Innovations in Tinnitus Care, Case Challenge - Truth or Lie? in partnership with the American Academy of Audiology

Presenters: Jason Leyendecker, AuD, Emily McMahan, AuD, Natalie Phillips, AuD

At this time, it's my pleasure to introduce our webinar Innovations in Tinnitus Care Case Challenge. Truth or Lie? Today's webinar is in partnership with the American Academy of Audiology and we are honored to have our three presenters today. Dr. Natalie Phillips, Dr. Emily McMahon and Dr. Jason Leyendecker. I invite you to your course handout or the course page to read more about our presenters.

But in the interest of time, I will turn the microphone over to them now. Thank you. Great. Thanks, Carolyn. So we are going to.

First, before we get going, we're going to hear a few words from our president, Tish Gaffney. Welcome. I'm Tish Gaffney, the president of the American Academy of Audiology, and I'm here to share important information about the organization. The Academy is dedicated to achieving recognition of audiologists as the experts in hearing and balance care and the field of audiology as an independent clinical specialty that is integral to the healthcare team. Through our partnership with Audiology Online, we're excited to offer courses like this one to help you broaden your knowledge and skills.

We also offer the latest resources in practice management and evidence based clinical practice so you can grow professionally and improve patient care. We advocate for our members in Washington and across the country to ensure that the voices of audiologists are heard and we help connect audiologists to one another through our valuable networking opportunities like our annual convention. To learn more about the Academy, make sure to visit audiology.org thank you.

All right, so these are our disclosures. We're just going to run through these slides real quickly and also the limitations and risks for today's course. And these are the learning outcomes for today. All right, so as we go through the case studies, my colleagues and I have created something really special for you. And so we want to have it be very interactive.

And as we present our cases, we actually have two truths and a lie. So I will be first and I will be presenting my first case study. And as I share with you how this patient came in, we're going to pause and we want you to put in the Q and A. Which one you think is the lie actually. Okay, so hopefully we'll pause and have a lot of fun with this course.

All right, so this is case study number one. All right, so look for the lie in this one. So this woman, a 50 year old woman, came in and she had experienced nine traumatic brain injuries and she was struck by lightning, kicked in the head by a horse multiple times. She was a farrier and she has severe Anxiety and ptsd. She experienced a sudden onset of tinnitus and sound sensitivity after a few days, along with massive headaches.

She had severe anxiety and she had such severe anxiety and PTSD that she can only work outdoors with nature sounds around her and uses noise canceling headphones in any other environment to protect her from man made sounds. And she is not able to sleep, go shopping or watch television. Previous audiologists that she saw recommended for her to wear filtered earplugs and listen to the radio in five minute increments, slowly increasing her time. Okay, so as you look at those three different statements there, I want you to look for the lie. Start putting it into the Q and A.

But I'm going to give you a little bit of information about being struck by lightning, because as audiologists, we don't necessarily know a lot unless you see a patient like this. So being struck by lightning, it's a naturally occurring phenomenon with odds of occurring as 1 in 15,300 people in the United States. So from brainandlife.org, if lightning hits someone, it primarily injures the heart and nervous system. People who survive lightning strikes can experience a range of mild to severe symptoms, including cardiac arrest, loss of consciousness, muscle weakness or temporary paralysis, eardrum rupture, ringing in the ears, amnesia, mental confusion or slowness, and concussion, like symptoms such as a headache and nausea. So few people have burn marks which may indicate an

entry or exit path from the lightning, even though a distinct fern like pattern like, like a fern, right?

A plant from the electricity passing through the skin has been popularized as a symbol of lightning strikes. Although nearly 90% of those struck by lightning survive, most are left with debilitating long term health issues, including those related to auditory and vestibular systems. Some people exhibit symptoms similar to those like a concussion, like I said, or a brain injury. But usually no telltale signs can be seen on an MRI unless the lightning strike caused a stroke or a bleed. Functional or FMRI Functional magnetic resonance imaging, which is more sophisticated, may reveal damage in the brain circuitry in people who have been struck.

But the test is still investigational. The hypothesis is that lightning strike is a shock to the nervous system and people may recover from short term injuries, but some may have neuropsychological or neurocognitive symptoms days or weeks later. Okay, so Jason, as you are monitoring the Q and A from the first case study, before we get into what I actually did, what are people saying? Which one is the lie? So far I have one person that has said that being Kicked by the horse nine times is the lie.

Okay. Or that previous audiologist did not recommend wearing filtered earplugs. Okay. All right. Okay, anybody else?

So we've got one for the first statement and one for the last statement, right? Correct. Okay. All right, so we'll move on. Actually, the lie is the one in the middle that she cannot be around nature sound.

So the first one and the third one are actually the truth. So that's why we think it's kind of fun. Because, I mean, it's not. We're not making fun, but because Emily and Jason and I see some different case studies, we thought this would be really interesting to share with you. But yes, the first and the third are actually the truths.

All right, so I'm going to move through what I actually did and give you a little bit more case history on this particular patient. So she does live at home alone with her 12 pets. She's employed, like I said, as a farrier or a horseshoe. Noise exposure. She has to orthopedic surgery equipment and saws.

She did try filtered earplugs, but it did not help. And she wears noise canceling headphones, which helps her be indoors. Bothersome sounds to her would be the vacuum, lawnmower, weed eater, being in public areas, closing doors, cabinets closing, walking and gravel. Which is really interesting because if you think about all of her noise exposure to her orthopedic surgery equipment that wasn't listed under her bothersome sounds. Now, she might be wearing noise protection during that time, but it wasn't bothering her.

So this is where we started with her evaluation. She had little to no hearing loss. She just had a mild drop at 8,000 for one ear, the left side. We did do some dizziness because she was sent to me by our brain concussion specialist. So we did VNG and BEMPs, and they were normal.

Her loudness discomfort levels, LDLs were 72 to 82 dB in the right ear across the board and 76 to 86 for the left ear. And so as you know, with sound sensitivity, anything less than 90 decibels would be decreased sound tolerance and anything less than 70 decibels would be hyperacusis. That doesn't say anything about misophonia. That's just kind of categorizing it between decreased sound tolerance and hyperacusis. And so between 70 to 80, I knew she wasn't normal, but she did not have hyperacusis.

We did tinnitus parameters and well, on her questionnaires, first of all, she scored a 66 on her TRQ or her tinnitus reaction questionnaire. And then the rest you can kind of see with her THI and her tfi. Right. And the ranking of a problem. So I always do this because I'm trying to separate everything out is actually sound sensitivity was number one for her.

Tinnitus was number two and hearing loss was number three. So any ideas of what you would do from here? And we'll just kind of wait a second here. Comments from Emily or Jason, as the case is going along, while people put in to the Q and A what they would do on my end, I definitely would treat hyperacusis or sense sound sensitivity first. I go with the idea that if you can't tolerate sound in general, why would you tolerate a negative tinnitus sound?

So we would want to start with that situation myself. Yeah, I agree. I also work on sound sensitivity first. I find it tends to be much more volatile if we don't address the sound sensitivity aspect of things. And it just is much more smooth of a process.

Awesome. We do have one comment so far and they agree. They also say work on the hyperacusis first. Nice. Okay.

All right, so let's see what I did. So I fit the patient with some hearing devices with very mild gain and low mpo. Right. However, like, people are like, you know, mild gain. We just said treat the sound sensitivity first.

So again, I decided to try to use it for. Even though she didn't have hyperacusis, I said she did still have some decreased sound tolerance. So I use these devices, as you can see, for hyperacusis and I turn no amplification. So yes, the devices do have mild gain, but I had made sure that I could actually turn the microphone completely off. Okay.

And that's really important because you want to make sure that these people with sound sensitivity can hear any type of amplification. So even though manufacturers say, oh, just turn the amplification all the way down, you want to make sure there is some kind of system in there to be able to turn the microphone completely off. So that way you can use it for hyperacusis. And so we use that. I use that first for the hyperacusis or decreased sound tolerance and had her use a tabletop sound generator as

well for sleep.

And if she had to. And she was instructed to wear it all the time. So if she had to wear the devices while she was doing something else that she was bothered by, like closing the cabinets or, you know, doing things inside the house, she was instructed to continue to wear the devices, but wear headphones over her devices. And then she was given information to follow protocol for decreased sound tolerance using these devices. And then I also gave her misophonia music exercises as well so that there was something pleasant for her to do and something that she would like to do when it came to sound.

All right, so then at one month, she lived about five hours away. So she would drive in to see me. She felt that her brain felt quieter and her head is different and she feel more, she felt more relaxed. And she reports that the tinnitus, headaches and tinnitus and the headaches have diminished even though we weren't actually working on the tinnitus yet. And she was using her ear level sound generators, that's EOSG, for 10 to 12 hours.

So she was wearing it pretty much her waking hours. But she has not been using the tabletop sound generator at night or doing the music exercises. And as we see patients, you kind of have to ebb and flow with what they're able to do. So I didn't, you know, chastise her and say, oh my gosh, you're not going to get better because you're not doing what I'm telling you. I said, okay, let's figure out what is working for you and what's not and then let's pivot.

Right? So it kind of depends on what she's doing. And also, you're always trying to keep the expectations well within what she understands as well. Right. And so again, a reminder of what she needs to do.

At our two month check, she also said her head was calmer. The buzzing in her head is not as bothersome. So again, even though we're not treating her for tinnitus yet, she's not crying anymore.

With certain sounds, she carries her Bose noise canceling headphones around, but she doesn't have to use it as much. She's still not using the tabletop sound generator night.

But she did start doing her music therapy at her one year check. She sustained another head injury by being kicked by the horse. And she's tired and disoriented. So again, going back to it, I, even though she drives five, five hours to see me, I didn't want to say, okay, well, since you're here, let's kind of push you through. I'm like, okay, so you have to step back a little bit, give her grace and say, okay, what can we work on now?

I know you've had another episode or another. Something happened to you, right? And when they're tired and disoriented, especially with brain injuries. Like, you have to be able to work within their realm. So we kind of backed away a little bit.

Now in this was kind of interesting because in that time I actually changed office and opened my own practice. So I was not able to access her files and so I couldn't tell her where I went. She ended up finding me. I felt awful. But she ended up finding me.

Two and a half years later was the check that we did. That was the first check at my new office. And we started with rechecking her hearing test. Her sound sensitivity was good, so we restarted some sound therapy for her tinnitus. And at a three year check of her LDLs, it was normal, 95 decibels, up to no response for both ears.

She was very happy. She said she's singing again and listening to hymns and worship music. She can hear different tones of voices. So again, this is kind of one, one of my favorite cases because again, you have to learn to, like I said, ebb and flow with whatever the patient is doing. Whatever happens in the professional's life too, right?

Like she couldn't find me and she ended up finding me. So we just picked right back up and she was doing O. But even that check in is going to help her understand that we're here for her and that no matter if she has a episode again or whether she's doing well, like, we want to hear about it and we want to be part of that and part of her life. So with that, I'm done with my case study, but I wanted to just check the Q and A before we head over to the next case study.

Anything in there, Jason? Nothing new yet at this point. Here we got somebody. Now, let's see here. How do you turn off the microphone for a hearing aid?

Completely in the software. Is there a specific company you recommend when using hearing aids as sound generators? Great, great question. So, yeah, there's a lot. Now a lot of manufacturers are doing it really well.

Before, you used to have to just go into the. Where you do your amplification and just drop everything down so it looks like flat. So there is. When you go into their tinnitus programs, there is an option to turn off the microphone and only use it for tinnitus and just allow the volume control to be for tinnitus. Sometimes it's something in the app that you use.

So it just kind of depends on the manufacturer. There are a lot of ones out there that have tinnitus programs. Now there used to be really limited ones that I would recommend. So I would say many of the manufacturers you can use for tinnitus, I'm not particular to any particular one because they've all kind of caught up with each other and they do really well. So I'm going to kind of keep it like that for now.

And I don't know if Jason or Emily want to add in to that, but I'm thinking, yeah, I think a lot of manufacturers do tinnitus very well. I will say it's gotten significantly better. At the most recent updates. It was a little bit to finagle, we'll say five plus years ago, but within the last five years the updates have

been much more favorable to allowing either no microphone input on or slow to low input microphone. Which I think makes it better for people like the three of us of whom spend a lot of time in this, but then also for providers who are just starting to get into it, feeling more comfortable and confident in their ability to manipulate how the hearing aids are working, but then also being able to use them at a later time when rather than a long time ago, we needed first a sound generator and then we needed a hearing aid and then we needed this.

And so it's become much more both provider and user friendly that we can traditionally take care of this within one device rather than needing a multitude of them, which is much nicer for everyone. Oh, I agree 100%. We do have one additional question here. Is there really sensitivity to moderately loud sound inputs? Why not turn down soft inputs all the way and mine those LDL instead of turning it all off?

Interesting question. I don't think I ever got that question before. You know, for me, as a tinnitus and sound sensitivity provider, I. When, when we talk, when I talk to them and try to get their sound sensitivity issues, I do LDLs and then I also talk to them because I'm usually able to tell whether or not it's hyperacusis or misophonia. And there are different types of sound sensitivities that you have to be aware of.

And so let's say if you were only to turn down the low input, let's say what if there's something that was giving them, that actually gave them that sound sensitivity? Like spike? Right. And so for me, I prefer to really try to train that brain to, to relax. Because a lot of the times with sound sensitivity patients, they're already heightened, they're already worried, they're anticipating.

They go into a place and they're like, oh, My gosh, I. I think I'm going to just put my earplugs in because I don't know, somebody might. Somebody might crash a dish, you know, at the restaurant or drop a piece of lumber at Home Depot or something like that. Or like, you know what, I'm just going to stay home then, because I don't even want to go outside because something out there might actually hurt

my ears. And so for me, that whole. When we teach about tinnitus and sound sensitivity, I teach the neurophysiological model.

And so I need that limbic system to relax and I need that autonomic nervous system to not be heightened. And because of that, I use the method of, let's just turn that microphone off. Don't worry about it. Trust me, this is how we're going to actually do it. And that way they don't have to be worried about some kind of spike of amplification because you're amplifying certain sounds.

That would be my preference. I don't know if Emily or Jason has anything else to add to that. I mean, I think the other side of it is just keeping things as natural as possible so the brain has an easier job adapting to it. That way your brain's not working extra hard to be able to process things, which causes a heightened awareness of your autonomic nervous system. So using the tools that way, it makes it easier for the brain to transition, in my, my opinion.

Yeah. I think as we're reintroducing sounds and working through that, finding comfortable, familiar sounds rather than placing them into unknown situations is also important because similar, you know, when we're looking at this from neurophysiological model, we have to help the brain re recognize that that is a safe situation and a safe sound. And so, you know, starting very with things that are comfortable for them. And in this particular patient situation, the horse is not her best friend because it keeps kicking her, which makes it a little difficult because we keep having increased in repetitive TBIs. But, you know, we have to be mindful of that and, you know, being able to help meet the patients in those environments that are, you know, critical and the reason that they're going through treatment is to get back into those parts of their life.

And so I think being creative sometimes and looking at, okay, this might be a sound I need to hear, but maybe it's not within their listening life. And start starting from those comfort sounds and building into some of those more uncomfortable sounds that we know are still safe helps protect the limbic system

and their ability to start healing from that exposure. Awesome. I agree. All right, so great questions.

For the sake of time, I'm going to pass it on to the next case presenter and if you have more questions, keep putting it in the Q and A. Jason will be monitoring that. We can also take it at the end. Yep, I will keep on those other two questions. We have one I think we've kind of addressed already, but we'll, we'll touch on it again and it will. The other one will come up in my talk as well.

So we're good. Okay, wonderful. All right, so I'm going to talk to you here about a different case and similarly to Natalie, there's going to be two truths and a lie that we're going to start off with.

So one, we've got a 69 year old man. He has experienced bilateral sudden sensorineural hearing loss, refuses amplification, spends 24,7 in AirPods to stream sounds for his hyperacusis and tinnitus and he refuses mental health counseling. Bullet point two, he is a recluse who thrives in solitude. However, his hyperacusis and tinnitus have left him not only alone but unable to re engage with society.

And on a medical wellness retreat he was prescribed IV ketamine and psychedelics and was able unable to complete the treatment. Any thoughts on which one of these is the lie?

I got a three and a number two.

Another three. All right, all right. Threes are coming in pretty solid. Y. All right, so three is the lie.

However, he did complete the treatment. So three is kind of a partial truth. So he. All of these are true in that he did go to a medical wellness retreat and he was prescribed IV ketamine and psychedelics but he did finish it. It was not a stopped treatment and I like to put that in there because the three of us see such a myriad of non traditional patients within our practices that things like IV ketamine and psychedelics are something that my patients experience.

I'm not going to say often, but more often than most of you, I will say to where it is quite a regular occurrence within my case history that we're talking about med loads and being open and looking for it from that angle.

All right, so with this gentleman, since what was the truth, he is 69 year old, he lives in remote Alaska. Living in remote Alaska in and of itself makes you a little bit more of a recluse by choice. He did experience a diagnosed bilateral sudden sensorineural hearing loss. He was able to regain some measurable hearing, but he had minimal recovery to the left side. Completed multiple rounds of oral steroids, a course of treatment in the hyperbaric chamber.

He discovered during that time that he was claustrophobic, so he did not do additional treatments in the chamber. And he did also have three rounds of trans tympanic steroids. He had had tinnitus prior to having the sudden sensorineural hearing loss, but it was significantly worsened following that event. He has had multiple failed hearing aid trials prior to coming into our clinic. And he does use his AirPod Pros 20 and he has a couple of pairs that he swaps out so that he is never without them in his ears.

Kind of looking from evaluation right here, we were within normal limit sloping to mild. And then that left ear was within normal limit sloping to severe. That was the side that didn't have much recovery. His LDLs were a little bit better on the right side, a little bit worse on the left side. As expected, kind of looking here, we did do tinnitus pitch matching and minimal or pitch loudness and minimal masking level.

That was pretty what we would expect to see based on his description. He was very competent and comfortable and able to score these. And he was able to have complete masking during that portion of the exam. His THI was an 80, which places him into the catastrophic category of severity. His tinnitus functional index, his.

His TFI was an 80.8. And we can look in here and we kind of see the breakdown of what the TFI is looking at. Intrusiveness, sense of control, cognition and sleep are all scoring incredibly high on those different areas. So we know that this is heavily debilitating in different avenues of his life. His auditory response is his least concern.

He really is not worried about the hearing loss at this time. And that has more to do that. This is someone that does not have a television. This is someone that does not live with people. And he on purpose lives absolutely with no one and near anything.

So I was not surprised to see that his auditory profile in terms of concerns was much lower. He would really like to see life getting back to where it was prior. And his quality of life is much more diminished and his emotional response right now is quite heightened.

In terms of what do we do. I did encourage seeing if we could work on some auditory stimulation so that we could work towards helping some sound sensitivity levels. He had been to three other offices and tried four different devices and he was not willing to try new traditional hearing aid devices. What we ended up doing was we set Some parameters up for how we were going to use the AirPods. Taking the AirPods away was not going to be a choice for this.

So what we were working on was how can we both use the AirPods as a positive tool but then also allow his ears to just be ears and not have the AirPods in 24 7. Because in this situation think of them similar to earplugs or headphones where we don't want him to be in them all of the time, but we also now have to create and remove this sense of sound that he has added into his lifestyle. Part of what we did was we took I Forget which generation AirPods he's in, but basically we took the noise canceling out of them and kept them more in like the live listen mode so that way it wasn't doing quite as much background noise reduction. We had them at a much softer level and worked on weaning down

towards how much he was entering or placing into his ears during that time and we were getting to the place that we were able to still be using them but not having them on all of the time. One of my main focuses though was getting him into a cognitive behavioral therapy program.

As this was someone who was significantly suffering from mental health and the inability to self advocate and be able to recognize and move forward with some different barriers in treatment. He was willing and did agree to do CBT once they were able to work with him from the cognitive behavioral therapy angle. Even with no changes to his listening lifestyle or program, he was having significant sound sensitivity improvement. Once we kind of gotten him out of that fight or flight response after we had the sound sensitivity to a manageable place, I did fit him with a linear device. He was instructed to do two 30 minute listening sessions per day.

However, we started very small so we did five minutes for a couple of days. We then did 10:15 and we built up to 30 because what we didn't want to do was potentially re aggravate or trigger an emotional response to sounds and input. But then he was able to successfully complete two 30 minute listening sessions sessions per day. He was to continue his cognitive behavioral therapy program and appropriate sound AirPod integration listening support. So if he was going to be doing something where there wasn't other sounds involved, he could keep them on at the low listening level.

But thankfully the AirPods were no longer at a 24, 7 usage.

So at his two week follow up he was compliant and I'm counting this two week as two weeks after we had fully integrated into the 30 minute listening sessions not that ramp up into time. He did have a slight increase increase in his tinnitus awareness, which is not uncommon. When we're starting a new treatment, traditionally we say don't focus on it. We start a new treatment and indirectly you are focusing on it more than you had been previously. Additional support that was needed was just navigating those fluctuations.

We did continue counseling. He had graduated from his cognitive behavioral therapy at this point and he was enjoying his linear listening sessions. Now this is a long window of working with this gentleman. So he had graduated CPT because he'd already been working with a cognitive behavioral therapist for months at this point. Just kind of a little condensed when we're looking at it from this timeline.

At his six week follow up to his linear fitting, his THI had gone from an 80 to a 62. He reports a modest improvement to his tinnitus, but a significant mindset was changed in terms of how he experiences or views his tinnitus. Additional support is he's frustrated with the stall. He felt he was kind of of stuck and was not seeing movement. Continuing counseling and we were and I reminded him to bring back some of those CBT methods such as different breathing techniques and grounding and relaxing techniques for him to be able to reintegrate those back into his daily listening life.

Tenus nor non tenidus. At his 12 week follow up, his thi had gone from an 80 at the onset down to a 40. He reports that he feels he was an active mindset shift, but he was not ready to stop linear. For those of you not familiar with linear, the initial Recommendation is a 12 week treatment plan. For those of us using it in the real life, it's often recommended to go beyond that time frame.

And this was an individual who both myself and he did not feel that we were in a position to be stopping active tinnitus treatment from that angle at this point. So he was recommended to continue as had been going for the last several weeks. At his 18 week follow up, we had had yet another 12 point depreciation. From a thi perspective, he no longer was feeling burdensome by his tinnitus. He didn't feel that it was consuming and even more exciting than that, he wanted to talk about traditional amplification now that the tinnitus and the sound sensitivity were no longer overwhelming and he felt like his, you know, limbic system was a little bit more functional.

He wanted to go into town, he wanted to get to check out some things he had missed. Going to one of the local restaurants where they did like a home cooked meal every evening and he wanted to go in once or twice a week. So we were able to fit him with bilateral hearing aids. In addition to that he had re engaged with his therapist at that point who had diagnosed him with some resistant depression. And he was going to a medical retreat which focused on IV ketamine, natural psychedelics and a seven day inpatient stay where they have around the care support, mental health counseling, different therapy techniques to really kind of help boost the system along.

The support center is in Colorado. I know some of the comments where that's not a thing. It is a thing. Quite a few of these places popping up around but Colorado is actually one of the first psychedelic ketamine treatment centers in the country and he did go and have a seven day stay. At his 12 month follow up his thi was holding steady at a 38.

So 32 to 38, that's not a consequential shift. He reports that tinnitus is stable. He does have occasionally a day where it'll be bothersome, but he's still not actively aware of it. The majority of the time he is continuing to successfully wear hearing aids. We are fully graduated out of AirPods except for music listening or listening to an audiobook.

And he is after a three month kind of growth of listening to overall gain able to be at full REM measurements for where his target should be at with his amplification. This though is a period of almost probably 18 months working with this patient. So from kind of initial appointment one to what this 12 month fall looks like it's about an 18 month time frame. So it's, it's, it's certainly not a long one but it is possible with time. And so if there are any questions I'd be more than happy to.

I got some for you. How do you use minimum masking level to inform hearing aid programming and fitting? Is this actually taken into consideration or is it just added information? Yeah, so I think this is going to vary depending upon what strategy and kind of how you're working. Are you using a sound

generator where you are applying a masking level and looking for it?

Are you looking at this from kind of sound inclusivity which is more the direction that I was headed was working on because he was not willing to go into a traditional amplification where I had that ability to be in control. So there's going to be some variations and also also I think it's really nice to have information. There are some patients that you will test for mml. And it is very stubborn and it's really difficult to find an MML reading. And that gives me some insight in knowing, you know, potentially what sounds to avoid what sounds to work with what sounds to kind of how do we frame with what is too much or too little?

And then there are other patients who they describe their tinnitus, and the testing shows their tinnitus on the audiogram is quite a significant level. But you put one DB over where that is and they're like, oh, it's gone. Hallelujah. This is going to be a little bit easier generally to work with. So I think from the provider side of things, it gives us some information of how willing to be moving or flexible is the brain and letting us work with this, or is it going to be a little bit more difficult?

We have to come at this from a little bit more strong counseling angle and then looking at potentially different sounds. So I think it just depends, you know, previously when we had a little bit more limitations and we were using more traditional sound generators only, it would give us some information and kind of, you know, roughly how much sound do I think I'm going to be adding in? But I would say now I use it less as a measurement from that angle and more as an information for me of what do I expect this person's brain being willing or potentially a little bit more not willing to move forward with it. Great. Yeah.

I was going to add in real quick on the mml. I love measuring MML because that's what shows the patient how their perception to tinnitus is changing. Right. Like, you can measure the loudness of pitch, and sometimes the loudness doesn't change, you know, throughout the treatment management

process, but the MML will. And so you can show them.

This is what your MML was when we first started, and then this is where it is now and guaranteed. And it's different if you use broadband noise versus narrowband noise as well. And so you can kind of share that with them. But I love doing it and sharing it with them because to me, me, that shows them the progress that they're making. Yeah.

And I'd add in just, you know, doing the testing for tinnitus in general, pitch, loudness, mml, what that does is there's very minimal diagnostic benefit to doing those tests, but it shows the patient that it's real, that you understand it. It quantifies and qualifies it. It also makes it less intimidating because now you have information that you can work with, you know, people who are really concerned about their, their tinnitus. They're often thinking it's the worst thing ever. And now you can identify where, where it is.

And typically it's not very loud and often it doesn't require a lot of sound to manage it. So it can really reduce that fight or flight response right up front to recognize that. Great. So next question for you. How long after the incident did patient wait for recovery before seeking therapy?

Therapy?

If you're speaking towards seeking therapy as cognitive behavioral therapy, I had, I think he came into my office at about eight months post sudden sensory neural hearing loss. And previous audiologists that he had seen had not recommended traditional mental health therapy. They were really just focused on the amplification side of things. So it was about, about eight months after his sudden sensory neural event that he got into CBT also. And in this gentleman's case, I had him work with a therapist not using one of the cognitive behavioral therapy apps.

I do work with the different apps and use it within my practice. But this was a patient who needed a actual human being to be facilitating his therapy and not using some of the programs that are available as his needs were quite significant.

Do you find that it is generally easier to counsel patients to move from AirPods to hearing aids if they are using them so consistently? I have found that the patients tend to be more receptive if they are wearing their AirPods so much. But then again, this is typically not in sound sensitivity populations. So I don't know what you all have seen.

I don't see regular patients anymore. So I only see tinnitus and sound sensitivity patients. So I certainly can't answer on the traditional. Just I'm using AirPods as a listening device and transitioning into amplification. But in this gentleman's particular situation, I was actually relieved that he was using low level sounds rather than just using isolation techniques techniques because some of the sound sensitive patients will come in with cotton in their ears and then earplugs and then headphones.

We kind of have to peel those different layers away to reintroduce sound. He hadn't completely shied away from sound exposure, but he lived such an isolated life that his sound was incredibly controlled. And so this was a little bit of a more uncharacteristic situation because normally we have many sounds around us all the time that we can't control and he had nothing around him and so he was able to have that little bit of sound. So I think in his situation, once his brain and working with a therapist and being able to kind of reintroduce sounds healthily. That allowed us to use that AirPods as a positive tool rather than a negative reinforcer, which did get him back into amplification.

But it just goes to show that sound is not always created equal. To be fair, the aids that we ended up placing him in were ones that he had tried in a different office. It was just his brain wasn't ready to receive the amplification at that time versus I didn't try a new company, I didn't try a new device. It was the exact device that he had most recently tried. But his brain was in a position at that time to accept

the sound for what sound and what amplification was.

And I, I really think that comes down to a lot of it is is the person themselves and their brain open, willing and capable of receiving the information that we are now providing them. If they're not, it didn't matter what tool you used versus if they're in that position to start working through those steps, we can use a variety of tools and accomplish that. And sometimes AirPods are one of them. I'd add into that. If you look back one slide here, I'll go back to it.

The language you even posted in here shows that that through the like six weeks time he was already into this acceptance phase and starting to use different language. His mindset has changed. Now he's ready. And that's essentially part of the grieving process of saying I have hearing loss and I have tinnitus and saying that this is something that I'm going to have forever. This is something I need to treat.

Some people aren't ready for that right off the bat. And that AirPod could be the the bridge to getting there for sure.

Next question. This is such a cool case study. Thank you. What would indicate that a patient might or might not find benefit from Lenire?

So the long it's a short but long answer. So my most brief answer is going to be as I was one of the phase one providers. This was also a patient that was early fit within Lenire. This gentleman is almost at the three year mark at this point. So this was a much earlier case.

Things that I don't like to use Lenire for are sound sensitive patients. If the sound sensitivity has not been addressed that to me is an immediate contraindication as it is quite a lively profile of sounds that they're listening to. Plus then the tactile stimulation from the tongue. Tongue. But because this

gentleman had already had quite significant improvement with his sound sensitivity and at the time I introduced Lenire to him, we're going to think of him more as a traditional tinnitus patient.

I felt comfortable moving forward with that because he had already completed and graduated at the blessing of his therapist from cbt. We had already gotten him to a good listening sensitivity and kind of place from that angle. And so this for me was more of a straight tinnitus case at the, that at that level there are medical contraindications of which you would not use linear. But personally, over the last almost three years, sound sensitive patients are not a good candidate until sound sensitivity has been addressed. But for traditional tinnitus patients, it can be well.

Also, despite having had a sudden sensorineural hearing loss, his hearing was still within the listening parameters of the device. Because there are some sound limitations. If the linear headphones cannot account for the hearing loss depreciation that is present that I wouldn't have been able to use it. But he had had enough recovery that I was able to use it in this situation.

Awesome. I actually agree 100%. I have the same situation where if a patient is coming in wanting linear, but they have significant sound sensitivities, we're going to address that first before I'm going to put the linear on them. Yep, perfect. Well, those were some great questions, but I want to be able to have Dr. Leyendecker's case be able to be heard.

It's also a nice one. And so with that we'll answer any questions in addition at the end as well. Thank you. Yep. And Larry, I didn't forget about your qu question.

We will answer it. I think all three of us kind of address it in our, our cases. So then we'll, we'll walk through it after. All right, so mine, two truths and a lie. I have a 74 year old male experiencing tinnitus about 10 years ago, but over the last couple of years it's increased in volume.

He is a private detective. Think Colombo, like old school 80s sitcom. Wears the hat with no brim on it, drives a hemi, likes to spend nights on long stakeouts and drives, like I said, is the Dodge Charger with a loud hemi. He has a strong history of noise exposure to his car, but also a lot of shooting and staying up with his pistol. His primary concern with his tinnitus is that it is too loud.

If only my tenus was half as loud, I wouldn't care that it was there. He is annoyed with louder sounds such as motorcycles, TV and the furnace running. And third patient said his Tinnitus started following an incident where he was shot following a high speed pursuit. What do you think it is?

I got a two and a three. Another two.

One person picked one third and a lot of twos. It's actually three. Not been in a high speed pursuit or at least it was not the result of having tinnitus. Later you will find out that he has definitely been shot and shot at. So this is not something that goes easy for him.

But thinking about all of those things happening in his tinnitus is the most bothersome thing for him right now. So I didn't see him originally. He started off with one of my other providers who ended up going on maternity leave. But hearing loss, he does have bilateral moderate high frequency sensorineural hearing loss. His uncomfortable loudness levels are significantly reduced from the normal limits across frequencies indicating hyperacusis bilaterally and averaging at 67 db hl in in the left ear and 69 in the right.

His TRQ tinnitus reaction questionnaire is at a 48 in the moderate range with a 90% awareness and 80% disturbed tinnitus functional index. The TFI is at 66 which indicating it's a big problem. Ranking his order of problems for him, tinnitus number one, sound sensitivity also number one and hearing number three. He really didn't care about his hearing loss or even notice that he was having trouble hearing. So looking through the first year of working with his provider, you can see the hearing loss is pretty

consistent.

And his UCLs did improve throughout the process. He started with a combination hearing aid and low gain and pink noise what we would put at what we call as the mixing point. So at a level where his tinnitus is still noticeable but less noticeable and the noise is non bothersome, it's there but he doesn't care that it exists in this particular situation. We used an Oticon hearing aid and he was fit in 2020 and then you see serial testing all the way up through 2022 where there was some improvement. Two years.

This guy is a slow mover, I'll. I'll tell you that right now. But he has made progress. But he doesn't really recognize that he's made progress because his number one concern is really att. If only it was half as loud.

So I took over, my provider went on maternity leave and he didn't want to go back after. He liked working with me. So we started figuring out what's the next step. So 2022 he had a TFI at 78 so it's actually increased a little bit. TRQ 66.

So he's, he's having some bothersome time. In his MAQ misophonia assessment questionnaire at that time, I assessed how his sound sensitivity was bothering him him and it was pretty significant because that's the score out of 63 points. Hearing aids are working. However, he doesn't, they're not at full prescription and he doesn't feel like there that he hears any better with them in or out. And he asked about linear.

So this is in 2022. Linear is not available yet. It's. It's still. The marketing was great.

The research early on was being promoted and he is heavily involved with watching whatever is online about tinnitus. So he's, he's deep into the Internet about tinnitus as well. I did give him a misophonia

music protocol. In this particular protocol we listened to music, his favorite music, something that he really enjoys. Because our, our primary concern is still sound sensitivity because it's clearly still affecting him.

But listening to your favorite music twice a day or once a day if possible, 20 minutes a day. But it's something that you really like, something that brings you back to the good old days. For him it was Elvis Presley. And we're setting that volume at a level where he finds it comfortable. The first week you leave it there all week.

The next week you're going to turn it up one notch, just one notch louder. Keep it there all week for this same level. And then the next week you're going to turn it up one more notch. And then after that week week then you're going to go back to what is comfortable and you just kind of continue that cycle and it's inducing this positive information. I will even use for some patients if there's a smell that brings them back to that music, you know, so some people, it's.

It's holiday music. So they really like that. I have them light a candle that reminds them of the holiday as well. So that way it really induces that limbic response and will help them feel more comfortable around such sound. It helps quite a bit after that.

Now seeing him back for my first time with him, his MAQ is reduced significantly. So from a 53 to a 36, TFI is about the same. TRQ has dropped down significantly. Why do I do both the TFI and the trq? Primarily the TRQ I do at the beginning because it has a question about suicide side and it is something you have to address.

You have to recognize and it gives us an easy way to discuss it on a level that makes it more objective instead of coming after them. So it makes it easier for us to have that conversation. He reports feeling anxious about being in quiet, fearful of taking talking to someone about it because we recommended

therapy for him because he's worried about losing his carry permit or he's also worried about being on meds for the same exact reason. So he's not really doing anything on the mental health side of things that really could help him support this process. Recommended it several times throughout the process but he wasn't able to make it happen.

But the results are pretty consistent for a year following this appointment. No major changes. Keeping the pulse on things. We see each other typically every three months we move to phone calls. I still do phone calls with him.

I had one with him last week actually and he's actually doing pretty well. But in those situations I always remind them, you know, when we're going through treatment, I'm never going to give up on them. So we're going to always have these ongoing care appointments until we feel, both of us feel like we're in a good spot. So in 2023, first availability of linear Emily and I spent some time in in Ireland learning about it and then the first day I could fit it, he was on the schedule at the end of the month. Not right away but when, when I could fit it.

So he had very high expectations and his expectations, which is the hardest thing to recognize when you're fitting a new tech treatment, is we didn't now the expectations. We were still figuring that out ourselves. But his were that the tinnitus needs to get softer. And softer is not our goal. Our goal is to change the awareness to make it so you don't care that it exists then perceptually it will get softer.

But if you don't care is the first step. So that was a big challenge. His first follow up TFI is still pretty high. TRQ high maq right in the same area area he abandoned his hearing aids at this point. He never saw benefit from the amplification.

He's still in big denial over the fact that he has a hearing loss. Didn't feel like he was getting any benefit from the hearing aids. And I'll walk through the the pathway and how we would program hearing aids in

that scenario in a second but for sake of time I'm going to keep moving here. But he's trying to linear and working through it. Still high expectations that if only my tinnitus were Half as loud.

I'd feel a lot better about it. It 12 week T5 went down significantly. He had a really good situation. Everything was going well and he wasn't concerned about any things. Found out later.

This is when he was actually finally divorced from his wife. But. So he was in a good mood at that point. Following up though, from that, things changed significantly. So.

So back up right where it was before. So there was no major change. It was just a blip in the screen where things were going really good, which is also really important to have because if you're having a really good result, then it gives us that ability to show that there are good times that you can address. So no major changes. Not really concerned about sound sensitivity at this point, which is a big one.

Wind, that's. It's a really big deal. But he's still a little bit sensitive around specific noises. So misophonia still very, very strong. He feels frustrated.

He feels like his tenus is getting worse because, you know, he's done a lot of different treatments now. He's done hearing aids, he's done linear, and he's. He's not seeing any results that make his tinnitus softer. He's paid thousands of dollars and he doesn't feel like he's getting anywhere.

So I encouraged him to see a therapist again. You know, it was really hard for him to make this step. And so we made a few months of time where we just called each other back and forth first before he would make this step. And recognizing that for his major concerns. In that process of having those phone calls, I found out that.

That 30 years ago, his brother came home drunk and shot him. Shot my patient. And after that went into to in inpatient care and he's never seen him since. So he sleeps with his gun next to his bed. He won't use a sound machine at night.

He. He says he gets good sleep. Sleep. But he has made, you know, drastic things. So he lives in the country, he knows his yard, he knows everything to protect himself.

So clearly he's got some PTSD going on. He's got a lot of stress going on around sleep and, and. Or even just being around guns. But, you know, his way of controlling the process is making it really hard for him to get used to his tinnitus. So finally he made that call to a therapist.

This.

And so a. After all of this, he is still fast, linear fitting. So this is still in 2023, almost into 2024, that he still was not seeing major success. But some he, he doesn't use a sound machine. He's not using the of the linear consistently anymore either.

He's still not taking any medications for the side effects. His major concerns overall, he's healthy person, but his mental health is obviously not in the right spot.

So we moved to those three minute or three month calls in 2024.

That's when we found all the major concerns about his past. He's never really talked about it to anybody besides a therapist when he was 17 years old when it happened. So after that then he started having more open conversations with me. But he's still really, really trying to push for getting the hearing aid or getting the tinnitus to be softer. That's his main concern, not accepting it.

So I push, pushed and pushed to get him to go into a therapist. And finally he made the change and he is now working on acceptance and commitment therapy, which is a form of cognitive behavioral therapy, which has six different core processes. Excuse me, Just recovering from a little cold. Primary 6 core processes, acceptance, cognitive diffusion, being present self as context, values and then committed action. So working through those processes.

I've been working with him now every three months still since then. And the last six months he started to use some of those change words in recognizing that he is getting towards acceptance. So he is seeing some benefit from doing some guided meditation or self guided meditation on his own. He is open to trying linear again with the meditation. It seems to be an effective approach for him.

So I'm actually scheduled to see him in the next month to, to start doing that. So he's making changes, but he had to go through a really rough journey to get there. And some of our patients will do that. So that's what I got for you.

So we have one question. Why is he driving a loud car with sounds, with sensitivity to loud sounds? Great question. And it really comes down to his Persona. That's who he is.

He wrote a book about some of his detective stories and things like that. So it's all part of his Persona. If we were to take that away from him, it would be like taking his gun away from him, I think. So. Larry, to address your question.

Sorry, one more thing, Jason. I was going to type it to Talia as well. But it also is important to understand that there are different types of sound sensitivities. So for this particular one, it doesn't necessarily mean that he has a blanket of sound where anything that goes over that particular decibel level he'll be sensitive to. When you're, you're Sensitive to particular sounds.

It might just be one or two, and it doesn't matter on the loudness. I just wanted to put that in real quick. And I do want you to answer Larry as well. Yeah. And for him, he also, you know, he's.

He's got misophonia for sure. Speaking with Dr. Pavel Jasperboff, you know, understanding the. The statistics of misophonia, he would say 80% of people who have bothersome tinnitus also have. Have misophonia where they're. They're concerned about certain specific sounds with more rage and anger instead of just fight orf flight.

So. Yes. So, Larry, how we would fit hearing aids on somebody with that needs hearing loss or has a hearing loss, but also having sound sensitivity? I typically will set them to full prescription for meeting REM targets and then back them down. You know, so go down to adaptation level one, look at what their they're at now, talk them about how they feel.

But you got to have like an end goal, which is target. Right. So if we, once we get that, then we'll back down and then we'll work over, you know, as Emily did, 18 months. That might be how long it takes to get to the full prescription. We'll just slowly work our way up there, maybe meeting every three to six months to address how long or how much of a change we're going to make.

But you got to have a starting or an end goal, and then you can document where you're at, because if you're not the next person to see that patient, you want to make sure that those documentations are there to address that.

I think, I think being willing to be flexible with time is one of the most important aspects of this. Each patient's on their own time frame for acclimatization and for getting to a comfortable place and to being able to accept and move forward and take those tools that you're providing them forward. Some patients might do it really quickly, and others might take it a very extended period of time. So I think one of the most important things to think is throw the time frame out the window and just work with the

individual patient. The situations in front of you, some of them will surprise you, and others you're like, all right, we're doing this again, let's go for it.

But that flexibility is often what I think lends us to being able to be successful with some of these more difficult cases. Yeah. And I wanted to add in to, like, what Emily said, where some of these sound sensitivity patients come in with Earplugs, headphones, they also have a hearing loss and then they tell you to stop rustling that paper. You know, that's what happens. And so a lot of the times I do counsel my patients to make sure that they understand that sometimes, trust me, let's get, let's work on your sound sensitivity.

And this is not a lie, this is the truth. Sometimes, sometimes sound sensitivity patients, sometimes they come back to me the next day and it is a lot better just by them understanding what's going on and that there is something out there that can help them. Not everybody, I think I've had maybe one or two that they've come back to me. So it's interesting if they're allowed to, I mean if they're going to trust you. Sometimes I literally focus on let's get rid of that and then let's work on your hearing loss because they're putting earmuffs over anyway, giving them more of a hearing spot loss.

So I try to get rid of that sound sensitivity first. Yep. One last question here. We're almost out of time. What resources training courses do you recommend for someone brand new to treating IDUs and sound sensitivity concerns?

The Academy has the CHTM, so the IDUs certificate management, I think that's an excellent foundational level course for kind of giving familiar with the history, getting familiar with terminology and just kind of gaining a, a kind of neutral level comfort. It's a part two. It is self driven in terms of time frames. I always recommend to at least start there. I know that there will be options.

You know, AO has choices. I know early on I then attended different psychology courses and therapy and counseling courses outside of audiology, but then at different conferences, you know, looking for the different content from colleagues of whom are in this space. But I would definitely say if you're brand new to starting out, check out the AAA's CHTM certification course and it's a really good starting foundation course. I agree. Jason, do you have an update?

I don't have an update. I'm, you know, low key working on. I've worked with Dr. Jasterboff to take over his course. So the TRT, the Neurophysiologic Model model course, he's pretty much done teaching it. I've, I've co taught it with him for the last three classes with them.

Now in the process of trying to modernize it, it, it's, it's an extensive course so trying to get it up to speed is going to take some time. But along those lines there are other Programs like that. There are other protocols, including tinnitus activities treatments and, and a few others that if you, you know, look at University of Iowa, they have a program and they're really, you got to get your feet wet. Just, you know, work with a patient. Don't give them something you don't know.

But make sure you find resources to get the answer. And you can always look us up. I'll, I'll throw them under the bus here that we'll be happy to chat with you if you have questions about a particular patient. I have patient or providers shadow me all the time here, so that would be an option as well. Well, yeah, and I will say, Natalie, Jason and I all have the same foundational courses and we talked about it earlier, the neurophysiological model, which belongs to the Jester bofs and that Jason's updating.

And so I think, you know, having some commonality in how we all approach it, even though we do things slightly differently, keeps all of us able to work so well together when we're working with patients or being able to tag off of each other is that shared foundation. But yeah, so check it out. And like Jason said, please reach out to us. We always enjoy being able to have new tinnitus providers and sound sensitive providers come into the field. There will always be more of them than us and we always

welcome those of you who are brave enough to jump in on this side for sure.

Thank you for that, Dr. McMahon. I wanted to tell you I have been here for almost 19 years and I can honestly say this is one of the most fun, interactive and practical sessions we've had. So what an honor, three private practice audiologists who have more than a little bit on their plates taking the time to share this information with all of you through our platform. Thanks to the Academy for bringing this to us. Thanks to all of you for participating today.

That wraps today's webinar. We did have a question. Will this be recorded? Will it be available? Yes, it will be available as an on demand recording within the next few days.

And even though you were here for the live, you can still watch it again in and refer your colleagues. So thanks again everybody. That's a wrap. Have a great rest of your day.