, you can actually also change the age brackets as well. So now it says age 10 to 18, age one to 10, instead of one to four and four to 18.

So you can change the age brackets, you can change the default settings for volume control, and you can change how OpenSound Navigator works. So again, that's Pediatric settings if you go underneath Preferences. Okay, and then, finally, if we go in to back at the top of the screen, END FITTING, we have Buttons and Indicators, Accessories, which you can get to Accessories either by clicking here or by clicking one of these. Buttons and Indicators, what I wanted to point out, this is where you can adjust how that function multifunction button works on this 5 SuperPower. VISUAL INDICATORS. For pediatrics, your visual indicators are all gonna default to on, but for adults, the only one that defaults on is Start-up.

Now I do recommend for every patient, even for adults, turn on this Service Repair Mode light. When you do that, it's gonna be a long orange flash, and what that's indicating is that there's something wrong internally with the device that, you know, can't be fixed by anything that you could do in clinic. So I like this because, you know, it doesn't happen that often, but this way, the patient can know if their device is flashing a long orange flash at them, you know, something is going on inside the device that needs to be repaired. All right, so, like I mentioned earlier, Gail Leininger has a presentation on the fitting flow that goes a little bit more in depth, but I just wanted to show you some tips and tricks.

And hopefully, this will be helpful to you. So let's click on over and wrap up for today. We have covered quite a bit today in a short amount of time. Please know that overall, we have a lot of other courses available for further training opportunities. I've got a lot of contact information here for you if you would like to make note of it. If you would like to get started fitting Ponto, set up an account and connect with your regional Oticon Medical representatives. Please reach out to our Audiology Support team. That Audiology Support team will walk you through the beginning steps and get you in touch with your Territory Team. Once you are established and fitting devices regularly, they're also available during standard business hours to answer any questions you have regarding Oticon Medical and our devices, and they do that alongside your area representatives.

So Customer Service, Insurance Services, and Audiology Support can all be reached by dialing that same number and then choosing the option that you would like. We have email addresses available for all of them as well. And for anyone who is listening to this that happens to be located in the Midwest, I have my information as well as my partner Todd's information down there for you. So thank you for taking the time to listen to this session on "Joining the Path to Ponto," and I hope you have a great day. Thank you.