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Innovation & Issues Concerning Over The Counter (OTC) Hearing Aids

Presenter: Douglas Beck, PhD

Sam.

On behalf of the Hearing and Balance Academy and Natus Sensory Incorporated, welcome to today's online seminar Innovation and Issues concerning Over-the-Counter hearing aids. Today's event is applicable for 0.1 CEU credit hour with the American Academy of Audiology for live or on demand viewing. And if you are interested in receiving those CEU credits please contact me at at@hbaatus.com and I will need your attendance date and your AAA membership number. My name is Chris Fazakerley and I am the Global Medical Education Manager at Natus Sensory. I am absolutely thrilled to welcome back our guest lecturer today, Dr. Douglas Beck.

During his 40 year career, Dr. Beck was the first President and Editor in Chief of audiologyonline.com and Dr. Beck joined Oticon Incorporated in 2005 and over 17 years later he retired as Vice President of Academic Sciences. Dr. Beck served as web Content Editor for the American Academy of audiology from 2008 to 2015 and senior editor for Clinical Research at the hearing review from 2016 to 2023. Dr. Beck has also become the Vice President of Clinical Scientists of Cognivue Incorporated. Dr. Beck is among the most prolific authors in Audiology with 245 plus publications, interviews and op eds written for the AAA, Hearing Review and Audiology Online, the Hearing Journal and many other professional publications addressing a wide variety of audiological and professional topics. Dr. Beck is a sought after lecturer globally and we are delighted to welcome in today Dr. Beck.

Thank you so much for your time. You are very ready. Sorry. You're welcome to start whenever you're ready. Thank you.

All right, well first I want to thank you Chris, personally and professionally for setting this up. It's always a joy working with you and Natus. Thank you so much for providing these CEUs and pushing forward this program. Today's topic is innovation and issues in over-the-counter hearing aids Innovation. And this is a view from 2025.

You might want to take screenshots or keep your camera ready so you can, you know, virtually every, every slide that I'm going to show you I have a reference. These, you know the, the thoughts I'm going to share with you are based in peer reviewed literature and, and other literature. You know sometimes I'll take stuff out of magazines or something like that, but I'll give you the reference so you can look it up. So you've got my contact info there if you have questions. If you're not able to participate fully.

I do believe Chris is recording it for Natus and so you know you can get A copy of it that way as well. Okay, so here we go. So self fitting versus audiologist fitting hearing aids. There was an article about this and it was very interesting because the authors concluded, oh, you get the same result whether it's self fit or audiologist fit. That to me was not accurate because the thing that they compared in that other article is they took a over-the-counter hearing aid, they gave it to an audiologist to fit and they gave it to a patient to fit.

Well, that's silly because the rate limiting factor is the hearing aid. Of course you're going to get the same result. But I proposed in my response to that article that if you had a bunch of retired librarians and you had a bunch of race car drivers, like NASCAR drivers, and you gave them a Ferrari, you know, really nice car like the one Chris drives, and you gave them a really super car like that, but then you said it's so the car could only do 25 miles an hour and you're going around the racetrack. Well, the librarians and the NASCAR drivers would do about the same because the car is the rate limiting factor. If instead you just gave them whatever the best car was that they could manage and you let them go as fast as they want, of course the race car drivers would do much better.

So I hope that analogy made sense to you. But the rate limiting factor on articles of self fit versus audiologist or dispenser fit hearing aids is that hearing aid. And why would you not expect the same result for the same product distributed through two different protocols? Anyway, so listen, over-the-counter hearing aids do have a role for the appropriate patient. Every over-the-counter hearing

aid and there are hundreds of them, they are each unique.

And each hearing healthcare provider cannot presume what the aided outcome will be, whether they'll be consistent or equivalent to professionally prescribed and dispensed product. But sometimes they are. And I'm going to show you some innovative and clever things. Further, it's very difficult for the consumer to know which OTC to select. Just so you have a good idea, the HIA, the hearing industry association in the USA, put out a statement in 24, you know, about a year ago now, and they were looking at the marketplace and they said, well, you know, prescription hearing aids continue to grow 4 or 5% a year.

And over-the-counter hearing aids probably are 3 to 5% of known sales now. What do I mean by that? Well, in the U.S. of course, we have boxes that come in from FedEx or through the U.S. mail or through UPS or through Amazon, etc. And we don't know what's in those boxes and there's no way to know. So the only reporting channels that we have are when the larger members of HIA report their OTC sales.

That's what we have a measure of. So I think it could be quite a bit larger than what we know. But that's not the important thing. The important thing is prescription hearing aids, the ones that you and I generally fit on patients. That hasn't changed at all.

That's gotten larger, if anything, since October 2022 in the USA when the food and Drug Administration approved over-the-counter hearing aids. So it's very confusing for consumers and the results have not been spectacular. This is more from that self fed article that I responded to and here's the reference. It's the journal of otolaryngology ENT research in 2024. And what I argued there is, you know, always the best way to proceed if you're a patient is diagnosis first, treatment second.

That's what we do in all of medicine, right? We don't just say, here's a bunch of pills, take them, maybe one will work. We don't do that. We say, oh, you have rheumatoid arthritis, these drugs work best for

that. Oh, you have diabetes.

These are the drugs that work best for that. In other words, we get a diagnosis first and then treatment. And for patients to just do treatment first, where they just put it on a hearing aid and see how that goes, doesn't make a lot of sense. Consultants and experts did recommend to the FDA that it would be smarter to suggest or mandate a comprehensive audiometric evaluation and consultation from you or me, a licensed hearing professional, so the patient would better understand their hearing and listening needs and then let them pick whatever the heck they want. They could get a prescription hearing aid from you or me, or they could get an OTC.

But by that point, you see, if they had a proper diagnosis to begin with, they'd be in much better shape. Well, the FDA chose not to do that. That's fine. I was at those meetings in 2016, 2017, and I know people suggested that we should mandate at least give the patient some modicum of understanding of what their hearing or listening problems are. I know that was done because I did that anyway.

You know, it's not the first time people didn't listen to me over-the-counter. hearing aids are here to stay and their presence should be embraced by all hearing healthcare professionals. I truly believe that. And I think OTC is Fine. My only issue is, you know, I wish patients had to know what the heck they're buying first.

It's not as simple or as benign as buying a set of over-the-counter readers. You know, for eyeglasses, it's much more difficult. So the FDA did say, you know, the reason we're going to do OTC and the reason they approved it was access and affordability. Those were the two main things. Well, access, I would say is solved because you can buy over-the-counter hearing aids virtually a bazillion different websites.

You can go to pharmacies anywhere in the U.S. you know, Walgreens, CVS, Rite Aid, Best Buy electronic stores, big box stores. You know, you can buy them everywhere. But affordability, have they become affordable? Well, the interesting thing is, you know, back in those days before the FDA approved it, I think most of us were thinking that over-the-counter hearing aids would be 2 or \$300. In fact, I remember the president of a rather prominent premium hearing aid manufacturing saying, well, you know, \$499 is about the limit that you could put out an OTC that people would buy.

And I think we all said, wow, that's high. You know, and here it is, right 20, 25. And you know what happened? The better the premium over-the-counter products. They cost between \$1,800 and \$3,000 a pair.

And so they're still beyond the reach of most people that over-the-counter hearing aids were designed to help. And how do I know that? Well, because I read what Ms. Sieber wrote in the Best Buy over-the-counter product evaluation and she was saying that, you know, the 200 to \$2,500 a pair of Suzy Armand, I don't know if you know her name, she's, she's a brilliant financial consultant and she's been online now for decades. And she's fun to listen to. Very, very bright woman.

I can't tell you what her degrees are because honestly I don't know. But, but she's very popular in the States. So she said in 2023, I think it was. Most Americans, 60% of them don't even have \$500 for an emergency. And as such, it seems hard to imagine that most Americans would say, spend 500 on a pair of low to mid range over-the-counter hearing aids.

Because I'll tell you, this is absolutely true and undeniable. And it's a weird story. I have eight different pairs of over-the-counter hearing aids and they were sent to me by different manufacturers across the globe. And they all said pretty much the same thing. They said, Dr. Beck, if you like these, we're going to send you a pair of these.

And if you like them, would, you know, would you talk about it and, and would, you know, maybe we could sponsor you to talk about them. And I said, well, let me hear them first. And I didn't say yes to any of them. They were all awful. I won't tell you what they are.

That's not fair because they're not here to defend themselves. But I would tell you this, excuse me. I would tell you that in the USA I have never worn a pair of hearing aids that were less than \$500 that I would recommend. That's me personally, my viewpoint. But you know, 40 years of audiology and I am a professional musician, I know a little bit about sound and I couldn't recommend any of those hearing aids to anybody, you know, a patient or a loved one.

Absolutely not. The upper end stuff, the stuff that retails in the USA for over \$2,000, well, some of that's pretty good. But the problem there is, you know, you can go to a big box store and buy for \$2,000 a very nice set of hearing aids with a hearing test, with, you know, a warranty, with 180 day return policy, with repairs, with reprogramming with a licensed hearing care provider. So if you're spending \$2,000, why on earth would you pick something yourself and have to run with it on your own knowledge when you're not an expert, like a hearing care professional licensed to do that work? So I don't want to advocate for one big box or another, but, but in the States there's a couple of very large chain stores that are warehouse stores where, you know, they have hearing aids and for \$2,000, \$2,500 you can go and buy a brand name product, have a professional look in your ear, actually test your hearing.

Remember, diagnosis first, treatment second. We can do all that for much less than these very expensive over-the-counter hearing aids. So this is Ms. Roberts, Katherine Roberts wrote in Consumer Reports. Now, I don't know how well known Consumer Reports is or is not in the uk, but I can tell you it's a very well respected club magazine that comes out monthly and they sometimes do reports on automobiles and they do reports on cars and that's the same thing. Stoves, refrigerators, lawnmowers, hearing aids, they do reports on everything.

And their writing is usually very, very fair and very accurate. I've been a member on and off from probably 40 years with Consumer Reports. So they did a 2025 in January, just two months ago. They tested over-the-counter hearing aids from Audien, Ergo Lexie, Lucid and Sony. And here are some excerpts from that report.

They said it's available, OTC is available in all price ranges. And they said, you know, they surveyed adults and they were willing to pay about, you know, \$200, which you know is great because the only thing you can buy for \$200 is nothing. You don't want to buy those. They're terrible. Many of the respondents to the Consumer Reports survey, they were not confident about choosing the right device on their own and they wanted to pay about \$200.

And as I just explained, the better premium over-the-counter devices are \$2,000 or more. Same article, going further into the article. The self fitting over-the-counter hearing aids are highly customizable. So that's good. If the user knows what they're doing.

That's good. People are prompted to take a hearing test while setting up their device so they can customize it a bit. That's okay. You know, there's a lot of buzz in the States about the Apple AirPods Pro 2. And you know, it's a good hearing device.

I mean, if your hearing loss only lasts two or three hours a day, that might be the right product for you. But you know, and I've been wearing AirPods for about eight or 10 years now and whenever I take them out, I get a huge relief to take them out of my ears because, you know, they're not custom fit. They're kind of a, you know, small, medium and large, one size, three size fits all and you know, that's fine. I would never criticize Apple. Apple is a great company.

They're very innovative. They make excellent products across the board. And an AirPods for what it is is great, you know, but does it replace any hearing aid? I don't think so. Not in my mind.

I think it's a good product. I don't think it might have an advantage in that it makes people think about their hearing loss. And when they see the benefit they get with an AirPod, they may seek a more sophisticated hearing aid. Then again, if their AirPod doesn't fit them well and they have problems with it, they may be turned off. We don't have any long term studies on this sort of thing, any longitudinal studies.

We have hunches and hunches. You know, they're, they're fine but you know, that's not science. That's a Guess. Self fitting. So back to the article.

Self fitting involves finely tuning the bass and treble settings for your hearing aids. In different settings, you have the option of setting up and saving different audio configurations for different scenarios, like a noisy restaurant. I like that a lot. One of the products that I do endorse actually has four different. I, I refer to them as amplifiers.

You know, there are differences in gain and spectral content. Right. Gain and frequency. And so I, I hyphen, I don't hyphenate it, I refer to it as four different amplifiers. But I'll show you that in a few minutes.

So Consumer Reports did evaluate all these different products and that's fine. And they found they range in price from 640, 49 a pair to 29.50. So what I've told you are the different ranges from different authors, all writing in 2024, 2025, showing that these things go up to about \$3,000. And my argument there is, why wouldn't you go to a professional and save a thousand dollars and get it professionally fit? Because these products, and I've looked, I don't see any peer reviewed data showing that they're better here or there.

And I'll show you one that's a little frustrating on me. So I wrote an article about six months ago with my dear friend Dr. Michael Harvey, he's a psychologist. And we pointed out a couple of things about OTC products. Many, probably most people do not care to show, share or talk about their age related deficits, problems or disabilities. You know, you and I can joke about me being bald.

I'm fine with it. I've been bald for a long time. Long time. Right. But most people, you know, younger people in particular, 30s, 40s, 50s, you know, they're taking all these chemicals to try to grow their hair.

And maybe that's fine, I have no issue with that. Or they're using hair dye because they don't want to show, you know, the grays. That's great. That's personal choice and I honor that. And, and no issue.

Millions of people get their teeth straightened using Invisalign because it allows correction and it's more or less invisible. Nobody wants to show their teeth if they have old, awful problems with their teeth. And you know, people do this a lot, you know, and they'll just, you know, and they won't smile with their teeth because they're embarrassed by it. And I get that. And that's why I think it's so important to have cosmetically appealing solutions.

Hundreds of millions of people in the US wear contact lenses, which is kind of shocking, and they receive laser eye correction. I did that. I had Lasik. It didn't work. Well, it worked for a year.

They, you know, people wear wigs and toupees, they wear hair extensions, they get hair transplants, they do all manner of implants. We're not going there. They wear makeup, Botox, facials, chemical peels. And why did, why do people do that? Why do they do all of this?

Because it's important to look as best you can for, for many people, not all. Some people really just don't care. But most people that you and I interact with, particularly as professionals, they do care and they want to look as good as they can. And these are essentially part personal decisions made to make

you or me, the individual, feel better about the way they perceive their own physical appearance. You know, I think that's very real for all of us adults making personal decisions, that's fine with me.

And I think that's appropriate. So my point here is, listen, when you say to somebody, hey, you're going to wear this thing over your ear, they don't want to do it. You know, there's many studies. The big one, of course, is 2017. Maybe it was 2018.

Amin Amlani, Michael Valente, writing in the American Academy of Otolaryngology, Head and Neck Surgery, peer reviewed. You know, they said, well, here's the thing, the most expensive place to get hearing aids is the USA. That was in. That was then. And using their data, they said about a third of all people who were candidates for hearing aids had them.

But then they said, well, what about the EU? What about the UK? What about Canada? What about New Zealand? What about Australia?

What about places where, where you have an NHS sort of a situation? So hearing aids are more or less free, you know, for citizens, you know. And what they found is about 60% of eligible people in the UK said, I'm fine, I'll get by without it, you know, in other words. So cost was never the major ordeal. So why, if you take out cost and you take out access and affordability, then why don't people do it?

And the only thing that I was able to do come up with is they don't like the way it looks. And I'll show you that that is not a trivial point. Now, audiologists have been telling me for about 40 years, Dr. Beck, you should tell patients this, your hearing loss is more visible than your hearing aid, and that's great. And that's maybe true and that's, you know, but the patient wearing mascara, the patient who had a facelift, the patient wearing Invisalign, the patient who got eye correction, the person wearing fashionable eyeglasses. Not the message they want.

They don't want to be, be lectured to as if, you know, they were not able to make their own decisions. And they don't want to be told by you or me how they should look. It's just not our job. But we, our job is hearing healthcare. And if we can do that in a cosmetically pleasing way, I would say that's something we should pursue.

So this article, let me go back to the reference on it. This is one I wrote with Dr. Harvey, and again, he is a psychologist here in the States. He's up near Boston. So in our article he said, you know, there's ample evidence of stigma associated with old age and hearing aids in our culture from long ago right up to the present. To look younger, companies present a plethora of billboards for age defying skin treatments.

Dr. Omlani and colleagues say if hearing aids were free, two thirds of the hearing impaired people would not wear them. Walligan said that pervasive perceived stigma associated with hearing loss and hearing aids and the closest association with ageism and the perceptions of disability. She notes young adults report negative impact of hearing loss and hearing aids on their personal relationships with peers, their self concept and their willingness to self disclose. They don't want to tell everybody about their limitations and their personal abilities and disabilities. People with hearing loss avoid hearing aids for many reasons and social stigma is significant.

In 2024, Forbes said 48% of respondents believe there is a stigma associated with hearing aids. 63% of millennials, 47% of Gen Xers and 41% of boomers agree there's a stigma. So we can deny it and we tell patients, oh, it's no big deal. You know, you got to take care of your hair, but they don't want to do it. WebMD says essentially the same thing.

By the way, 62% of Americans wear visible corrective eyewear and 45 million wear contact lenses. I said hundreds of millions wear contact lenses before and that was a typo. I meant to correct it, but now that I see this one again, it is 45 million. I've checked that a few times. Only 15% of people with hearing

loss wear hearing aids.

Now. That comes from the Global Burden of Disease studies which came out in 2024. Peer reviewed adherent hearing and Larry Hume published in 2023. If you put those two things together you see that there's about one out of five people in the US has hearing loss and, and only about 10% of them are wearing hearing aids of any sort. So resistance to hearing aids is deeply rooted in stigma, specifically with old age.

And this is not trivial, this is a mainstream issue. So you would think, well, let me show you one or two more. Beadle and Jensted younger and older folks who might hold negative implicit attitudes toward older and younger people who wear hearing aids. Nichbacht et al. Participants in their study believed hearing loss and hearing aids were associated with stigma, an association between hearing loss and hearing aids, and stereotypes associated associated with aging disability and different.

This one is really fascinating. This came out in 2024, the end of the year in December. And the question they asked, do over-the-counter hearing aids effectively improve aspects of everyday communication? Are they beneficial, particularly with pre programmed over-the-counter hearing hearing aids? And their goal was to evaluate conversation efficiency or the time taken during conversations with people known to you, and auditory recall following speech recognition, which is a critical aspect of participation in conversations.

So they had 30 adults, excuse me, with mild to moderate hearing loss and their familiar communication partners fitted with pre programmed OTC products and they used the default program which best matched the target for each listener. So what? They found no significant improvement in conversation with OTC and they compared with unaided condition. In other words, unaided versus OTC. Was there a conversation efficiency improvement?

No, our findings did not show improvements in communication outcomes with over-the-counter hearing aid use. Now that's very interesting. And this is Stadkowski and Susa Pam Souza, she's genius level audiologist here in the States. So you're not seeing much in the way of peer reviewed stuff on over-the-counter hearing aids, but this is one and this is an important one. So what do we know about wearable eyewear?

And that's something I'm very involved with right now. So I'll tell you about the peer reviewed data on that. Oh, these slides are from friend of mine. We, we just did some presentations at SECO, which is Southeast Congress of Optometry in February 2025 in Atlanta and it ended on March 1st. So these slides, I, you know, I didn't take the background off because that's where they came from and I'm using them with permission from my colleague who set them up.

I want to give you a disclosure. I do work and I do consult results for SLR Luxottica. They're the ones who make nuance in Meta and the Reason I want to bring this up is because I'll show you the peer reviewed stuff that we just published in February. Journal of Otolaryngology, Ent research on nuance. You probably have heard of nuance.

But before we get there, let's talk about Google Glass. Right? So remember that it came out like four or five years ago. What happened there? Well, it was probably ahead of its time, probably way too expensive, built before they defined the problem.

In other words, you know, what's the problem that you're solving? That's such an important question before you design a solution. Google Glass was actually banned in many restaurants and stores because of privacy issues, because it was pretty good and it was marketed as a luxury item. So that's, that's always a problem for the masses because that means it's very expensive and that means that it's very chic and it's got a lot of baggage with it. And they didn't really work with optometry.

People bought these through Google and you don't see much of them around anymore. Right. But it was a very clever item. Virtual reality, what happened there? Well, this is what's in the Apple ad on this.

And this is the reality of what it looks like, right? But virtual reality headsets kind of be on the couch, right? They're used in healthcare, automotive and educational training. But do you remember the Metaverse? Remember that from 2020?

That didn't really work out so well. So it's apparently not as successful as hoped. In fact, they're down about \$85 billion since 2020. That's more than Chris and I together. Just so you know.

85 billion, that's a lot of money. The trend is to open towards open platforms and augmented reality, not virtual reality. I'm not going to go into, you know, what's virtual reality and augmented. I think you're probably familiar with it. But virtual reality reality was, you know, you put on the glasses and everything changes.

You have no, no real foundation. And that's fine, but a little too weird and very expensive. So it's going the other way. But here's something very interesting. This virtual reality headset was actually used not long ago, four months ago, in a court of law in the U.S. and you know, U.S. law has gotten nuts.

Oh, I don't know, since November or something like that. Judge Siegel donned an Oculus Quest 2 virtual reality VR headset during a stand your ground hearing on December 14, 2024. Experiencing a defense experts recreation of the defendant's perspective in the case Now, I'm not an attorney. I don't know anything about law. But I'll tell you, this is.

This is very, very interesting to me that the attorney put together. This is what happened in a virtual reality, to show it to the judge so the judge could experience it. But of course, I have a million questions about that, and I'm sure you would, too. But just interesting that it made it to a court of law in the US but

then a lot of weird stuff has. All right, 2025 wearable eyewear.

Just to give you the scope of smart glasses globally. Right now, wearable eyewear is about \$6.2 billion.

And where'd I get that number? Well, SkyQuest, you've got the. The reference right there.

So I already disclosed twice that I work for Essel Oil Sotica. They are the ones who make Ray Ban Meta. If you haven't tried those, oh, my goodness. And in the States, they're relatively cheap. I think they.

They retail for 350, \$400, maybe less. And what you do is you say, hey, Meta, what does that sign say? And you could be in Germany and it would read this sign to you in English, and you're just looking at it. Or you could say, hey, Meta, take a picture. And Meta goes click, just like your phone.

Or you could say, hey, Meta, take a movie. I'll take a movie. But the biggest thing for me, and this is astounding, you know, it was built with Meta, with Facebook and Mark Zuckerberg's team there, and it's distributed and I think owned by Slur luxottica these days, although I think Meta has a partial share of it. Those are business issues. I don't get involved in that stuff.

But the cool thing there is the use of Meta glasses by blind people. And I've heard this a number of times. In fact, I met a blind person who's using it. So she doesn't use a stick anymore, you know, white cane, and she doesn't have a dog to help lead her around. She could say, meta, what's in front of me.

And Meta would say, you know, there's three steps down to the floor, to the basement. And Meta could say, there is a car coming from your left side. Wait for that to pass. And. And, you know, oh, my goodness.

All of a sudden, blind people can use Meta glasses to navigate the world. And. And I've seen that quite a few times now. It's very, very impressive. Meta glass, though not really meant to people who are visually impaired or hearing impaired.

You know, they're they're a very high tech solution that Bluetooths to your phone so you can take videos and snapshots and, and I love the instant translation. That to me is unbelievable. If you get the chance, I'd recommend get a demo of that Nuance Audio. I'll show you how well that's done. I, I hope you're seeing my pointer.

There's nothing in your ear at all. The sound comes out of the frame right here above your ear. Same here. There's six microphones, there's four different amplifiers, there's noise algorithms for noise reduction, there's algorithms for omni versus directional beam forming. I'll show you the results in a minute.

But I don't want to make it a commercial. So I did tell you about the other products. Lucid has one out there, a different Lucid lucyd Vitre Vos X. And if you just Google, you know, wearable eyewear, smart eyewear, you'll be shocked at least what you see. And some of these are very, very inexpensive, very, very clever solutions.

So I told you that this market, 6.23 billion. And to put that in perspective, you know, it's hard to find really good numbers, but these are the numbers. I just grabbed this off the net today. This is Grandview Research, who I've never heard of, but it's their research and they're saying that the hearing aid market in the usa, you know, if you look at it in billions, you're looking here at about 1.9 billion back in the day, that's in 2022, but about 8 billion in 2023 and growing. So the global, I'm sorry, the global hearing aid market is about 8 billion in 2023.

The US is about 2, let's call it 3 billion. So when I go backwards to this other slide and I show you that globally smart glasses are about six point, that's pretty substantial. Okay, let's talk about Nuance because that's the one I know best because I work for them. As I've told you four or five times now. So it was FDA approved in January 31, 2025.

It's an over-the-counter hearing aid alternative for mild to moderate hearing loss. It allows controllable audio input and directionality. As I mentioned earlier, open ear design. This is it. There's nothing in your ear at all.

Patient value? Well, you know, of course hearing aids have this stigma we've spoken about, but smart glasses, on the other hand, have fashionable options. I can tell you Nuance has two different Sets of frames right now, two different colors, three different sizes in each of the classes. The concern for cosmetics and comfort with OTC hearing aids. Well, as you probably know, you've seen in other videos, right, I do wear hearing aids and at the end of the day it drives me nuts because I have sometimes bulky glasses like these, which are great, I really like.

The vision I get with these is spectacular. But when I wear them with any of my hearing aids, my Ricks, my rights, my BTEs, you know, by the end of the day, it hurts. And wearing my glasses all day, well, I've been doing that for 30 years, so that's pretty comfortable. But that's what they're talking about when they say comfort and the cosmetics. Well, you know, I'm not a handsome guy, so I don't really, you know, I wear glasses that the optometrist says to me, you need to wear those.

So I wear those. I don't have much input on that because I, you know, I realize that as a colorblind audiologist, that's not my area. I go with the expertise of the optometrist that I trust. So these are pretty interesting. And you'll see there's an article down here that we just published in 2025.

What we did in this article is we compared nuance to two of the major manufacturers, premium devices regarding speech and noise and their results, unsurprisingly, where they improved speech and noise by about two to three decibels, which is great. That improved the snr, the signal to noise ratio that people needed to get the words correct 50% of the time. But the nuance audio glasses did as well or better on speech and noise. They were giving up to four, four and a half db improvement in signal to noise. Those of you not conversant in SNR and speech and noise, I wrote a paper in 2019, it's called Two Minute Speech and Noise test.

And that'll give you all the basics on that. But there are many others, right? There's the hint, there's the quicksand. And what we're basically doing on speech and noise tests is we're trying to see which product, well, we get a baseline how does the patient do in noise. And then we put different products on the patient to see how much are we improving their ability to understand speech and noise.

And if we don't improve it by at least two or three decibels, all we did is make stuff louder. We didn't make it easier for them to listen. So I wish we had another hour to go into speech and noise. I believe Chris and I recorded a chat on that quite a while ago. But we can talk about that or send me a note or something.

I'll get you up to speed. But here's the paper. So take a picture of that. I'll give you about five more seconds and then you'll find it very easily. You can just google J Oentr, which is Journal of Otolaryngology ENT Research.

Google that and put a nuance comma back. You'll find it over-the-counter. Hearing aid option for people with self perceived mild to moderate hearing loss Nuance audio hearing aid glasses. So the point of this is again to combine the literature and you'll see that about 1 out of 5 people in the USA has hearing loss and it's probably exactly the same in the UK and the eu, one out of five adults. And if they have self perceived hearing loss, they would be a candidate for this type of product.

Now this, I mentioned this one. Now this is a brand new, you know, it's kind of peer reviewed because I had 25 audiologists co author it with me, three of whom were past presidents of the American Academy of Audiology, three or four of whom are audiologists, two or three of whom are neuroscientists, three or four physicians. You know. And so this is an article I just published about three weeks ago. It's already got 85,000 impressions.

And this is a very important article for untreated hearing loss. I think the reason that untreated hearing loss is so important is number one, it's vast. It's one out of five people in developed countries probably have hearing loss and only about 10% of people even in the USA do anything about it. But we know that untreated hearing loss over years in people who are at risk for dementia, it tends to exacerbate cognitive decline. So this paper, if you don't have it, you really need to get it.

This is, you know, I just took a screenshot of it. I published this paper which with my 25 colleagues and I had my favorite editor in hearing healthcare, Carl Strom. I sent it to Carl to edit because I love working with Carl. He made some brilliant editorial comments which we incorporated and we published it through Hearing Tracker. As many of you know, you know, I am the host of hearingmatters.com co host with my dear friend Blaise Delfino and we, we were going to do it through hearing matters.com but we thought that was too self serving, that would be like, here's a paper that Doug wrote with 25 colleagues and we're going to promote it through, you know, Doug's website, hearing matters.com.

we said that's, that's too self serving and we didn't want to do that. So what we did is we actually went to our competition, our dear friends at the hearing tracker, and we, we asked them if they, they would publish it and they were happy to do it. So it's nice because it's very collegial and we all kind of decided to do this because it's such an important topic. So I'm leaving this up here intentionally for an extended period of time so you take a picture of it and get this article. All right, so that said, we have about 15 or 20 minutes left and I am happy to take questions on the over-the-counterpart products.

I'm happy to share with you my thoughts on those matters and how that works. And I want you to feel free to also, you know, if you have additional information to share, I'd like to invite you to do that. Now, this is going to be a little bit weird because when Chris and I set this up for the last 40 minutes, all I've been seeing are my slides. I can't see me or you or anything. And now I think I am back to our opening slide where I can say, oh, I'm on a beach, so.

So that's nice. And I can't see Chris anymore. But I'm happy to say, Chris, if you're able, can you moderate a Q and A period here for us? Let's see if Chris can pull up. There he is.

Okay, I'm getting there. Sorry, Doug. Yeah, feel free. If you don't want to share your screen anymore, that's fine. I think you should be able to disable your screen.

Now I go to stop sharing. There we go. Oh, that's in much better.

Flying blind there for the last 45 minutes. Oh, sorry. Honestly, it was though, completely incredible. Thank you. I've actually had some lovely messages separately off on my phone saying we're watching this in clinic and, oh, it's been just really nice to see people interacting in many ways.

Anyway, let's have a look at these questions. So the first one is, what is the fitting range for nuanced glasses? Do they tell the patient when their hearing loss is outside of the fitting range? Yeah, I can tell you as the senior director of audiology and professional affairs at Tessler Luxottica, we adhere 100% to the FDA guidelines. So they don't say the DB level of hearing loss that is appropriate.

They say exactly what the FDA says for people with self perceived mild to moderate hearing loss. And we absolutely include the exclusions such that, you know, people with malformed ears should see an ENT. People who have had, who are post op, you know, for anything head and neck should see an ENT.

People who've had recent dizziness, people who have, have had discharge from their ear, whether it's pus or blood or earwax should see an ent. You know, so we are extraordinarily cautious to stay totally 100% within those guidelines.

And you know, we've even taken the step of saying, you know, we do recommend you should see a professional hearing care person, but we, we also know that 90% of people are not going to do that. They, you know, 90% of people with hearing healthcare issues are not wearing any professionally dispensed products. So we do advise patients it's always in their best interest to see a licensed healthcare professional. If you're not going to do this, then you're a candidate if you have self perceived mild to moderate loss and if you don't have any of the exclusionary criteria as laid out by the Food and Drug Administration.

Brilliant. Thank you very much. I'm just going to ask this really quickly because I've had so many people ask this. Are you happy to share your slides so that I can email the delegates with a copy? I am happy to.

Chris and I will figure out how to do that. We're both rather lame on this topic. We were, we were trying hard before this all started to. Yeah, these, I don't think there's anything proprietary in there. What I, and you know, I'll just show you, share my thoughts.

Chris, I can probably quickly make it into a PDF here, send that to you and you can share that for people to, to download. Sure. Thank you very much. Okay, the next question is how do the nuanced glasses work? Do they use bone conduction?

No, they don't. They're air conduction. So I, I don't happen to have a pair with me, but if I did, right here on the eyeglass frame, I don't know if you can see that. Let me put it up here. Is that better or worse?

I don't know. So that part of the eyeglass frame that just before it goes and turns down behind your ear, that's where the sound would come out and it's just shooting it down in that general direction and the people Next to. You cannot hear it. It's pretty cool. So it's air conduction, it's using beam forming and directional.

And you know, I remember writing papers about directional, gosh, 20 and 30 years ago, and we used to say, well, if you could separate the microphone, like one here, one here, one here, but there's six in the nuance, you could do a really good job with beam forming. And. Yeah, that's exactly right. I remember it was only about 20 years ago, 25 years ago, Lou Ferrigno, the Incredible Hulk. Remember Lou, before he got his cochlear implants, many, many years ago, 20, maybe 22 years ago, he did this great thing where he had this giant all to referred, refer to it as a necklace and it had a bunch of microphones and Starkey engineered this thing and it, you know, Lou, because I, I had the honor of interviewing him back then and he was able to do quite well in, in difficult listening situations because he got so much directionality from having a microphone, a microphone, a microphone, a microphone, you know, all over his, his neck.

And then he really got a sense of directionality. And so now you can do that in eyeglass. And you, you know, eyeglass hearing aids are not a new idea. I mean, it was done originally 100 years ago. It's just that, you know, the technology then was kind of primitive and very bulky and very large.

And now if I told you these are nuanced audio glasses, you wouldn't know the difference. Right, because you can't tell. And I, I think that's the advantage. You know, first of all, the sound quality is very good because you have incredible directionality and beam forming. You have no noise reduction algorithms and you have the ability to not have any hearing aid stigma whatsoever.

And I think for many over-the-counter patients, that's enormously attractive. Yep. Great. The next is a two part question.

What is it that you're concerned with, with OTC hearing aids that are \$500 or less and are there ongoing studies on the efficiency of OTC hearing aids? All right. I heard the first part was something about hearing aids \$500 less, but it broke up. Can you repeat that for me? Sure.

So could you elaborate on your concern about hearing aids or less? Yeah, I've never worn a pair that I'd recommend. I mean, that's my. They sound terrible. You know, they don't fit well and they're, you know, I'm a big, I, I've been largely disappointed by dome fittings, you know, particularly two look fittings that have, you know, all the holes around them because then noise gets right in and, and the noise isn't, you know, the sound coming out of the hearing aid that's processed through the hearing aid has noise reduction in it and that's great.

And they might have some directional, but as long as that ear canal is mostly open, you know, that means that a lot of noise is going through it unprocessed by the hearing aid. I, I think for over-the-counter hearing aids, the \$500 limit is, is really a good limit because in general that is the target that people might have the spare cash in their pocket in the US Once you go over that, it becomes something where they may want, want to finance it and, and they can do that through things like care credit and whatnot. And care credit's great. If I, if I were to say myself, but, but if we're going to have truly an over-the-counter solution like you know, a 25 pair of glasses or a ten dollar pair of glasses, you know, that we're nowhere near that, we're nowhere near that. I mean when we, all the people who compare vision with audition, they're, they're quite different.

There's virtually no, no analogies other than they're both sensory systems. But you know, eyeglasses that are over-the-counter are 10, 15, \$20 and that makes them affordable. And, and you know, for those of us who wear glasses, I probably have 85 pairs of them around my house and in my luggage and stuff for emergencies. Right. But hearing aids, you know, never, the good ones were never quite introduced to that price with the rare exception of perhaps Apple AirPods Pro 2.

But again, you know, if you have hearing loss for only three or four hours a day, that, that's a good solution for you. People have asked me, you know, what, what does Nuance retail for? Well, Nuance in the States is something like 11 to \$1200. And so it's a third the price of the other premium over-the-counter hearing aids and it has no stigma attached to it. So then you can take your Nuance glasses and if you get them through an audiologist, that's terrific.

Or a hearing aid dispenser or Walmart or Target Optometry, wherever you get them. You could then take them though to an optometrist and have your prescription put in, you know, for your lenses, no matter what your prescription is, because they're made by Slur Luxottica and they're just about the world's largest hearing aid frame and lens manufacturer to My knowledge, knowledge, maybe there's somebody bigger, but as far as I know, they're the largest. And, and so, you know, now you have a solution where you can have virtually any eyeglass lenses put in to an over-the-counter hearing aid. So you're actually doing a complete vision and hearing assistant product in an attractive pair of glasses. So it's very different.

But again, so the \$500 issue, if, if there were hearing aids that I had tried for less than 500 that I thought I could refer to, I would do that. But I don't. I think the better ones and the ones that were written up in that article that I responded to, they're about fifteen hundred dollars a pair. And you know, that was the one that was audiologist fit versus self fit. The ones that they had in that article.

I, I don't want to say who it was, but you know, they were 1500 bucks because I looked them up on Amazon and that's where you can buy those. So 5, 500 is a good price point for anybody trying to develop a over-the-counter hearing aid because people can afford that without having to finance it in general. Got you. Okay, good. Thank you.

The next question is, could we have some clarity on the slide where you illustrate the US Hearing aid market by size and product because they thought it shows BTS being the leader every single year instead of Rick or whatever. Yeah, I saw that too on that slide. It looked a little bit dicey, but it's a brand new one. And again, I told you the reference. I think it was global health or something like that.

It was somebody I'd never heard of, but I, I saw that online so I grabbed it because I thought, well, it's probably close. I don't have any comments on that other than I, I think, you know, Ricks and Wrights certainly outnumber traditional BTEs. I don't think there's any question about that. And maybe what they did is they grouped the BTEs all together. I'm not going to defend it.

I saw it and I gave you the reference because I saw that too and I thought that's a little bit wonky. But here's what they're saying. Well, I guess if you include the pediatric population, which I guess the vast majority would be BTs at the that stage, then I'm guessing it would be a higher number than we anticipate. So, yeah, I'm, I. Let me try and go back to that.

Good luck. Let me see if I can. I don't think. Are you seeing it now. Are you seeing my PowerPoint?

Not at the moment. Not really. Yeah. Okay. That's my fear.

All right, I'm going to go blind here for a moment. I'm going to turn off. Can you still see me, though, Chris? I can. Okay, let me see if I can find that slide real fast.

I'll tell you what number it is and what I think about it when I'm looking at it. Yeah, it's number 21. So here's what they said. Let me make that a little bit larger so I can read it. Okay.

Behind the ear hearing aids, they showed that as quite stable across the board and slight increases from 2020 through 2030. Then they showed receiver in the ear again, increasing slowly over the years

in the ear, same deal. And canal hearing aids. Now, canal is the canal. If you go back to 2020, was very, very slight in their graph.

And it's. I'm going to guess it's about 20% of the market, they say by 2030. So that's what they're saying. I'm going to get out of that and I'm going to come back to you now. And I think that they're probably right on canal.

In November of 2024, I wrote an article about custom hearing aids. And I think that's what they mean by canal. You know, again, it's probably not written by audiologists, probably people gathering data for a financial concern. I think that invisible in the canal is brilliant. And I have a set of them.

They were made by Starkey and they're brilliant. I. I like them a lot. They. But clear difference in my head when I wear my in Invisible in the canals versus Edge AI. Edge AI is just about the best hearing aid I've ever worn.

And. And there are, you know, other great products out there. I'm just saying personal use. Edge AI really, really good product if you haven't used it and you control it completely from your phone. Same thing I do with nuance.

Right when I put on my nuance now I've corrected my vision and my hearing and I control it on my phone, you know, and so all of these things are worth exploring. I. I just have never seen anything for less than \$500 that I would wear. And. And so if we look at their chart again, I think Chris is probably right when they're adding together all the BTEs that are done in pediatrics, maybe that does make it, you know, competitive with Ricks and Wrights. But the most interesting thing on their chart to me is you see Canal Aids very small and over time getting much, much larger.

And I think that that is really a good idea because that's, you know, there aren't that many things that we have that really control the hearing aid stigma. But the invisible in the canal and some canal hearing aids do. I think more people should be doing that work because people with, you know, significant hearing losses, if we offer them traditional hearing aids, only about 10% accept that. You know, if we offered invisible solutions like eyeglass hearing aids, like invisible in the canal, like some really well fitted canal aids, the trick, as you probably know, you need a video otoscope. In my mind, I would not be comfortable handheld otoscope, no matter how well it's illuminated, putting a dam pretty darn near your eardrum and then taking a deep canal impression going past the second bend.

In the last three or four years, I've really become a convert that I would only feel comfortable doing that work with an excellent, you know, video otoscope, because it makes all the difference in the world in my hands. I'm very comfortable taking a deep canal impression with a video otoscope. I am, I'm no longer at all comfortable doing it with a handheld otoscope. Yeah, I totally get it. And we, we are trying our hardest to educate on products like Otoscan that we do, for example, because you've got the impression being taken digitally with video otoscopy at the same time.

But there's a lot of resistance to change. And I think with most things, over time it'll become the normal, but right now it's being fought against. Yeah, I think I saw, I think I saw a demo of that at the AIHP in England in November of 24. One of your colleagues had that, right? Yeah, yeah.

And I got a little bit of a tutorial on it. I thought it was brilliant and I would really, you know, if you're not comfortable doing a deep canal past the second bend, you know, impression, I think the digital is as good or better. It's certainly more comfortable for the patient. Okay, I know you've got to go, so I'm going to give you two very quick fire questions. The first is, is Nuance available internationally, say in Africa, Asia?

It, it is not today. It will be most likely by the end of, you know, 2025. I, I can't tell you the exact rollout schedule because I don't know, I've been mostly concerned with the US and it's FDA approved here. Even though it's FDA approved, you can't buy it everywhere because the rollout is going to take two or three months. And I know that, yes, globally, it will be available as time goes on.

I can't give you an exact date because I just don't know. No, that's fair. Thank you. And the last question for today, everyone. Has there ever been any research or even individual test runs of patients for a mixed use of OTC hearing aids, like new ones and their prescription ITCs?

Yeah, you know what? This has come up a lot in the last couple of weeks, you know, because I have run into patients as I'm demoing nuance at different optometry meetings and audiology meetings where people who are wearing hearing aids, you know, for mild to moderate hearing loss, have put on glasses in addition to that. And it's interesting, you know, some people like it. I, to me, I have worn it with my IICs and it enhances it a slight bit. I don't see a clear advantage.

It's a great question and I'm sure that there will be research papers coming out on this over time that there are specific hearing aid fittings in which it would be an enhancement. But in general, I would say no, it's probably one or the other. However, I do think that a lot of folks who are wearing a custom hearing aids would find the convenience of this, you know, getting a nuance and having your eyeglass prescription put in it, you know, that solves most of their problems during the day. Doesn't mean throw away your hearing aids, doesn't mean throw away your glasses, but. But it's an alternative.

And I think that we just have to give that some time to see how that pans out. Boy, that comes up a lot. I had a patient, I had a person with a cochlear implant, you know, asking me if they could use it. And I said, no, it's not made for that at all. And then of course, you know, they want to try it anyway.

And it, you know, it was, I don't know. I mean, it's FDA approved for people with mild to moderate hearing loss. That's the only thing I recommend. Would there be other uses potentially down the line? Sure.

I mean, it could evolve that way, and we'll have to see how that happens. But it's a great question. And you know, what I usually say in response to questions like that is everything depends on everything, you know, because we can't say just a hearing aid fitting works with this or that product. Right. It has to be the specific hearing aid for that specific hearing loss.

So everything depends on everything. And that'll, you know, I hope we'll have information on that as time goes on. Right now, we just have personal stories when it comes up, but that's not much to go on. Excellent. Thank you.

And the only thing I would say from my point of view, that there are reasons why we have doctors of audiology, it's because you are the experts. So never forget that when it comes to talks like this. But, yeah. Thank you so much for your time again, Dr. Beck. I've really enjoyed it.

For everyone who's about to leave, the recording of today's seminar will also be available on the Hearing Imbalance Academy within the next few weeks. Just as you all go, please, could you take two minutes to complete the survey that automatically comes up at the seminar? It's the way we get feedback and tell our bosses how amazing these talks are and to keep them. So please fill in that survey. That'd be great, but that's.

And speaking of amazing, Chris, you're amazing, and I'm honored to work with you. And I want to thank you one more time. Brilliant, brilliant sessions. And I always look forward to it. Thank you so much.

Well, the pleasure is always, always mine. Thank you so much, Doug. And take care, everyone. Thank you. Bye for now.