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Strategies for Crafting a More Natural Hearing Experience

Presenter: Amanda Albertsen, AuD

Hello everyone and welcome. Thank you so much for choosing this course from widex. We are grateful to have the opportunity to present to you today via Audiology Online. I am Amanda Albertsen and I am one of the clinical trainers at widex. We recognize your time is valuable, so we appreciate any time you dedicate to learning more about WIDEX in our Hearing Health solutions.

Today's presentation is going to be about strategies for crafting a more natural hearing experience for your patients. If you do have any further question, as Melissa has mentioned, there will be the Q and A available. You can put your question in there. If I have time, I will get to those today. Otherwise I will follow up via email to answer any of those questions.

I will also provide other Widex contact information that you can use later on in the presentation.

Learning Outcomes for today so after this course you will be able to define what it means to respect all sounds, describe the impact that it has on sound quality, explain how Widex and our fitting algorithm tailors the fit uniquely to each user and what a benefit that is, and then describe two features that allow wearers to focus on what matters most. I do have to disclose, since this is a ceu, that I am an employee of Widex. That is my financial relationship with Widex. They do pay me to work for them, which is very kind of them and I have no relevant non financial relationships.

Okay, so what we will be talking about today is that hearing loss is a journey. As you know there are many ups and downs. It is not simply a positive or ongoing progressive process. There are hills, valleys. So we'll talk about that today.

Now I want you each to think about one person that you've witnessed travel through this journey. It could be a patient, it could be a friend or a family member. And think about how they went through the process of finding out they had hearing loss, accepting that hearing loss, being fitted with hearing aids, adjusting to those hearing aids, et cetera. So for me I think about my grandfather. So he has since

passed away, but he got hearing aids about five to six years before he passed away unexpectedly.

And how it all started is he has years and years of noise exposure from working around loud machinery and before hearing aids. We just thought that he was getting older, was kind of grumpy, frustrated, short tempered, didn't care to take part in conversation. Well, turns out the hearing loss was causing that frustration. So he was fitted with hearing aids and truly was a whole new person, easier to talk with, was at the center of every conversation. And I am so happy that I have Those lasting memories with my grandfather compared to how he was pre hearing aids.

So think about who that is for you and what you witnessed them experience. So, along this journey, you want to provide your patients with technology that will support not only them as your patient, but also you as well as a provider. So, throughout this course, I'm going to discuss how Widex technology provides that support and why that matters so much to the overall patient experience. There's evidence too, sprinkled throughout this presentation. So it won't just be my word, you'll have the evidence to prove it as well.

So, to start this process, let's talk about natural sound. So, natural sound. I'm sure all of you have something that comes to mind when I say that phrase, but it's sound that we all experience as humans throughout our lives. Now, what natural sound means to me is different than what it means to you. Even if we both have normal hearing, our experience is completely different.

So we experience sound in our own unique way. So to provide the most natural sound in Widex hearing aids, we must first understand what natural hearing is. So let's talk more about that. What do we mean by natural hearing? Well, we understand that the human auditory system is the best built in tool for processing sound.

So at Widex, we do everything that we can to respect how the auditory system works. To achieve this, we develop cutting edge technology and remain true to our principles, which we will talk more about later today. We don't apply drastic processing or elimination of the sound if it isn't absolutely necessary. So at Widex, nothing necessary, unnecessary added, and nothing important taken away.

The Widex sound philosophy is truly our guiding light in all that we do. It guides our R and D and the decisions that we make. And our hearing aids are developed as a holistic solution with your patients, the hearing aid users at the very center.

It takes hard work to achieve a more natural hearing experience with less manipulation of the sound. Of course, to account for all the complexities of natural hearing, our sound philosophy is based on these three fundamental principles. Respect all sounds. Tailor to the user. Focus on what matters.

All three of these work together in harmony to achieve the benefits we strive for. So let's dive a little bit deeper into each pillar and learn more about Widex's unrivaled sound quality.

So first, we have respect all sounds. So we craft an authentic sound experience that respects how the auditory system naturally works. So if we preserve all the details and apply the right sound processing, while reserving the extreme sound processing for only when necessary, this is how we respect all sounds and get that more natural sound quality tailored to the user. Now we have many tools built into our technology and the user experience to customize that fit to every hearing aid user. This enables greater comfort.

This happens at the first fit, during fine tuning, and all throughout the patient's hearing journey.

Next, focus on what matters. We create a sound experience that seamlessly adapts processing to any situation. As the patient moves throughout their daily life, we are reducing distracting noise and

improving speech clarity so that the wearer can focus on what matters most to them.

So now that you're familiar with these three pillars of our sound philosophy, why should that matter to you? So when the hearing solution you've chosen for your patients mimics the processing of the natural auditory system as much as possible, this delivers a cleaner signal to the brain. Brain, which for your patient means the brain is not working as hard. They are not using as much effort to listen to their environment around them. When the fitting is fully customized for each individual user, and when you have the tools at your disposal as the hearing care provider, this, along with patient empowerment, allows the patient to help themselves in the moment, in addition to the tools you've provided during the fitting.

So you minimize the tedious follow up and adjustments beyond that first fitting. So the better the hearing aids sound, the more automatically they function, the less wearers have to think about their hearing aids, and the more they can focus on what matters most to them and the world around them.

Each of these three principles have technical features that are supporting them. So as we go through this course following the hearing loss journey, you will see when and how these features come into play. And of course, it's not just about one of these features over the other. Not just one is more important than any other feature. It's about how they work together to provide that seamless experience for our patients.

Okay, so we've talked about this patient journey, and here's kind of our roadmap that we'll discuss today. So for the purposes of this course today, we will assume that you've already tested and evaluated this person, you have diagnosed the patient with hearing loss, and so now it's your turn to recommend which product would be best for them. So which factors do you consider when selecting the hearing aid that you are going to recommend to your patient? I'm going to give you a second to think about a couple things that are most important to you for your patients. Sound quality and

understanding.

Speech and noise are usually two of the most common answers that I get when I answer When I ask that question, of course, all manufacturers seem to claim that they have the best, so how do you know which one that you can choose and rely on? So my advice would be learn what you can about each technology available and what the research says behind it. Compare also what your patients say as far as their feedback on their experience, especially if they have experience with multiple manufacturers. So really the proof is in the pudding. So keep that in mind as you learn more about each technology and what is best for your patient.

Now, what truly sets Widex hearing aids and our technology apart from others that are available on the market?

Our filter bank design and any filter bank design is really a critical decision that's made by each hearing aid manufacturer. This was a decision that was made when the digital hearing aid was being designed. So this is not a decision that was made yesterday. It was not a quick decision. But this is very critical to how the sound is prepared for digital processing.

So looking at this timeline, you can see how much truly happens before any digital signal processing is done in the hearing aids. So of course the microphones detect sound, the analog digital converters convert the sound from analog to digital and then the first filtering step occurs. This is where we are filtering for analysis. So where the hearing aid analyzes and filters that incoming sound and determines which sound information should be passed on to be processed. Of course, this is a key step in the process.

The method with which a manufacturer chooses to filter sound is again very critical. So you may be wondering, well, I've seen time domain filter bank on the screen for a few slides now, is there any other

type of filter bank design? So in case you are not a filter bank design expert, there are two main types of filter bank. One is time domain filter bank. The other is frequency domain filter bank.

So each type of filter bank has a different focus on the frequency versus time resolution aspects of the sound. So a frequency domain filter bank follows a more uniform approach, treating all the frequencies the exact same way, whether they are low frequency or high frequency, and what the required resolution is for best outcomes. A time domain filter bank has a more flexible approach so we can vary the frequency bandwidths according to what is best for the natural auditory system and we can change that frequency Time resolution emphasis at will, we mimic how the natural ear works. That's why our signal processing is different. In this video we explain how a time domain filter bank works and how using this technology enables us to deliver a pure and natural sound quality during the natural hearing process.

The basilar membrane inside the cochlea filters and analyzes incoming sounds using auditory filters. These auditory filters vary in width. The low frequency filters are narrow, resulting in a fine frequency sensitivity, while the higher frequency filters are broader. To replicate these auditory filters, a hearing aid employs a filter bank the type of which affects the sound quality produced. The two most common types are time domain and frequency domain.

A time domain filter bank is designed with varying filter widths, focusing on narrower bands for lower frequency frequencies and broader bands for higher frequencies. To resemble how the cochlea works that way, a fine frequency sensitivity is applied where needed while still being able to cover the full frequency range with fewer bands. In contrast, a frequency domain filter bank must use a fixed filter width across the frequency range as fine frequency sensitivity and thereby narrow bands are needed. In the low frequency area, more bands are required to cover the full range. Due to the fewer bands in the time domain filter bank, processing time and delay are reduced.

The result is a purer and more natural sound quality compared to a frequency domain filter bank where more bands result in long delay and a less natural sound quality. That's why Widex has made the smart choice of using a time domain filter bank, doing our best to mimic how the natural ear works and provide hearing aid users with a natural hearing experience.

At Widex, we mimic so many typically assume that the more frequency bands a hearing aid has, the better that hearing aid is. As you learned in the video, that is not the case. So in reality having so many frequency bands is unnecessary and as you heard actually impacts delay negatively, which impacts distortion and sound quality.

By mimicking the natural auditory system with varying bandwidths, we are able to create a more natural sound experience than others that are required to have that uniform bandwidth across the frequency spectrum. Because of their frequency based filter bank design.

It is clear from what you just learned of which option is better for sound quality for the patient. So you may be thinking, well, why wouldn't everyone use time domain filter banks? The simple answer is that this results in high power consumption. So Widex has worked over the generations of our hearing aids to overcome that challenge. So it is harder on the manufacturer and the design of the hearing aid to have the filter bank design that we do, which is that time based filter bank design.

However, because our guiding principle is around natural sound, we believe that we had to make the right choice, which is that time domain filter bank so that we can have a high sampling rate and ultra low delay for the most natural hearing aid experience.

How many of you are familiar with the term the comb filter effect? It seems to be more common since we've been talking about this for a few years now. But this filter effect happens in all RIC fittings and it can actually happen in a BTE fitting. If you are fitting a slim tube with a dome fitting, when the dome is

open or semi open, then you have something called the comb filter effect. With digital hearing aids.

So there is direct sound that comes through or around the dome and then the process sound going through the digital hearing aid, that timing is mismatched. So when they meet in the ear canal and at the tm, then some amplitudes add to each other and some cancel out. That's when you get that distorted sound quality. Looking at those zoomed in bubbles, you can see the input stage is nice and smooth and the output is very jagged sounding, distorted to the patient. Now, for all of you watching today, do any of these complaints sound familiar to you?

Especially when you have a patient that's experiencing amplification for the first time in your office? If so, then you and your patients have witnessed the effects of delay. So it's common for patients to say that it sounds funny. There's an echo, sounds artificial or microphonic, and the primary culprit is the comb filter effect. So Widex offers something called pure sound.

We have del. We have eliminated the delay and therefore the delay based distortion that users experience with that openness. Semi open fit. Widex has the lowest delay in the industry with both pure sound. So the pro, the program that I just spoke of, that is our mild to moderate hearing loss program, that delay is 0.5 milliseconds.

And our universal program, which you may be more familiar with, is 2.5 milliseconds. So again, industry average 5 to 8 milliseconds. And Widex has the fast at 0.5 milliseconds for pure sound and 2.5 for universal. So of course, as Widex does, we wanted to do some research on this and see does delay actually matter to the brain and what is that impact for hearing aid users? So on the slide you see a comparison of Widex using pure sound technology versus two of our leading competitors.

So this was on an eeg, looking at the envelope following response and you can see that the more robust responses are represented by Widex pure sound. Compared to our competitors, our signal is

more closely resembling that original input. So think about what that means for your patients. So less distortion is associated with less effort and more robust speech comprehension. So keep that in mind when you are deciding among your options for technology.

So not only did our internal research find this but also an external peer reviewed study at the University of Maryland confirmed the findings. You can see those results on the screen. If you're interested in learning more, you can read the publication that was published in July 2023 from ZAO ET al.

Not only did we measure objective differences when it came to Widex, but we also collect a lot of subjective data because we know this is important to patients as well. So as you may remember, I mentioned and asked at the beginning of this section, how do you know which hearing aid to fit on which patient? So one really great way to determine that is, like I said, patient feedback, especially when they are direct comparing between two brands. So this is a study that was done where participants wore their current hearing aids, filled out the survey, and then wore Widex Moment hearing aids with pure sound programmed in the hearing aids completed the survey, and then they went back to their current technology and completed that same survey again. So looking at the difference here, you can see that Widex sound quality is represented by the green bars.

And then their current hearing aids from another brand are represented in the beige bars. So you can see that four times as many wearers strongly agreed that the Widex sound quality was more natural.

And not only did it impact how natural the sound was for those patients, but also the satisfaction in background noise, we saw positive results there. So 10 times as many wearers were very satisfied with the with their hearing experience in background noise. And then you can see about their own voice. So of course these were just highlights. We looked at more parameters and survey questions than just these featured.

But as you know, these are top complaints for patients, especially new users. And keep in mind these were experienced users because they were already wearing current hearing aids. So in addition to our time domain filter banks, which we've talked about in our ultra low delay, there are two other fundamental aspects to respecting all sounds. One I briefly mentioned earlier was our high sampling rate, which is an industry leading 16,000 Hz internal bandwidth. The second is an extended linear input dynamic range of 108 dB.

We have this at all technology levels and so that is a critical point to so how we process sound is available at all technology levels. So both of these allow us to capture as many sounds as possible from the environment. And we need that information at the input stage because if we don't capture it at the input, then we cannot deliver it at the output.

The pillar of respect all sounds means that we want the sound to be as natural as possible and of course as close to that original input as possible. So we are Able to do this with our time domain filter bank design to mimic the way that the human auditory system processes sound. So we have reduced delay, eliminated delay based distortion and this has resulted in the most natural sound quality that patients desire and really appreciate in hearing aids.

Okay, so looking back at our patient journey map, you can see that you have recommended Widex to your patient and now it is time for the fitting. So this is one place where we really tailor the fitting to the user. So you will find out more about how you can provide this from the get go for your patients.

So True Acoustics is our precise, accurate and individualized fitting algorithm. TrueAcoustics has been well researched and it's evolved since its first iteration. If you are familiar with Widex technology, you may know that we are on our fourth generation. So TrueAcoustics 4.0.

Another thing to point out is that as you know, the ear canal is as unique as your your fingerprint. So even within the same patient, two ear canals could be very different from one another. And because of that, those intricacies and variances can really affect that ear canal resonance, which of course impacts the fitting. You need to be able to account for those individual differences ear to ear. And we want to take all of that into consideration when calculating that first fit prescription.

So this is where True Acoustics comes into play.

At Widex, we respect how the auditory system works. In this video, we explain how we use truacoustics to individualize hearing aid sound. Amplification settings in most hearing aids are programmed based on data gained from artificial measurements recorded using an artificial ear. But we know that every person's ear canal has its own unique shape, size, curves and grooves. These dimensions influence the ear canal's natural resonance, which in turn modifies the sound arriving at the cochlea.

Here you see how a hearing aid on an artificial ear would deliver amplified sound. Additionally, the type of ear tip used also affects the amplified sound. The ear tip characteristics and placement influence the remaining volume of the ear canal and thereby its acoustics. Sound may also leak out of the ear due to venting or ear canal fit. Establishing the relationship between the ear canal's resonance potential sound leakage and the amplified sound from the hearing aid is crucial during fitting with Wide.

At aidex trueacoustics, we account for both the ear canal's unique dimensions and potential sound leakage to ensure optimal hearing aid settings. The truacoustics algorithm intelligently measures and calculates the effect of these factors and is able to precisely compensate for it when prescribing. Gain this way we can ensure that each unique hearing aid wearer can enjoy a more natural hearing experience.

So as you just saw in the video, the earpiece that the patient wears affects the sound that arrives at the eardrum. This is why it is such a critical part of the fitting and really is the acoustic foundation of the fitting that makes or breaks the success of your patient. So instant ear tips are more popular than they've ever been. So although it is great to have that flexibility in the office without doing ear mold impressions, it does put the accuracy of that sound at risk. So as you've learned a little bit so far, having that open ear tip means that we will have more of a vent effect or more sound leaking out.

So this needs to be calculated in the fitting, which again is related to our true acoustics. So please, please, please do not lie to the software. Make sure whatever is reflected in the selection screen is what is actually on your patient's ear. You cannot check that enough. It is critical.

So if you change that on the patient's ear, make sure you reflect that in your selection screen.

Looking at this slide, you can see the ear to ear measurements of different ear tips we offer. So you have open round, open round, one vent sleeve, vented and sleeve power. So there is large variability in vent effect between ear canals. You can see that there is a solid line in each graph that represents the average vent effect and you have the shaded colored region that is one standard deviation and then you have the range represented by the gray shaded area. So it is great because we have more options available than ever before and that allows it to be more tailored to the individual user's ear canals and hearing loss.

But we cannot forget about our built-in tools. So we have true acoustics. And we're going to talk more about the other tools available to you throughout the fitting so that you can tailor this experience to each user.

So feedback calibration is the next step. This is a key component to achieving the best accuracy in the fitting prescription. And we recommend you do this on every single patient. And again, if you change

that ear tip, make sure that you rerun the feedback test. It will, when you change the ear tip, it will give you a warning and it will clear out the feedback test.

So that's important to know the reason behind it. So by running the feedback test, you are giving the true acoustics fitting algorithm more information. So it will measure loop gain, which is how much sound is escaping that ear canal and how much is getting picked back up by that microphone. Which, as you know, causes feedback, and then it will determine the maximum in situ gain before feedback arises. So how much gain can you get before you run into feedback?

And then of course, the overall venue. So this is based on that ear to ear measurement that I just discussed, so that we can predict how that dome will act in that particular ear. So this is critical. So make sure you run your feedback test. Now, we've talked about how important it is that you select that proper dome and run the feedback test.

Now, this next tool is optional. It is our in situ audiometry tool. It is called Sensogram and it will personalize the fitting so it will give you more data points and it will take into account the patient's real time responses you'll miss, like a hearing test, but through the hearing aids. And that will help with the calculation of gain in the fitting. But again, this is not required.

It is just an additional tool that is valuable and can minimize that need for fine tuning beyond the fitting.

Now, one more tool I do want to highlight today is our sound tracker. So when you first connect to the hearing aids, you will see the sound tracker and it is a great visualization of the gain that is happening in the hearing aids so that you can counsel your patients and their loved ones. So what soundtracker does, you can see that it is visualized per channel, so up to 15 channels. And you can see the input is the lighter shaded area and then that that aided output or the added gain is that darker top of the bar on each bar.

If you're interested in learning more about our soundtracker, there is an article to support the accuracy. So the study was done by Christy Oding and Mike Valenti, and the study compared the soundtracker to real ear measurements. And what they found is that what we show on the screen actually falls within 2 decibels of the synthetic sensation levels that were measured by real ear. So it is an accurate tool. But again, you can read for yourself what they found in that study.

So as you just learned, True Acoustics is an important and very influential tool that is part of our technology. However, that is just one way to tailor our fitting to the user. So what other tools do we have for the patient to have a customized experience?

So let's see how we're doing on the map. So they've already been fit with the hearing aids, so now they're coming back for their first follow up appointment. What can you expect at this follow up appointment? Of course, the goal and what we see most often with our Widex fittings is that our patients are happy right off the bat. So there is minimal fine tuning that should be needed at that follow up appointment.

Best case, and really the expectation is that at most they'll need the adaptation boosted up if you chose the manual adaptation. And really this is best for you and the patient because this is saving valuable time and you don't have to spend that time making all those fine tuning adjustments.

When we surveyed both wearers and providers, we found that 74% of wearers said that it was easy to adjust to their Widex hearing aids. Hearing care professionals, or we often say HCPs that fit multiple manufacturers ranged that their Widex patients require the fewest follow up appointments and had the lowest return rate. Both of which are obviously positive results and desired results for patients and for providers. So if you aren't fitting Widex as your number one or even your number two manufacturer, maybe after today it's time to reconsider. So of course we've talked a lot about the natural sound quality

and that is a fundamental principle of Widex technology.

We've also more recently talked about the precise fitting. But what else about Widex technology really drives high patient satisfaction?

One of the tools is our signature feature of the speech enhancer. So this helps with speech in noise. It reduces the background noise without compromising speech intelligibility and considers the Speech Intelligibility index. So the SII is the calculation that's done in real time and we are able to accurately calculate the level of the noise reduction required per frequency band. The noise is reduced below the hearing threshold, but then speech remains untouched or sometimes we actually add gains that boost speech so that results in a better signal to noise ratio, which of course results in better speech and noise outcomes for your patients.

As a review, the Speech Intelligibility index, or SII is a measure of the total speech information available to a hearing aid user at that given in that given listening environment.

So to calculate this, the hearing aids need to consider the noise level, speech spectrum level and the hearing thresholds of that individual user. Then the hearing aids can estimate based on how audible the speech is in that current situation. And keep in mind again, this is happening at every single channel.

So it is truly an impressive feature in our fitting algorithm. Now let's take a look at how Speech enhancer stacks up against other noise reduction systems with no noise reduction in place.

Obviously, the speech and background noise are not differentiated from each other, so we don't have that favorable signal to noise ratio, making that nearly impossible for patients to understand. Speech in that given environment.

With regular noise reduction, you can see that the noise is brought down to the to a less audible level. But so is the speech signal, which again is not ideal for our hearing aid patients if we want them to understand speech in noise. So with Speech Enhancer, we are boosting the signal to noise ratio by not only decreasing the noise level, but we're also increasing the gain of speech so that those are more differentiated and the patient is better set up for success in understanding the speech and noise.

Here is an example. Looking at the right and left ear graphs, you can see what we are doing when speech is detected. So you can see that in this particular case, this speech is actually localized closer to the left ear. So there's more gain being added to speech on the left ear rather than the right ear while the noise is being decreased equally in both ears.

So as you can see from the illustrations I just showed, Speech Enhancer is a unique approach to noise reduction and boosting that SNR in hearing aids. So when we look at the benefits of this feature, we see up to a 2 DB SNR improvement. And that's in addition to any other SNR boosts that the patient is getting from directional microphones. The decreased microphone angle in our smart rigs and other features Widex has available. So as you can see, not only did I share about this, but you saw it for yourself in the results that this feature truly stands on its own.

Another key feature that is unique to Widex is our Smart Wind Manager. So this is how we eliminate wind noise in our technology. So Smartwind Manager is available at our 440 level and it allows patients to enjoy social participation outside. So this could be relaxing on an outdoor patio, this could be golfing, this could be pickleball outside. Just depends on your individual patient and their lifestyle.

But what this does is we are able to analyze speech versus wind entering the microphones and we do this at each microphone. So we're not comparing ear to ear, we're comparing front to back microphones within the hearing aid. So keep this in mind for your outdoorsy patients. As I said, whether that's on a patio or on a pickleball court, this can make a huge difference in their acceptance of the

hearing aids. So when we talk about the wind noise elimination, we have two stages.

One is the detection stage. So we look at if there's correlation or not between the front and back mics, we look at the frequency spectrum and the overall energy level. So this again is done at each microphone. So front and back mic, not just ear to ear.

And that's how we can identify the speech versus noise and sort the two of them apart.

So once we've identified that, then the second stage is subtraction. So once we separated the noise from the speech then we can cancel out that wind noise and that will improve the signal to noise ratio which results in 8.4 decibels speech in wind SNR for phonemes and an improvement in word identification of 57%. So that is significant again for those outdoorsy people.

The next tool I want to talk about is our soundclass technology. This is something that is often overlooked. Even regular fitters of our technology sometimes forget about this tab. But this is the key to your follow up fine tuning adjustments that will save you time in adjusting the gain table. So the way Widex hearing aids analyze the different environments and seamlessly adapt as the environment changes is by using our sound classes.

So this varies per technology level. But these were established in the real world, so that's how the computer chip was trained. And that's important because we want them to perform well in the real world world. So as you can see the 440 has 11 available sound classes. That does change per technology level.

But I especially want to point out the sound classes that have the speech bubble in the bottom right corner. That means that there are different adjustments you can make for when speech is present versus not. So it just gives you more fine tuning control to help your patients in specific environment.

By now it should be apparent that there is a benefit to sound class technology as the wearer so that they have that seamless transition as their environment changes. But now let's focus on your side of things as the provider. So as I mentioned, this is a great tool for fine tuning adjustments if those are needed for specific environments. If you didn't have sound classes then you'd be adjusting the gain table. Let's say to add clarity in for speech you might be boosting those high frequencies.

Well, if they're happy in every environment, why are you making that global change if they just need help in one particular environment? So that's where sound classes come into play.

You also, although you should rely somewhat on the patient report, you also have a built in tool in the software which is within our data log that shows you how much of the time your patient is spending in each environment. So you can see in this case quiet and urban, then followed by social and party and then transport and then music are what's being utilized most by this particular patient. This is something you can view in the data log. It will also show you what they are doing to preference control. This can be used just as a context clue, but you can also use this as a guide to fine tuning adjustments adjustments.

So when we talk about the next pillar of focus on what matters, this is what we mean. We want seamless and effortless hearing. We want to reduce those distracting sounds so that they can focus on the speech that they're trying to understand. So as we talked about, the technology that underlies this is Speech Enhancer smartwind Manager and our Sound class technology. We truly want patients to be able to put the hearing aids in and forget about it and feel as if they are not wearing hearing aids.

Now some of you have experienced our smartrix technology. So in addition to everything I've talked about up until this point, there are additional audiological benefits with our Widex Smartrix. So we have up to 20dB improvement in wind noise, up to 88% reduction in touch noise and up to 5% sorry 5dB

SNR improvement in speech and noise. So those are additional benefits adding to Widex technology that they will get if you fit them with a Widex Smart brick. Back to our patient map so you can see that we are now at the patient empowerment part of the journey.

So what can you do as a provider to promote long term satisfaction with your patient? Patients, as much as they would love to have their audiologist or their hearing care professional in their pocket, that is just not feasible. So what you can do is empower them to use the tools they have at their fingertips when they are not in your office and they are in the real world in their everyday life situations.

Remember when I said that we would learn later in today's presentation about more ways that we can tailor the user experience beyond the fitting tools that you have in the software? This is what I was referring to. So if you're familiar with our app, you may have seen the section of my sound. We have had some form of AI since 2015 starting in our unique technology with our sound classes. But as time has gone on our technology has gotten more complex with how we use artificial intelligence and machine learning.

Those are very hot topics right now in our industry. So let's talk more about how we incorporate those.

So with MySound, two important features or parameters can be adjusted based on them using MySound in the app. So one is gain. And that has been the case since since 2018 with our Evoke product with our sound sense Learn. But now as of about two years ago. We now have MySound 2.0, which also adjusts compression, so those are key parameters that are adjusted as they use these tools at their fingertips.

Why this is important and unique is that this considers the user's current activity and their intention. So so as great as it would be for us to program hearing aids in the office to be appropriate and beneficial in all environments, we know this is not realistic and the patient cannot account for every situation they've

been in and every situation they will be in with their hearing aids. So using AI in our app really helps us bridge that gap between their hearing aid experience and every environment that they'll be in, along with their intention and the hearing aids settings. So we have two functions that I've mentioned briefly so far. So the made for you is the my sound part and then create your own is the sound sense Learn.

They both live in the my sound section of the app, which you can find along the bottom of the screen when you are in the app. So the made for you optimizes the hearing aid settings based on the data that's been collected from other users. Again, this data has been collected since 2018, so we have lots and lots of data. It does make two instantaneous recommendations that your patient can choose between. The second option is create your own.

So let's say your patient goes through the my sound made for you portion and they are still not 100% satisfied with their options. Then they can go through the create your own or some sense learn portion where they will have a series of AB comparisons. They could do one comparison, they could do 20, they could do 50. However many it takes. This is a great tool, especially for your patients that take so much time with you making small adjustments in the office and they're still not satisfied.

Think of your Engineer audio file patients. This is a game changer for them. So this made for you recommendation is based on real data collected from real users and it observes trends and so the more popular trends trends are how we make those recommendations for your individual patient. It is super fast, super easy and you will just introduce to patients that you think could benefit. Of course not every patient will use these tools, but it's great for those advanced listeners or very particular listeners for our sound sense.

Learn or create your own.

They'll as I stated, they'll do the AB comparisons and they can do as many as they'd like. And once they're happy, save that as a custom program. Either way, this is a great tool for your patients to help themselves to hear better in the moment when they can't have their audiologist or provider in their pocket, this is a great tool for them to use so that they are happier with their hearing aids, they are empowered and you are both saved time and frustration. One note is that these changes are temporary in that if they don't save the program, they are very temporary. If they save the custom program, it's just an additional program that's saved to your original programming done in Compass.

They're not making any permanent changes to what you've programmed into their hearing hearing aids and these custom programs do live within the app. They will not clear when you connect to your next programming session. If you do have a patient that is really Into MySound or SoundSense Learn, you can view what custom programs they've made and if they've made them manually or using MySound, you would go to this is under our data log and it's called Real Life Insights. As long as your patient has consented to sharing their data and you are logged logged into our cloud based services, you will be able to view this and then between you and the patient you can decide if you want to implement these changes to one of their primary programs or they're okay just changing the program in their app as needed.

So while we're talking about patient empowerment, of course this is not completely necessary. But for certain patients, especially new users, this is a great built in tool in our app. It gives them them videos on what to expect when you're new to hearing aids. There's troubleshooting, there's videos, there's helpful guides, there's a troubleshooting guide that will walk them through some steps, for example if their hearing aids not working. And then of course it does direct them, depending on what the need is, it will direct them to contacting you as their provider.

So the results of course speak for themselves. So in a survey of about 4,000 hearing aid users, this survey was done through the Moment app and responses were collected from 18 different countries. 94% of the respondents so sorry, the slide keeps advancing has a mind of its own. The result Results showed that 94% of users find sound quality very or extremely important. 90% of users are satisfied with the sound quality in the Widex hearing aids and users are likely wanting to stay with Widex when they get their next hearing aids.

So key takeaways from this Sound quality matters and Widex sound quality wins. So of those participants, about 1200 of them had worn other brands prior to Widex and they were asked additional questions to compare their experiences and you can see the results. So the green bars are agree and so they're either strongly or agree and then you have the pink bars are disagree or strongly disagree. You can see that by a large amount Widex won for better sound quality, easier adjustment to the hearing aids, a more individualized fitting, fewer follow ups and that they prefer Widex.

So if you're interested in learning more, of course there is a complete study. The Widexpress 53 is where you can find an expansion of those results.

So remember, it's not just about the wearers that notice the difference, but we are also focused on your experience as the provider. So we did survey 246 healthcare professionals in the United States and wanted to know about their fitting experience, fitting Widex versus other brands. And as I mentioned before, they did report the lowest rejection rate for first time users and fewer follow up appointments, both which are desirable outcomes for fitters. So keep that in mind as well when you are choosing to recommend a hearing aid for your patient. So the hearing loss journey is lifelong.

It is not one and done. I know many of our patients think that getting hearing aids is like checking the box, but that is just the beginning of the journey. So it is important that we remember that every journey is unique to that individual. It is experienced differently by each person. So we want to fit them with a

solution that addresses their needs but also supports you so that you can best support them throughout their journey.

So hopefully today we have been able to express that by respecting all sounds, tailoring the fitting to the user and focusing on what matters matters that we can do all we can to ensure a positive and life changing experience for your patients and a successful and a successful fitting and follow up experience for you as the fitter.

As a reminder, Widex is here for you. You can order on mywidexpro.com which is our online portal. You can contact your local Widex team or you can call us at our 1-800number 1, 800, 221-0188. And then just a reminder in closing, thank you for joining us today. The Widex sound philosophy, our promise to deliver sound like no other.

Please send. I know Melissa has been reminding you. Please send any remaining questions you have in the Q and A whether I get to them today or respond vi email. Thank you again so much for joining us.