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Durability by Design: The Next Generation of Starkey's Waterproof, Everyday Proof Technology

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You.

Hello and welcome to today's session brought to you by Starkey. We're thrilled to have you join us for this year's Industry Innovation Summit on Audiology Online. Now let's dive into today's course, Durability by Design, the next generation of Starkey's waterproof Everyday Proof technology. Throughout this month, Audiology Online is showcasing groundbreaking advancements in the hearing industry with our 6th annual Industry Innovation Summit. Thank you for being here today and we encourage you to explore our library for other compelling Summit courses.

A special thank you to our title sponsor, CareCredit, and all of the innovative companies participating in the 2026 summit. And now it is my distinct pleasure to turn today's course over to Dr. Michelle Hurley. Thank you Anna. I appreciate the introduction there. I am really pleased to join you today to talk to you about Durability by Design.

But before we get started, let's just cover a few housekeeping notes. If you do have any questions, please type those in the Q and A. I will be able to take a look at those before the end of the course and provide any answers before the completion of our session today. If you're looking for the handout, there is a PDF handout available regarding this presentation. You'll find that either in your pending courses on the Audiology Online website or by clicking on the link in the Chat section within the Classroom here right now. If you are looking to earn CEUs for today's session that is available with a paid Audiology Online unlimited CEU Access membership after the course is complete, you'll be able to go to your courses on Audiology Online and pass the short multiple choice examination.

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There we go. If you are interested in looking through the risks and benefits, these will be available to you in the handout so you will have the opportunity to take advantage of that at your leisure to read through those more in depth for the completion of our course, the expectation that you would be able to identify the materials that make up Starkey's new waterproof coating, list the battery life of Starkey's Omega A I rechargeable RIC offerings specifically for Cross by Cross fittings, and be able to list two Starkey Omega AI products that are waterproof.

So now let's get into talking about Durability design and specifically the next generation of Starkey's waterproof everyday proof technology with Omega AI. This is the third generation of the technology that we built upon our neurosound technology platform. And when we first launched NeuroSound technology about three years ago, we introduced our waterproof technology with our rechargeable family of RICs as well as custom technologies. And we've continued in that span of time to continue to move forward and develop new strategies to make our products even more durable. So what?

Talk a little bit about how we've continued to advance our durability story over that span of time.

We think about durability and think about hearing aids. Of course, we know that, you know, we face a lot of challenges when we are working in the. The space in which we're working. Obviously we're dealing with electronics in a very small and a very inhospitable environment where there's a lot of potential for, you know, earwax and moisture in various forms and fashions. We know that depending on the style of the product, it can be placed at greater risk for durability concerns and exposure to the elements, more so depending on that style.

We know the maintenance of the technology is very dependent on, of course, how invested that patient may be in taking care of the device. And we know some individuals certainly produce a lot more wax or are exposed to more dirt in environmental elements that may impact that maintenance and make it more necessary than others. We know there's also patients that are maybe not as careful with their

devices, and so physical damage can be more possible with some individuals. So we know hearing aids have the potential to go through a lot. And we also know that they're a big investment from the patient's perspective.

So it's really important that they are going to be as durable as possible because the hearing aid that is at the factory for repair is not doing that individual any good and not providing the better hearing that, of course, it was obtained to deliver.

When we think about the third generation of technology that has been continued to build upon the strategy that we introduced three years ago with waterproof rechargeable devices, continuing to expand on how we're incorporating design design elements to improve upon our processes, quality and durability enhancements that we are using to again, improve upon where we came from three years ago with this technology and all with the goal of really continuing to further delight our patients. We know, obviously, with the investment that our patients make in their hearing aids, that they have the expectations that they are going to be able to be worn and be working for a long period of time. And we are very, very focus on making sure that we can deliver that delight for your patients.

When we think about, you know, how products come to be, you know, it's really, I think, interesting to find out, you know, how far, you know, in advance technology is being sort of dreamed of and thought about and, you know, developed. It's not something that happens certainly overnight. And it all really starts with, you know, how we want to design a product and we think about just the definition of design in and of itself. It's really that imagining, creating and, you know, ideating a, you know, a product that is designed, you know, intentionally to solve a problem or address a specific need in a given market. And of course, in our case, that market is delivering better hearing.

And so, you know, that is the focus as we think about designing products.

And you know, as that, you know, product design starts, it takes very, very rough, you know, forms and you know, I think it probably would be very interesting to see, you know, the very first, you know, iterations of what that product design looks like, you know, as it's becoming, you know, something that is a little bit more fully formulated based on what we're learning about, you know, what is desired in the market and what changes need to continue to be made to be able to deliver the product. That is what ultimately finds its way into our customers, offices and on our patients ears.

So this process is one that's quite circular. We first want to understand, of course, what's being desired in the market and really identify what that needs to be. There's a lot of creative thought that goes into all of that and really the idea of what that needs to be for not only certainly the physical aspect of it, but of course, what the most important elements, the sound quality and performance functionality is designed to be. Then we start to think about from a prototypical perspective what that should look like. And then it gets into a constant review, implementation of the sort of the test phase, learning from how that is, working through our clinical phases, and then going back and cycling through that and making changes and updates until we ultimately land on that finish, finished product.

So this is a very, you know, long time and very diligent process that it, you know, takes to ultimately come out with that finished product that, you know, looks so finished on our patients ears.

When we think about, you know, the, the challenges of designing hearing instruments, you know, obviously we talked about, you know, kind of the, the hostile space that they're going to be residing in, you know, we also have to think about you amount of technical elements that need to be encased within the product. Whether it is in this case, you know, as we're looking at a RIC product or in a case of a custom product, you know, we've got a lot that we've got to fit into a really small space and we need to do that, you know, despite the fact that it's got to perform incredibly well and be as protected, you know, from a durability perspective. So there's so much that goes into being able to just determine how,

you know, these products are going to be put together so that they are going to be functioning consistently over a long period of time.

Next, when we think about, you know, how we want to view a product, I was thinking about, you know, what it's designed to do. And I think, you know, a coffee cup is really a good example of that. You know, when we look at, you know, this form of coffee cup that we see in front of us looks great when we think about that latte art and being able to express that barista's, you know, artwork. And it's going to taste great, certainly right there probably in, you know, the coffee shop. But, you know, not quite such an effective coffee cup design if you're thinking about taking that on the road with you, you know, and jumping in the car and going somewhere.

So, you know, thinking about that design from, you know, not only the appearance perspective, but is it really going to meet the needs from a functionality perspective of what that job is that it's designed for and you know, then will it be repeatable in terms of the manufact structural manufacturing of that as well. So, you know, all of that really is really important to understand, you know, what is it going to be able to need to do and where does it need to do that, you know, on a coffee cup, I think is a great example of that.

We also need to think about, you know, what the technology needs to do. And in today's world, it needs to be able to connect to a lot of different things. Whether that's the accessories to help the hearing aids perform well under a variety of conditions. Obviously, you know, the smart technology that are pretty much an expectation the technologies need to connect with, all of that plays a really important role in how those devices come together. You know, where the antenna and, you know, the technology that's going to allow that to be accomplished are going to live and how that all needs to be put together to have the right distances and things that are Necessary for these functions to be robust and repeatable time and time again.

And one of the challenges with that, of course, is our own body. When we think about the 2.4 GHz wireless signal that is predominantly used in our industry and certainly many others as well today, you know, it is a high enough frequency that it doesn't pass through the body quite, you know, as well as maybe a lower frequency signal would. But it has a lot of other benefits. And so, you know, being able to take a look at how that moves through the body and how we can optimize, you know, the positioning of things so that we can maximize, maximize that performance so that we can deliver a robust and consistent signal time and time again. For that patient with the right amount of wireless energy, of course, is really, really important.

And we invest a lot of money in to be able to take a look at those kind of elements in our research area.

So when we think about, you know, designing technology and one of the elements that was so important when we were developing Genesis AI, as we moved into the second generation Edge AI and now ultimately Omega AI is think about a product that was layer upon layer of protection. We've got, you know, microphone mesh barriers that are layered into this product so that even if moisture gets past the first layer, it's going to have to, you know, pass through several others before it could even get exposed to the actual microphones. The entire design of this product was entirely different with minimal seams. The seams are moved away from the actual skin surface so that they have minimal contact with those points that tend to be that ingress for moisture and debris, you know, a complete seal, of course, of that lithium ion component for a rechargeable, which is obviously the most common design. So so much thought went into the actual physical, you know, positioning of seams and those little details that, you know, often we don't even really think about.

One of the really important elements of this is the SnapFit 2.0 receiver that drives these devices. This is a ten pin connector in terms of the receiver. It seats down deeply in the neck of this device so that it is, you know, much more kind of protected, you know, so it's not, you know, right at the surface. Being

below the surface allows it to be, you know, much more recessed and protected from the elements and is also Kevlar reinforced. So it's quite pliable and flexible, which makes it lay against the, you know, the head really nicely.

But it is incredibly durable. We can actually suspend a five pound weight from it and leave it, you know, all day long at a common and the device is still able to work and function quite effectively. It's because of that Kevlar reinforcement of that receiver.

So when we think about all of this coming together, I think it's truly amazing to think about what's possible with hearing technology today, certainly in terms of what we can deliver in terms of performance with these devices, but the amount of skill and thought that goes into making all of that possible from the engineering perspective in such a tiny package. So as we think about, you know, technology and you know, the next element of, you know, what we want a product to be is looking at quality. And quality, you know, is, is really thinking about what is that product designed to do when we measure it against other products that are of a like, you know, element, you know, it would be like if we compared a Krispy Kreme doughnut to another donut. So if we thought about Dunkin Donuts, you know, how similar are those, you know, in terms of, you know, appearance, taste etc, you know, so, you know, looking at, compare, comparing similars. When we think about quality, there's really kind of three elements that we look at as starkey.

Quality of promise, which is, you know, is it going to deliver the functionality that we are saying that it's going to in terms of performance, is it going to do what we say it's going to do? The quality of exclusivity. Do you have a feeling of this product being, you know, very exclusive and you know, elite? You know, much, you know, the way you might feel carrying a Louis Vuitton bag or, you know, driving a Mercedes Benz. Does it feel like something that's special and exclusive?

And of course, you know, that's how we want our hearing aids to, to feel in look as well as performance. Quality of effort. How hard is it for you as a professional to work with this product, work with this manufacturer? All of that plays a role in that piece of quality and that view of that because, you know, if it's hard product for you to work with and you know, we're, you know, difficult for you to work with as well, that's not a great experience and that factors into your decision making in terms of who you want to work with and all of that comes under that umbrella of quality.

So as we think about Omega AI and how we've continued to advance that story of durability that we started three years ago with, you know, incredible battery life with our Genesis AI product that hasn't changed a bit. Since introduced that technology three years ago. Yet we're now on our third generation of products built from that original platform. We've continued to build that story of waterproof, sweatproof, everyday proof, and expand it on it in terms of performance. Here's a great video to kick us off in our durability story with Omega AI.

When we think about Starkey's approach, we're always looking to be better today than yesterday and better tomorrow than today. One of those elements, as we've continued to automate our process, one of those areas is in soldering, which is now entirely automated so we can make sure we have consistent soldering time and time again, which is important. We think about our technology ensuring that it is going to be performing correctly. And when we think of, you know, the potential of an error with soldering, that can lead to distortions or, you know, maybe kind of intermittency in terms of sound quality or performance, and we're able to eliminate that with, you know, the automation of that process.

When we think about moisture, you know, again, we know that's been the biggest challenge over the years with hearing aid technology. And we, of course, were groundbreaking in our waterproof strategy that we introduced three years ago. But how do we make that better? And especially when we think about the type of environment in which our hearing aids are living and the fact that electronics are, you

know, living in that space specifically. Well, the biggest challenge when we think about that with moisture is this, you know, the small size of the components.

When we look at the circuit board of a hearing aid and the microns of those particular components, and then we compare that against the micron size of, you know, something as small as a drop of foam dog. You know, we can see why moisture can be such a huge problem with technology. And it doesn't take very much to probably wreak havoc with our hearing aids. And that's why this has been, you know, our biggest headache, I think, over the years in terms of durability. So I'm going to play a little short clip here from a sound bites podcast from Dr. Dave Fabry.

He's having a conversation with Dr. Achin Bomak, who is Starkey's chief technology officer. They're going to talk about how we went from our waterproof technology that we introduced three years ago and have made that even better today. You know, Brandon says quality is our reputation. How about the robustness of these products? Well, you know, AGI are already waterproof.

Can you make it even more robust? Well, with Omega AI, it's 10 times more resilient compared to AGI. In fact, we use the technology to provide coating of the electronic circuitry and the processing processors inside, the same technology that pacemakers use, which go into the body. So it's going to be the most robust and reliable hearing aids that your patients have ever experienced. We're close to removing that anxiety away of a patient who worries about wearing their devices while they're exercising or going in the shower, or going in the shower, because people want to be able to experience all of those moments in life.

And some of them include precipitation. Unless they can wear it all day or wear it in the environments that are important to them, then it doesn't matter.

So that's a great example of how we've made this technology even more waterproof. And how we're doing that is with the next generation polymer coating that we've introduced that is patent pending. It's a Starkey first, and it is designed to be incredibly thin. In fact, it's about as thin as those little Listerine strips that you can place on your tongue, and they just melt. But yet it is really fully encompassing the circuitry, much like fondant on a cake does, if you have any familiarity with how that works.

But when we test this in our testing, and you saw some video snippets of that in our salt brine test, which is like Florida on steroids, it's 10 times last, 10 times longer in that environment. And that environment is 30 times saltier than sweat and 5 times saltier than the ocean. So that is much more difficult than the environments that our patients can even find to put their hearing aids through. So really something that I think gets to how we have made this product more waterproof.

What I'm going to show you is a short video that gives you a sort of real world example of what this looks like.

I think the tea bag, such a great example because we can see it start to dissipate and begin to make that tea with that uncoated bag. And yet see that coated bag just sort of perched there on the top of that wall. Water. And the next challenge that we think about is, you know, impact. When individuals have hearing aids that fall off a surface or they drop it, you know, things happen.

And that has certainly been a challenge over the years with, you know, breakage of the devices. One of the things that we've done recently with our custom technology is enhanced our shell resin. And so when we think about, you know, the durability of it and look at how, you know, much force it can handle. Our new shell resin is much more durable. I'm going to show you a short video that gives you a great example of that in a battle with a shoe or a boot, I guess I should say.

Foreign.

So that new resin is really designed to be much more durable. We'll see a little bit of the testing process as we test our devices because again, we put our devices truly through some very rigorous paces to ensure that they are going to be functioning for the long term for our patients. This of course includes hearing aids, but also for our custom ear molds as well. So you'll see that we do a lot of dropping and mistreatment of hearing aids on an ongoing basis. We're always looking to see how we can ensure that these products are going to have the best possible reliability for your patients.

One of the challenges, of course, is, you know, how patients handle their hearing aids and, you know, take their devices in and out and stress areas on the devices that sometimes we didn't always necessarily, necessarily expect would be, such as, you know, receiver cabling. And so we do a lot of stress tests with the receiver cabling. So you'll see here that it's doing some twisting and turning and torquing constantly of those cables so that we can really, you know, evaluate what's going to happen over the long term with the handling and you know, probably misuse of that cable for, you know, a removal handle of the technology, which of course is not its original intention. We also test that push button pushing repeatedly and we're talking about the, you know, a number of pushes that would equate to years worth of pushes to constantly depress that button. And we're doing that in a salt fog type of environment, so very adverse conditions.

As we're testing to see how it can handle that wear and tear. We also use a fluorescence so that we can go back and double check our work. So that soldering and how we've automated that process is a good example of that. We can go back and ensure. Sure.

Before that product leaves, that everything is as it should be. And so we have, you know, automatic checking as well, which is a great way to be able to verify that everything is done correctly. And this is kind of one I affectionately refer to as the water torture test, where we're just dropping that salted water over and over and over on those user controls and on those seams so that we can see what happens

and when something happens. So we're always testing over a long term period of time so that we can evaluate, you know what that would be over three and five years of wear. And finally, this is an IP68 test where that device is just kind of dropped again in that water.

We actually use salinated water instead of regular tap water, which is the standard for the IP68 test. And very often we do that without the case. And this final is the dust and debris test. So whirling up kind of a whirlwind of dust and debris to again see how those devices hold up. This would be a high, high, high humidity.

This is not a good one to walk into if you've got curly hair, because we're testing in this very humid environment over a long period of time to again see how these devices hold up. So a lot of really interesting tests that are performed, all with that goal of delivering amazing delight for our patients. One of the newer elements in terms of delight is the addition of an LED indicator to our rechargeable products, allowing them to be able to see that the device is powered on or off or even blinking continuously if they're using the Find My Hearing Aid feature. This is easily managed if the patient doesn't prefer it from the software and is something that, you know, the Find My hearing aid function will work even if the indicators have been turned off. I've mentioned our incredible battery life and this is something that I'm really proud to continue to mention and the fact that it has not changed over a three year span of time despite our increased use of DNN with technologies.

But when you think about a product that the flagship offers 51 hours on a single charge, up to 29 hours when fit as a cross product, that is truly tremendous to have more than a full day of wear in a cross, you know, technology I think is tremendous. And you know, we get often asked, well, what's going to happen over time? We actually test these products to the amount of charge cycles that occur over a five year span of time. And with five years we would still expect to have, in the case of the RT, 40.8 hours on a single charge. And if the MRC offers 41 on day one, it's going to offer 32.8 hours on a single

charge in five years.

So we are testing to those timelines that, you know, I think are so important for our patients who are thinking about, you know, the, the value long term of their products.

So I hope that this gives you a sense of Starkey's focus and continued efforts in terms of increasing the durability of these products. And, you know, always being very thoughtful in terms of the design because we want to ensure that these are going to be products that your patients are going to want to wear and going to be able to wear long term because of the durability of the technology. Again, because that goal is truly to be able to allow them to be delighted with wearing them in all types of environments, to not have to wonder and worry about where they're enjoying the use of those devices. They can wear them without having to think about what that environment is going to be like and know that their hearing is going to be, you know, helped and their devices are going to be safe wherever they go. So I want to thank you so much for your time today.

I hope that this topic is something that interests you. I think it's been wonderful to just see, see how incredible these products have been performing and how much work we invest in making sure that they deliver that delight for your patients for many years to come.