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Can Innovations in Sound Therapy Support Relaxation, Concentration and Well-Being for All Hearing Aid Users?

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Presenter: Kyle Harber, AuD

- [Kyle] Hello and welcome. Widex is privileged with the opportunity to present today on AudiologyOnline. We thank you for the time that you take to come out to listen to the course and to learn more about our technology. Today's topic is gonna cover, can innovations in sound therapy, support relaxation, concentration, and well-being for all hearing aid users. I'm really looking forward to taking a deeper dive into this topic with you. Please, if you have any follow-up questions concerns, we'd love to hear from you, and you'll see how you can contact us later on in the presentation. Thank you so much for being here today, and let's dive right in. My name is Kyle Harber. I'm one of the audiologists on The Clinical Education Team.

I'm thankful for the opportunity to present on the topic today. My role on the team is to manage the central region, and ensuring we provide clinical excellence and fitting expertise with clinics that partner with us. This position is a dream job for me as it combines all my favorite parts of audiology. You can always reach me at Kyle.Harber at widexsound.com. Let's take a look at today's agenda. Today's agenda is an exciting one. We're going to start with a review on Zen in the tinnitus approach of Widex. We'll follow that up with a Widex sound relax and the opportunities that it's gonna present for your clinic. How it's gonna pair with the unique and revolutionary amplification that Widex presents with its hearing aid design, some of the research that came out recently and then a little bit of a research review throughout the presentation.

And at the end, we're gonna go over a summary and a case study for where we see this being able to be implemented. But just as one example of the many opportunities that are available. An interested listener today is going to come away with the following learning outcomes. Identifying three new options that have been added to the previous ZEN tinnitus solutions, describing the benefits of utilizing Widex SoundRelax in combination with PureSound. And they'll be able to make adjustments within Widex Compass GPS software to provide new tinnitus and sound therapy solutions for their

patients. With regards to a speaker disclosure, I do indeed have a relevant financial relationship. I'm an employee of Widex USA and receive financial compensation.

With regards to relevant non-financial relationships, there are no non-financial relationships at this time. The Widex difference is made up of three pillars, audiology ally, unique technology, and a premium experience. We hope that each and every time you work with Widex, that you're able to notice this difference. And it's a passion that we have to make sure that we always fulfill these three categories. Widex ZEN started in 2008. Ever since then, each and every opportunity that we get, we improve and evolve from that position. Today is one of those opportunities that we get to evolve from ZEN. And we'll go through all of that, but first, we're gonna start with what is ZEN and how is that tinnitus approach been successful so far?

Then was the opportunity to introduce habituation as the goal for tinnitus treatment. So the points when we look at that, tinnitus cannot be cured, but that does not mean that patients cannot be helped through habituation. Habituation is the brain's ability to relearn, treating tinnitus as an unimportant and nonthreatening event, thereby allowing the patients to ignore it, or forget about the presence. So the basic assumptions of habituation, the brain can sort out meaningful stimuli, information-bearing stimuli from those that are not meaningful, also known as tinnitus. Benefit of habituation. Well, the patient no longer feels helpless in the face of their tinnitus, they're able to relax, concentrate better and sleep better, their overall quality of life improves.

And being able to habituate to their tinnitus will allow for a reduction in tenderness, annoyance, improve relaxation and sleep, improve concentration, and decrease the sense of helplessness for that patient. So what is habituation? Habituation is a natural process. It's an adaptation to a stimulus following repeated exposure. So a couple of real-world examples for you. A rooster crowing in the morning. If you live on a farm, or if you really live anywhere close to a farm, that rooster crowing the first time is gonna

catch you off guard, it's gonna almost put your body into a fight or flight situation. But as you get that extra repeated exposure, it becomes normal for your body. Maybe you wake up to the rooster or maybe you just treat it like an alarm clock and snooze through it if you need to.

The other example would be how about those people that switch from a normal watch to a smartwatch? As they switch over to a smartwatch such as an Apple Watch, they're gonna start to have notified come through throughout the day, whether they have a text message, a phone call, or if their watches like mine, or tell me to stand up every once in a while. So with that it's promoting health, it's giving you the notifications that you were already receiving on your phone, but it's all right there on your wrist. But your body isn't used to this notification or stimuli. And so over time, the repeated exposure makes it normal, but at first, it is not normal at all.

And so that's this creation of a habituation for that body. It is a normal process, and it can be seen many places throughout the world. One of the things that I love about Widex ZEN therapy is how all-encompassing it is. We know that tinnitus patients can be complex, and in many cases require a multifaceted approach. So we've designed a system with many components, and you as the professional can determine which components you want to utilize with each patient. Widex ZEN tones are created within each device? The characteristics are important in promoting passive listening, and they follow the rules of music, yet they're unpredictable, so as to make sure we don't evoke an emotional connection throughout the process.

They're designed to truly relax a patient. Fractals exist in nature in a number of different ways. When you look at snowflakes or broccoli, tiger spots, fingerprints, any of these can be looked at as an opportunity to say there's a pattern, but no two are alike at the same point. We all know that each tenant is patient is unique and may respond better to different stimuli. So within ZEN, we have the flexibility to personalize, you'll see five

ZEN styles to choose from, you can look at various things like pitch, tonality, the dynamic range, the default tempo, and what's going on there. And then outside of that, you'll see two noise options also that you can implement on whichever therapy session that you want to.

So if that patient just needs a break, and they wanna listen to noise, you can make that noise shaped based off of what they need for where their tinnitus is at and where you've matched it to. Or you can look at ZEN noise as just a broadband white noise. So utilizing all of these different tools and different approaches can give you the opportunity to customize each and every encounter with that patient based on how unique their tinnitus is and what works best for them. Working with various clinics across the country, it's always fun to go in and hear what's people's preferences. Some clinics go in and they swear, everyone loves green, it's perfect there. But other clinics and throughout the country, the actual favorite is Aqua when we look at the ratio of usage.

But what do they stand for, what are these colors and how can we best implement it for different patients, maybe based off of what they prefer, or what they find to be peaceful? So when we look at these different colors, Aqua is actually based off of pop music, choral with country, green with jazz, lavender is rock, and alternate rock. Sand is actually based off of Eastern and Middle Eastern music. And then the noise as we described in the previous slide, it can be based off of where that patient has tinnitus and where you want to noise notch it, or just the broadband white noise that we discussed before. There are many benefits to the use of fractal tones.

With these characteristics, it allows for passive listening, while at the same time activating a whole variety of neural structures within the brain, which helps to facilitate habituation over time, provides a calming effect rather than alerting. But most importantly, it allows us to provide auditory stimulation within the cortex and stress

management techniques simultaneously. It's important to introduce those in tones in a way that makes sense to the patients also. They need to know what it can do for them and how this type of therapy can help, then can help break that tinnitus and stress cycle as long as they're included in this treatment process, and they know what to expect and how it's gonna benefit them. Studies that are summarized here within the graphs, they're not new.

But as I said, we're building from ZEN Foundation, and how it can help you and your clinic. So that's not gonna be the main focus of today's talk. But I would be remiss to not mention the body of evidence exhibiting the ZEN therapy effectiveness. Time and time again, we see a clinically significant reduction in tinnitus annoyance. I have a compilation of the studies that you'll be able to access at the end of the presentation or throughout, there'll be QR codes and I'll make sure that I mentioned when and where you can scan them to get to our archive of research. At Widex we're proud of all the offerings from entry level all the way up until premium features such as audibility, extender, noise reduction, soft level noise reduction, and pure sound are available at all technology levels at the moment that form.

But one of the most important features available to all patients is ZEN. It's highlighted right down there in the bottom right, and it shows that we're empowering each and every patient whether their entry-level up to premium, so that they can be in control of their tinnitus, or relaxation depending on what their needs are that day. We want to create measurable and realistic goals when creating treatment plans. Some measurable goals, for example, would be to improve sleep, improve concentration, decrease attention directed at their tinnitus, or things similar. Can we do something to help them feel like they have control over their tinnitus? Is gonna take some time and participation on their part. It's a journey for them, it's not gonna be something that happens overnight.

And lastly, it's important to realize that there are times that we need to engage and utilize other professionals in the process. Once we've established the goals and realistic expectations, why to accent therapy really looks at two big areas, which are counseling and technology. And then within those two areas, we're gonna have two sub-areas. So first, we're gonna look at the counseling side. Counseling consists of two different types, instructional and adjustment based, these are going to allow the client to have the assistance and altering the negative interpretation of the tinnitus via cognitive and behavioral intervention. Second, is gonna be the amplification to stimulate the ears in the brain in order to minimize an increase in central activity, and possible maladaptive cortical reorganization.

Third, we look at fractal tones. They're a novel and proven acoustic stimulus delivered psychotically in a discreet and convenient manner. This is designed to both relax and provide acoustic stimulation for that. Relaxation on the strategy portion is gonna be highlighted by behavioral exercises that can be used during the day, or really to sleep to if they need it. The Widex moment app is truly incredible. It's a powerful app that allows for empowerment of that patient, with things like volume controls, ability to mute the microphones, and sound mixer, that all are customizable for that patient that is using ZEN. So on any given day, any different environment. In any day with a tinnitus could be changing or varying.

That patient can be in control of their treatment process and make sure that they're successful. This is all on top of the EZ directionality, my sound, my guide, and other powerful tools that the moment app has to offer. If you haven't downloaded it before, I encourage you to, so you can see what options are available for your patience. The Google Play Store and Apple App Store also contain an additional tool for you at your disposal. It's the Widex ZEN Tinnitus Management app. The app consists of four sections, sounds, relaxation, sleep, and learn. Sometimes I like to have patients start

with a learn because all they need to do is be educated on what tinnitus is simply so that they can calm some of their anxieties.

Learn that it's not crazy, that it's somewhat normal for a lot of people to have tinnitus. And as they work their way through this app, it's very user-friendly, very fun to go through, and offers them solutions on some of the biggest situations of their life like sleep. I encourage you to go ahead and pull out your smartphone scan these QR codes depending on what kind of phone you have. And check out the app see if you think it could be a good solution for your patients that are dealing with a situation like that. The relaxation tab within the app consists of three different relaxation exercises and a Q and A. Deep breathing, progressive muscle relaxation, and guided imagery are all included.

It's very easy for the patient to go through here and user-friendly on that section. I've had many patients have relief and find success within this tab of the app. Also included on the app within the sleep tab. It's going to answer questions like why does tinnitus affect my sleep? How can I improve my sleep routine? And how does the sleep timer within the app work? Additionally is going to have the button to start asleep exercise. These are all helpful tools to that patient for one of the most challenging sections of their life and that is to peacefully sleep, while they have ringing, buzzing, chirping, whatever their tinnitus presents as affecting their peaceful sleep. This is a great solution for those patients that end up being dependent on ZEN or needing it throughout the day.

Because most do not sleep in their hearing aids whether they need to charge or be put away for the night. It's not normally recommended to wear the hearing aids throughout the night. So this offers a solution that they can use on their nightstand or with a small speaker next to their bed. Throughout the last few years, there's been a lot of stress in the world. Whether it's COVID or something else, all of us have been affected in one

way or another throughout this problem. Because of that, we wanted to look at how can we holistically approach this for all hearing aid users not just hearing aid users with tinnitus. And so throughout this next section, we're going to look at the holistic approach and what we can do for stress, and why do we think it's important?

Stress can be linked to a number of significant health problems, heart disease, asthma, obesity, diabetes, depression, and anxiety, gastrointestinal problems, and Alzheimer's disease. All of these just reading them gives me more stress. And when we think about those problems, we wanna find ways to reduce stress. And within the opposite of it, we wanna start introducing ideas and how we can increase relaxation for our patients and hearing aid users. Music has been one of the biggest ways that we found that it reduces stress and helps with relaxation. Studies have shown other benefits as well. Listening to music can help older people to reduce depression levels, valuable effective music and therapy on anxiety and depression in patients with mild to moderate Alzheimer's disease.

There's profound effects that were found with relaxation, and was stated as the reason for our music listening to decrease in subjective stress levels, and lower those cortisol concentrations within the body. The ways that we look to combat some of the stress and anxiety and increase our ability to relax, we aim to do this through reviving our tinnitus heritage. Widex has been well known for this for decades. And the big reason why we are is because it's so effective. We look forward to advancing this and evolving from Widex ZEN into using Widex SoundRelax. ZEN is not gonna go anywhere, but SoundRelax is gonna help bring an evolution to it and more and further solutions for those patients that we care so much about.

With SoundRelax, we'll be able to evolve from our revolutionary Zen therapy and develop more options for all patients. With Widex SoundRelax, we plan to live better through greater relaxation and concentration whenever and wherever it's needed. The

different segments of the Widex difference are truly going to shine when it comes to Widex SoundRelax, whether it's audiology ally, a premium experience, or unique technology. They all come wrapped together to bring you this solution. Widex revolutionized tinnitus management, and it's time to do it again. Now, Widex is continuing our philosophy of providing benefit for all clients when we launch Widex SoundRelax, it's opening up the benefits of fractal tones to more and more people. What we're going to do here is activate the benefits of fractal-generated sounds to the fields in relaxation, and concentration.

We see the future with Widex SoundRelax as user-driven and more empowerment for all users. So let's break down on Widex SoundRelax consists of: its expanding its options of well-being, we're gonna look at relaxation and concentration. We're looking at soundscapes a whole new type of stimulus for your patients that incorporates fractal tones, modulated wave-like sounds, and lots of other factors. And then the last part is going to be PureSound. PureSound has revolutionized the market as well. And so when we can combine it with ZEN and SoundRelax, it's gonna open up hearing aids to so many more users. There's plenty of people that can benefit from PureSound, and plenty of people that can benefit from ZEN. And it's time to bring those two together in a perfect marriage.

- [Narrator] The past few years of stress and concern have given us the opportunity to really look in and see what we can do about our overall well-being. And so with that, it's gonna be a renewed focus on clinicians and what we can do through the profession of Audiology. And it's going to sit with the clinicians on what we can do to empower patients. And really lead the way in this category with focuses on relaxation and concentration.

- [Kyle] The evidence has shown that SoundRelax is gonna help us relax and focus whether we have tinnitus or don't have tinnitus, whether you're doing meditation, just

need a break, while you're trying to study. Patients will always benefit from more relaxation and more focus, we're really looking forward to seeing what patients do and how is utilized more and more. So this new term soundscapes is really gonna implement two strategies that are highly effective for not just relaxation and concentration, but also for tinnitus treatments. So we'll be looking at the fractal mathematics on one part, but it's gonna be mixed and sound nice and smooth with a modulated wave like sounds. And through that technique, it's gonna give this patient all the benefits that we previously mentioned.

The new soundscapes that are going to make up Widex SoundRelax are incredible. They're gonna be a lot of fun with flexibility and customizability through pitch, range, tempo, timbre, and the ability to add or turn off waves, those waves are going to give you a natural nature sound coming through. It's been described as organic and vivid. It's got a lot of different factors within those tones that patients are describing as more and more relaxing. But overall, they're pleasant. They're giving this patient the ability to relax, and not think about anything else when they need it. When you think about timbre, and what we need to do to make those adjustments, some people are getting that word confused.

And so I just want to make sure that everyone understands timbre is when we're gonna play that same note with two different instruments, where you get the different resonant properties of the instrument, while they still playing that same tone. So the quality of the auditory sensations produced by that tone. So when you see it described as clear, soft, pure, flutes, organic, that's what you're kind of controlling throughout that. But I encourage you as we go through this segment, and afterward, jump in the software, try it out, play the different things, find one of your favorites and find a talk track, so that you can discuss it with your patients most effectively. But just seeing this chart and all the flexibility it gets me excited for what we can do for our patients.

Throughout the presentation, you're gonna get to learn more and more about what Widex Soundrelax is. But as you learn about the benefits and how it can be implemented in the clinic, I think it's important that you get the opportunity to listen to each one of them. So we have a sound sample of each, the first one here is gonna be for winter. Will follow that one up with blossom. And my favorite is over here at fall. Among the team summer has been a big favorite. And then the two that don't implement the fractal tones are down here we're seaside and swells. Here's seaside as the other nature option. Before a longer sample, feel free to download the software, give it a try with your own hearing aids and find out which one's your favorite.

Overall, it's gonna help you with the top track for your patients and helping them decide what's best for them, and their treatment process. Whether they're looking at tinnitus, relaxation, or concentration, they're gonna find their favorite, and hopefully, it's gonna improve their quality of life. The soundscapes are going to be divided up into three sections, fractal tones, combinations, and nature sounds. So on the last slide were we listened to some of the demos, it was a combination of a couple of these. And as you start to add it in the software, there'll be automatic defaults of maybe one fractal, one combination, and one nature sound. So your patient has variety and can let you know what their favorites are.

You'll be able to utilize these in any way that you want, whether it's Relax plus, Zen plus, or Zen and Relax manual program, we look forward to seeing how you utilize them in your clinics. So starting with Compass GPS 4.4, the clinician is gonna have the ability to utilize these different segments that give default settings. So in the software, they select ZEN or Relax for a manual program, it will default to winter and blossom. And then if they're gonna use Relax plus, or ZEN plus, it's gonna default to breeze, autumn, and swells. And the beauty of these three is that they're each a little bit different. So the first one is fractal or using those fractal mathematics under breeze, Autumn is going to be that combination of the fractal mathematics and nature.

And then your third one that's gonna be automatic is gonna be just nature. So for those patients that maybe don't benefit, or don't appreciate the fractal mathematics or stimuli, they're gonna have just swells as your nature combination setting. And we're really looking forward to having this built-in. So it can save you a little bit of time and increase your efficiency on the fitting. Getting caught off guard is no fun. And so we're going to sit here and try to prevent that a little bit. Whether it's in the software in the app, I like to be prepared for what a patient is gonna see and experience on that first fitting day. So let's start in a moment app.

Anytime you've added those ZEN styles, or SoundRelax styles, this is how it's gonna show up in the app, Relax A, B, or C, or ZEN A, B, and C. Just as you see it there on the screen, that's what you'll be able to experience for yourself. Just below that you'll see in our smart speak, it mixes it up just a little bit. Smart speak messages are going to be relaxation, and Zen. Instead of relax and Zen. I've gotten really excited about the well-being in the soundscapes as pillars of SoundRelax. But the third one is just as exciting. Pure sound as a base program for ZEN, and relax is gonna be a ton of fun, and a brand new solution to many patients that can benefit from it.

I'm very excited to see how this goes. So throughout the next few slides and segment here, we're gonna dive in a little bit deeper to how does this work? What are the defaults? And how can I best utilize it for those different patients that it might be applicable for. This ability to combine Widex's PureSound and fractal management has been requested by clinicians all over the world. They've asked for it and engineers made it happen. Only Widex processes in the time domain. This solves the problem with delay based distortion. With PureSound, Widex goes beyond what anyone thought was possible to deliver sounds so natural, you forget you're wearing a hearing aid, allowing the patient to be completely present, no matter where they are.

The wears of this Widex zero delay technology report that sounds are perceived as more three dimensional, having more layers, and spacious. With Widex moment the room just feels right, and helps wears live better without the worry of misinterpreting spatial cues because every sound is where you expect it to be. With Widex moment, we were able to solve the biggest problem in the hearing aid industry. The fact that a hearing aid sounded like a hearing aid. So what impact does delay have on sound quality? When you look here on the left, you're gonna see what's called the comb-filter effect. The comb-filter effect happens when you have a difference in timing between the direct sound and the sound that's processed through the hearing aid.

Because the sounds combined in the ear canal, and they're at different points in time, they combine and create a level of distortion that creates that comb-filter effect that you see across that frequency response. On the right side, you see how PureSound works, because we're able to process sound so quickly through that hearing aid. It combines naturally with a sound that comes in through that vent or that open fit. Because they combined naturally and hit the eardrum almost simultaneously. It creates a frequency response that is nice and smooth for the patient, and doesn't have that delay bass distortion that we discussed before. This delay bass distortion is often described as sounds tinny, or harsh, or unnatural.

All adjectives that I used to hear and fittings that I hear very rarely now. Just how fast is Widex PureSound? Well, let's break down this chart to show you. Here on the x-axis you're gonna see the frequencies and how fast you can process throughout group delay on the Y-axis. And so when you look across the spectrum, PureSound is averaging point five milliseconds. That means from the point that the sound is picked up at the microphone to being delivered in the ear canal through the receiver, it's half of a millisecond. This blows away the competition and allows us to produce sound that sounds so clear they forget that they're wearing a hearing aid. This is why clinicians

have begged over the last couple of years for the opportunity to use PureSound within ZEN, and now SoundRelax.

This is something that's so exciting, and I cannot wait to see the results from it. Subjective and objective research is always fun when it comes out, and it's talking about Widex moment, we've seen user preferences and we've seen objective data throughout the process shown overwhelmingly people are preferring PureSound. For example, here 85% of participants with mild to moderate hearing loss prefer PureSound. A 100% of participants with normal hearing preferred PureSound. And so the way this program processes sound is ideal for those with minimal hearing loss. They really do prefer it and a large majority of the time. As we all know, there's not only one product or processing strategy that's best for 100% of patients. But to have a device that not only two different processors in it, but also have access to the patented ZEN tones.

It's designed to meet the needs of more and more patients than ever before. You heard me mentioned earlier in the presentation, that our Widex PureSound is only possible because the design of the hearing aid. That design allows for that fast processing. So a good question at this point is why don't all hearing aids deliver low delay. They're limited by a fundamental design and their decisions that have been made regarding signal processing. Although the basic processing pathway is the same across many hearing aids, a fundamental difference is the choice of filter bank. Frequency domain filter banks are used by most hearing aid manufacturers, while Widex hearing aids rely on the time domain filter banks a choice made in pursuit of natural sound.

Let's compare and contrast the two filter banks really quick. So why does the filter bank design matter? The difference between the two filter bank designs has to do with the fundamental trade off and processing between time and frequency resolution. The choice of frequency domain filter bank makes life easier for the manufacturer, but it's

not necessarily better for the hearing aid wear. Operating in the frequency domain allows for better power efficiency, but this also increases delay and decreases sound quality through distortion. For a hearing aid manufacturer like Widex, which makes all design choices to produce the best, most natural sound quality. This means that the only reasonable choice is a time domain filterbank with the accompanying high sampling rate, ultra-low delay, and flexibility in setting bandwidth to better match the critical hearing bands.

Although this does make it more challenging to optimize power consumption, Widex has worked over generations of hearing aids to overcome that challenge. Because we believe that the key to a good life with hearing aids is the best most natural sound quality provided in collaboration with the hearing healthcare provider. The underlying philosophy is that nothing can be better for the hearing a user than processing that matches the ear as closely as possible, and preserves the signal as completely as possible. Other proven benefits of PureSound include spatial perception. One of the most recent studies that just came out, talks about how the patient is able to correctly identify where they're at in a room just based off the sound and compared to hearing aids.

If you top that with the EEG measure called envelope volume responses, were able to show that with PureSound, we have more robust and accurate envelope-following responses to make sure that patients wearing Widex hearing aids can do better in complex situations, because they've preserved that fundamental frequency. Several studies additionally show that there's a sound quality advantage, preferences, and high ratings come in time and time again. Another new study has shown that low delay has to be in there in order for the distortion to be an audible to hearing users. I won't have time to go over that specific study as today's focus is SoundRelax. But you can see with all these different studies and advantages coming out that it's critical for this to be

offered to our patients that can benefit and relaxation and in our ZEN programs for tinnitus.

And so finally, we want to look at where is their highest satisfaction and make sure that this satisfaction didn't come with losing audibility. And so we've looked at study after study, ensuring that PureSound not only is increasing that speech intelligibility and preserving it, but also that the sound quality is still there. The sound quality that many have shown in preference, like we said earlier, 85% of users and 100% of normal hearing users were able to prefer PureSound in those situations. Additionally, a little bit later on in the presentation, there'll be a QR code so you can access our research archive. This will show you any of the white papers that you're interested in reading about, or for the sound quality.

If you can't tell by now, I'm excited about PureSound. And I'm excited about it for these new users present and SoundRelax to use it as a base program. One of our cool studies on pure sound is available there in the bottom left, if you want to scan that QR code, it's gonna talk about sound quality in real life, what users think about PureSound compared to their own technology. But for the rest of this presentation, we're gonna start looking at what does the software look like for SoundRelax and now and the updated 4.4 GPS software and what is the research look like for SoundRelax, and how did user preferences align their. For Compass GPS 4.4, you can see the following updates and they'll be found in connection with SoundRelax, SoundRelax is for all hearing losses.

And SoundRelax is available for all performance levels for moment. Updated fine-tuning options, as well as the new program bass, specifically PureSound will be available, and ZEN options will be updated throughout the software as well. The first difference that you're gonna see is there in program manager, you're gonna see the option for ZEN/Relax, or in smart toggle, you'll see ZEN+/Relax plus, I want to make

sure that it's reminded that smart speak is still gonna say relaxation, but in the phone app, it will say Relax, and the same in the software. So I'm relaxed, and GPS 4.4 has been given a modern look again. So throughout this process, you can see if you've been fending Widex before, as a new, nice, clean modern look to it.

You also see a new and updated display with all 15 base options. You might be working off a smaller screen like I am or maybe viewing this class on your smartphone. And so if you are just wanting to make sure that I can zoom in and show you the opportunities that you'll have for you and your patients. So there's going to be 15 different base setups that you can use for the Relax programs, or ZEN programs. And so you're going to have those winter all the way down through the noise-shaped. And you can see where they're separated between Relax styles and ZEN styles. One of the biggest reason that clinicians love to fit ZEN is that for their tinnitus patients, they could go in and manipulate all the different attributes of that specific program and stimulus.

Well, SoundRelax is no different. You can go in and still manipulate all these different options, whether it's the microphone on and off, noise options, tempo, your pitch, tone volume, noise volume, and wave noise volume. So this will be where that new segment is for Wave noise volume in that top right section of each box, you'll be able to go in and select the type of noise that you want for this program. You can go with no noise, noise, or wave noise. When it comes to selecting the base program for whichever you're using ZEN, or Relax, you can select the little gearbox that is next to the program that you're working with, and then you'll go ahead and select the program base.

When it comes to Relax and ZEN programs, they're gonna have a default bass program that's based off of your programs. And so within the settings of the software, if you wanted to control this for PureSound, or universal, whichever is your preference, you can go to session start, compass setup, fitting and fine-tuning select program on the right side. And there's gonna be three options that you see here on the screen. There

on the left side, you can see that it's going to be yes as P two yes as P one, or no never include automatically. Again, this is all referring to PureSound. And so when it automatically appears in the software or doesn't is going to be up to you.

And so if it does default to PureSound and P one that is what it's going to default to for Relax and ZEN, but if it defaults to universal, it's gonna be the same situation. So when you create a new Relax or ZEN. Relax+ or ZEN+ program, the default base program is going to be whichever is defaulted in your software for universal, or PureSound. Once you've created that new manual program for ZEN or Relax, or in the smart toggle, ZEN+ or Relax+, this is what it's going to look like. So in this specific example, we have Relax+ activated and so you can see automatically we're gonna have three defaults pop up throughout that situation. You can still custom bases however you want, it's just gonna be the default, so that that patient can experience the three different types of stimuli.

And so as you go through, if you want to add a new type of stimulus to A, B, or C, all you need to do is simply select it on the left, and then you'll select the arrow in the middle for A, B, or C accordingly, very easily after it's in that place, you can hit play next to it, and then adjust the volume on the right side. This will help dial it in for the patient. Everyone does it a little bit differently, but what we typically recommend is as you go through this fitting process, and you're having the patient listen, as we want the sound to be audible if they're listening for it. But the sound should never be distracting from conversation.

Again, the goal is habituation here. And so as they go through this process, we don't want it to be their sole stimulus, unless you're using it as a sound generator. So when it's being used as a sound generator, you could potentially just go in and turn the microphones off. But for me, when I'm programming for a new patient, I'm looking for audible if they concentrate on it, but also not distracting if they're trying to have a

conversation. As you could tell earlier, when we played some of the sound stimuli, there was much more of a natural wave sound in the background of a couple of them. And so I want to make sure that I go back over and show you where you can do that.

And so once you're in the main program, and you've selected the type of stimuli you want, and A, B, or C or in your manual program, when you select the gearbox in that top right section, you're gonna be able to select no noise, or wave noise. That wave noise at the bottom is that modulated sound that's very relaxing, and allows for you to hear just like we did earlier. The other section, I want to make sure that we include is that program bass. Remember, if you want it to be PureSound, it has to default to P one, or you need to go into the gearbox and Program Manager and select PureSound for your base program. Otherwise, it will use universal.

And that's completely fine if your patient prefers universal, and that's where they're seeing the most benefit. There's no right or wrong, but we see a lot of people subjectively prefer PureSound. And a lot of work has gone in on the engineering side to make sure it's a possibility. So if you're wanting to utilize it, remember, go in and make sure that PureSound is checked for your base program. So on this slide, we're gonna bring it all together. So it's a case study. For the 50-year-old male, we have a patient came in and not a lot of hearing loss is going on in this situation. But recently, he had a sickness and it resulted in tinnitus following that.

And so with that, he wanted to look at what his options were. He presented with constant high-pitch tinnitus in both ears. He already tried another product and was not satisfied with the sound or the functionality. A lot of it had to do with the mildness of his hearing loss. And so the patient was fit with two programs here, along with universal is a extra program. So in the fitting, we put pure sound and P one, and SoundRelax fall in P two, the patient was sent on their way, and given the basic counseling instructions we've discussed throughout this presentation. For the

follow-up, he came in, and he reported that he felt tinnitus was not nearly as noticeable throughout the day.

Remember, this isn't gonna be an overnight type of situation. It's a counseling process along with a fitting process. And then he filled out his tinnitus objective measurement, so that we have data that we can compare throughout the process. Following that slightly reduced the wave noise that was built into a SoundRelax program. The beauty of the SoundRelax program is it's fully customizable. And so when they come in, and they give you slight adjustments that they need to make all the way down to pitch and timbre and wave noise and microphones, you can go in and make those changes accordingly. The only adjustment was that slight one, and he was sent on his way, very happy with the outcome on this one, and the patient was able to enjoy his life with a higher sound quality, but also a better quality of life because the tinnitus was not as bothersome throughout the day.

Anytime I receive new information, I always think to myself, so what can I do with this information? How is it going to be applicable? And who will this benefit? I'm gonna give you a few seconds here to think, can I think of at least one patient in the office that could benefit from this technology? And how would they benefit from the situation? So as you saw before, we had that case study that can be an example of minimal hearing loss, but there's plenty of patients that go through. Maybe they don't have tinnitus at all and they just need that moment of concentration or relaxation, or maybe just to take a break throughout the day. Personally, I have a couple of toddlers and I could use a five-minute relaxation, meditation, what have you just to get away in the middle of the day, this is just an added benefit for a holistic approach for the well-being of your patient, not just a tentative solution, but for all.

But additionally, it can help our tinnitus patients there too. Now with the Sheer portfolio, we're gonna be able to do quite a few things for the patients, but it's really

gonna be wrapped around the powerful accessory, the modern design philosophy that you're gonna see throughout all of the new items. And then the utilization of SoundRelax, while using universal and PureSound as base programs. So between these different opportunities, we're moving forward, and it's truly a launch of sophistication for you and your patients. At this point in the presentation, you should start being more comfortable with what SoundRelax is and how it can be implemented in the clinic. So for the hearing healthcare provider, the options and the benefits are pretty numerous.

But overall, you're gonna be able to see the Widex difference in action for you. Whether it's a premium experience of working with Widex being the audiology ally, when you're concerned about all the different changing in the market, or the unique technology, we're going to wrap all of these together in this new solution, a SoundRelax for you, and at the end of the day for the end user. So that when they come to your clinic, they can trust not only what you put on their ear, but the way that you're able to counsel them with the tools that are built into the technology that's on their ear, or built into their phone with it. We're really excited about the opportunities.

Again, please reach out if you have questions concerns, regional trainers are available, along with sales reps, if you have any questions or concerns about what SoundRelax is, and how can best be implemented in your clinic. From this point forward, we're gonna look at a little bit of the research and what we've seen so far with SoundRelax. On the next few slides, we're gonna go over the evidence for SoundRelax. Throughout the presentation, we've been able to explain what it is how it merges with PureSound and how to implement it within the software. But we're not asking anyone to do this throughout the clinic without at least showing you some evidence of what's going on. And I truly think it's just gonna be the tip of the iceberg based off of the amount of publications we have with ZEN since 2008.

So please share with us what you think, but we're gonna jump right in here on the next slide. And there's going to be a QR code that you can scan to look at that new research study. The new study are hearing aids the answer to reducing stress and improving being it's gonna be based on a strong heritage and tinnitus relief. The Widex SoundRelax offers new sounds generated in hearing aids. That combined with unique fractal music and modulated wave-like sounds. This article reports a study showing the potential of Widex SoundRelax to support hearing aid users relaxation, concentration, and well-being. It's gonna be a brand new angle to what this is and where it fits in the marketplace.

So again, feel free to scan that QR code there in the bottom right, and it will pull up the article for you on your smartphone. And you can take a look at it as we go through. The method for the study as below. We started with 20 participants nine with and 11 without tinnitus. They listen to the sounds over the headphones rather than through a hearing aid for this specific study. And what we're looking for in this realistic scenario is each sound was listened to at least 10 minutes as background, one to two sounds a day for a week. The ratings were immediately listed after listening to it. And the focus of it was on subjective ratings. So we're looking at things like liking, well-being, relaxation, and concentration.

On this slide, we'll go over the key findings. Well, not every user likes every sound, the mean rating of each user's favorite sound is around nine on a 10-point scale, which is a very high level for something so personal as taste and tones and soundscapes. The study was conducted with the sounds played over headphones, like we said in the last slide, and the sound quality can be expected to be even better when the listeners use hearing aids. Details about the study will be published around the time of launch. Key benefits: A broad palette of sounds including tones, nature sounds, and a combination of the two that users are rating highly with respect to liking, well-being concentration, and relaxation.

The main result is this one which shows the participants rating of the sound that they rate the highest, which we interpreted as their favorite. Ratings on the vertical axis and for different parameters of rating on the horizontal axis. The diamonds include, or indicate the mean rating, and the whiskers of the spread of the ratings plus or minus one standard deviation. The reason why we look at each participant's favorite sound is that the sound relaxed tones, in many ways are like music. Although the overall ratings are good, not everyone likes every style. That's why we have so many and so many opportunities for these patients and these clinicians. What's important is that everyone finds a style that they rate highly in terms of important parameters like liking, or we had a mean of 9.0.

Well being where the mean is 8.7, concentration with a mean of 8.5, relaxation with a mean of 9.2. When you have means around nine on a 10-point scale, it really is quite something, we don't always see that people are this positive throughout this type of process. The slides gonna go a little bit deeper on those key findings of which we display it on the last graph. So we're separating it there with relaxation, concentration, and well-being. We're able to see that overall the remarks are very high on each of these categories. And probably the highest it looks like is relaxation and well-being. But when it comes to the subjective scales are very pleased with the results. And it's clear that all the participants enjoyed the segments of the different SoundRelax tones and soundscapes for relaxation, concentration, and well-being.

Zen is one that has many publications, there's nearly 20 available here in the evidence archive, feel free to scan that QR code, and it's gonna take you straight to the URL that you need to be at. It really represents why and how it works, how it has evolved over time, and Widex's commitment to keeping this going. And the update here today, obviously with SoundRelax building from that ZEN evidence and what we show there. A few other results that came out of the study. If you fit Widex before, you might have

found and agree with that Zen Aqua was our most popular Zen tone. And so as I went through, it was listed first in the software for that very reason.

The second one is many participants preferred the soundscapes that were a combination of fractal and wave-like sounds. And so they found that to be the most beneficial and preferred. The last segment here is there's a high correlation between ratings. If you like a sound, you're also going to like and rate it higher for relaxation, concentration, and well-being. This concludes the presentation for today. With Widex we wanna hear be and make the difference. If you have any questions or concerns following the presentation, please feel free to send your questions to AOInquiry at [widex.com](mailto:AOInquiry@widex.com). Again, thank you so much.