

**ACHIEVE: A Landmark Study of the Effect of Hearing Intervention
on Brain Health in Older Adults**

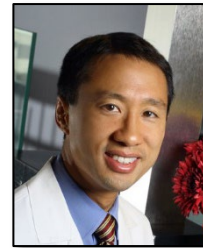
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Momentum Discussions Podcast from the Gerontological Society of America

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Announcer:

The Gerontological Society of America, meaningful lives as we age.

Jen Pettis:

Welcome to this GSA Momentum Discussions Podcast episode titled ACHIEVE: A Landmark Study of the Effect of Hearing Intervention on Brain Health in Older Adults. Momentum Discussions highlight topics experiencing great momentum in the field of gerontology.

We are grateful to Genentech, Lilly, Eisai, and Otsuka for their support of the GSA KAER Toolkit for Primary Care Teams and today's podcast episode. My name is Jen Pettis, I am the Director of Strategic Alliances at the Gerontological Society of America (GSA), and I am pleased to serve as the host for today's Momentum Discussion.

Jen Pettis:

I am so happy to be joined by Dr. Frank R. Lin of the Johns Hopkins University School of Medicine and the Bloomberg School of Public Health, who is the co-primary investigator of the Aging and Cognitive Health Evaluation in Elders ([ACHIEVE](#)) study. This study is a multicenter randomized trial to determine if treating hearing loss in older adults reduces cognitive decline that can occur with aging. Dr. Lin and his co-principal investigator presented their very exciting findings at the Alzheimer's Association International Conference in 2023. I am delighted to have this opportunity to chat with Dr. Lin about their findings and some exciting next steps. Welcome, Dr. Lin. I'm so glad you're here.

Dr. Frank Lin:

Thanks so much for having me, Jen.

Jen Pettis:

Dr. Lin, to start, can you provide our listeners with a brief overview of ACHIEVE? What did you and your colleagues examine and what did you find?

Dr. Frank Lin:

Thanks for the question, Jen. Going back over a decade there's been a building body of research looking at observational epidemiological studies (studies of older adults followed for many years), which has seen a clear connection between the level of hearing loss (someone's hearing levels) and the risk of being diagnosed with a cognitive decline or dementia over time. These observational studies have been very suggestive. They've been across many different countries and many different neurocognitive assessments of people in their 60s and up. Consistently, these studies have shown that greater hearing loss is associated with a greater risk of cognitive decline or dementia. It's interesting because there are potential mechanisms that link hearing loss with dementia, which always suggested then that something as simple as using a hearing aid (treating your hearing loss) could lower the risk of cognitive decline or dementia. We never knew if that was the case though, mainly because these were observational studies; studies where if people did use hearing aids, they on average did better than people who didn't. It remained unknown if this was because of the factors that led them to get a hearing aid. People who get hearing aids are often healthier, wealthier, and better educated. You couldn't disentangle whether it was the hearing intervention or the factors that led them to get a hearing aid. The [ACHIEVE](#) trial was a definitive randomized trial that was designed to ask the basic question, namely if we treat hearing loss in older adults and treat it well, can we reduce rates of cognitive decline and dementia over three years?

Jen Pettis:

What did you and your colleagues find?

Dr. Frank Lin:

The trial itself was funded by the National Institute on Aging. What we did in this trial we enrolled nearly a thousand older adults in four different study centers across the United States, and we recruited these people from two different study populations. About a quarter of the sample came from an existing study called the [Atherosclerosis Risk in Community \(ARIC\) study](#). The ARIC study recruited a random sample of the population 30 years ago when they were in their midlife, and they've been followed to the present day.

Dr. Frank Lin:

They look at how midlife cardiovascular risk factors may be associated with later-life cardiovascular disease. The ARIC sample came from a random sample of the population recruited 30 years ago, followed to the present day.

The other three-quarters of the cohort came from new healthy volunteers between 70 - 84 years old who were interested in joining a Healthy Aging study. Of 1,000 people at the beginning of the trial, they were randomized, by flip of a coin. They either got a hearing intervention or they got a health education control intervention, which was meeting one-on-one with a certified health educator to go over topics around nutrition and diet exercise. Both groups of people had the same amount of exposure to study personnel. That's important because just seeing the audiologist, for instance, could be good for you by having more contact with study personnel. We controlled for that.

That was the beginning of the study. They all got hearing intervention versus the health education control. Everyone had a follow-up every three years. Every year we assessed their thinking and memory abilities with a comprehensive neurocognitive battery, which is primarily visually based. It wasn't that someone couldn't hear the examiner, for example, whether they're doing better or worse, these are primarily non-auditory measures of cognition. After three years, we looked at the data, and lo and behold, what we found is that among the group of older adults who came from ARIC, which represents a random sample of the population 30 years ago, we saw that hearing intervention was associated with nearly a 48% to nearly a 50% reduction. The loss of thinking and memory abilities over three years, and a 50% reduction in the rate of cognitive decline just over three years, are remarkable results in the scale of the magnitude of what we saw there with the effect of hearing intervention on the rate of cognitive decline.

Jen Pettis:

Dr. Lin, when you think about those results, what is it that links hearing loss to cognitive decline? What are the mechanisms in the brain that make that link?

Dr. Frank Lin:

There have been a few of them hypothesized, and it's likely not that one's right and the other one's wrong. It's a combination of all three. The first one is the idea of cognitive load. What I mean by that is that hearing occurs in two steps. Sound must be encoded by the inner ear and that signals then sent to the brain for decoding. What happens is all of us develop some hearing changes as we get older, mainly because the inner ear progressively deteriorates over our entire life. It can't regenerate so the inner ear is constantly sending a much more garbled sound to the brain.

Whether the brain must constantly reallocate brain resources or constantly reallocate brain energy per se, to deal with hearing, to dealing with a much more degraded auditory sound, which then may come at the expense of our thinking and memory abilities. It's not so much that in this mechanism of cognitive load that hearing loss causes dementia, it's more associated with earlier exposure to dementia symptoms and cognitive decline. That's because that cognitive buffer, also called cognitive reserve, which we all have to some degree, rather than being available to help buffer against other pathological contributors to dementia, things like Alzheimer's disease and vascular disease, that buffer is instead being used up by having to compensate for the degraded hearing coming from the inner ear. That's one mechanism, that we call a cognitive load hypothesis.

Dr. Frank Lin:

A second mechanism, which sounds similar, but it's very different, is the idea that hearing loss may lead to or trigger changes in terms of the brain structure and hence the brain function.

Suppose you have constantly had some degree of auditory deprivation. In that case, the inner ear is constantly sending a much more degraded signal to the hearing parts of the brain, whether you see faster rates of atrophy over those parts of the brain, which can then have cascading effects on other areas of brain function and structure. We see that both in animal models as well as human studies. Participants have been followed for many years, comparing those who have some hearing changes versus those with quite good hearing. You see over time that people who have degraded hearing have faster rates of brain atrophy, parts of the brain that manage sound and language processing, but which also subserve areas of thinking and memory abilities. The second mechanism is the idea that hearing loss may lead to direct change in terms of brain structure.

The third hypothesized mechanism is going to be the most intuitive. It's the idea that for any one of us, if we develop some difficulty with hearing, struggling with hearing a bit more in group conversations, we're less likely to be socially engaged, or even if we are engaged, we may not be as involved in the conversation. We may feel a little more isolated and lonely for instance. We've long known that remaining cognitively stimulated, remaining stimulated socially and with others is incredibly important for our brain health. It is a combination of all three. It's not like one mechanism is right and the other one is wrong. It's likely a combination of all three.

Those mechanisms you can imagine are important because, theoretically, they suggest that potentially using a hearing aid, and learning how to use it well may be able to modify those mechanisms and hence reduce cognitive decline. Indeed, that may be in fact what we're seeing now with the ACHIEVE study.

Jen Pettis:

When primary care teams and other health care providers are using your findings and talking about the potential of hearing aids how might they talk to their patients? How might they use your findings and advice about hearing aids to talk with their patients?

Dr. Frank Lin:

From the Alzheimer's disease standpoint, the results are incredibly fascinating. They're important in understanding our idea of how dementing illnesses work and how the brain works. At the individual, clinical level, treating hearing loss has much more tangible proximal effects, including not struggling as much in conversations, being able to engage, being more yourself, and for safety reasons such as improved hearing of surrounding traffic while you're driving or walking. There are very immediate, tangible reasons to think about addressing and treating your hearing over and beyond a theoretical benefit of cognitive health over time, which also makes complete sense.

Fortunately, at the clinical level, there are immediate tangible benefits that you'll notice within days or weeks, as opposed to this theoretical benefit that potentially, at the individual level, could reduce the risk of cognitive decline or dementia. We can never predict that fully at the individual level from a clinical trial. But over and above that theoretical benefit, there are real tangible benefits to addressing any type of hearing issue and optimizing your communication. The good news is that the idea of "hearing intervention," such as using a hearing aid, doesn't come at any medical risk.

Dr. Frank Lin:

There's zero medical risk in addressing and treating your hearing. There are only potential benefits in helping improve communication and reducing frustration in communicating with others.

There could be this theoretical benefit of promoting and supporting cognitive health over time. It's a no-brainer in many ways when you keep that calculus in mind. You're speaking to this other hat that I wear as a surgeon and as an ENT and otologic surgeon. Everything I think about from a clinical point of view comes as a risk versus benefit. If there is a potential benefit and there's zero risk, then it's very easy. In contrast, some types of drug therapy can be risky while there may be some benefits, in which case the calculus gets much harder. In this case, I think the calculus is quite easy, given the evidence that's been growing to date.

Jen Pettis:

Dr. Lin, you have mentioned the benefits of cognitive decline by 48%. Why do you believe the potential is there to reduce the rate of cognitive decline in individuals with hearing loss? What's the science behind that?

Dr. Frank Lin:

I previously mentioned the three hypothetical mechanisms of linking hearing with cognitive decline or dementia. We think the effects we see in the ACHIEVE trial may be operating through those mechanisms, at least among the ARIC cohort, which represents a random sample of the population, which was on average at higher risk of cognitive decline and dementia than the healthy volunteers. In the ARIC cohort specifically, we are seeing a 50% reduction in cognitive decline. We've done a couple of additional analyses, and these papers are currently in preparation. When we do measures of social isolation and loneliness, we see that the hearing intervention versus control is having a positive effect on reducing social isolation and loneliness over three years. That leads to the mechanism of social engagement being a mediator between hearing loss and cognitive decline or dementia.

What's also interesting is the ACHIEVE trial where we also gathered brain MRI data on a half sample of the participants. Half of one thousand people got MRI scans at baseline, and then we looked at the MRI data from baseline three years later. We're seeing a positive effect on hearing intervention there as well. It's not definitive. It wasn't meant to be a definitive outcome, but we're seeing over three years of very clear, and strong signals that hearing intervention is having a positive effect on reducing rates of cortical thinning (thinning of the actual cortex of the brain).

So far, at least, the data suggests that these mechanisms may be modifiable with hearing intervention over three years. That's important because you could say these mechanisms are in play, but maybe hearing intervention is something as simple as using a hearing aid, which does not reverse hearing loss. Your hearing loss is still there, it's not going away, but we're seeing relatively strong evidence at this point already that the hearing intervention may be able to directly modify those pathways where you have a tangible, measurable, and demonstrable benefit within just three years, which is exciting to see because we don't often see that with other therapies in the Alzheimer's disease and related dementia space.

Jen Pettis:

That's so exciting. As you said, no risk for the patient; nothing to lose in trying it. It's incredible. I understand that because of these incredible findings, you're going to launch a broader national campaign later this year that encourages older adults to check their hearing and learn what their hearing level is and monitor that with a free app, Hearing Number. What does Hearing Number tell someone and why should they be testing their hearing routinely?

Dr. Frank Lin:

Jen, this is such an important question, as first and foremost I'm a clinician, and second, I'm a researcher. A lot of what I do is a "means to an end" to help the patient I see on a given basis. Research doesn't always directly lead to benefiting that patient I'm seeing in my clinic tomorrow morning. Everything I've ever done at Hopkins has revolved around three different things. It's the context of the framework of the research/evidence, policy, and awareness. That is with what we have to date in the ACHIEVE trial; we're seeing without a doubt strong evidence that hearing loss has a meaningful effect on people's lives.

More importantly, hearing intervention, now shown through the ACHIEVE trial, can also have a meaningful effect on reducing said risks and improving cognitive public health over three years. That's great evidence. At the same time, as the listeners are aware, hearing aids are ridiculously expensive. The average cost of a pair of hearing aids a few years ago in the United States was still around \$4,000, which is usually out of pocket. To put that in perspective, that means for the average American, a simple pair of hearing aids may be your third largest material purchase in life after a house and a car.

It doesn't follow from the evidence if hearing is so important and these therapies are so expensive and not covered by insurance. Fortunately, one piece of action that's changed in the last five or six years came from working several years ago with the National Academies and the White House. We got a law change in the U.S. called the [Over-the-Counter Hearing Act](#), which was passed in 2017, and went into effect a year and a half ago. Over the next few years, the over-the-counter hearing aid market will be rapidly developing. The idea that a pair of hearing aids could be purchased over the counter, much like purchasing a pair of wireless earbuds, will be evolving very quickly in the next few years.

It is exciting that these technologies can be much more accessible and affordable than they have been in the past. We're just beginning to see that the market is developing now, but it will take a few more years for the market to fully mature and get to a steady state with pricing. Lastly, as I talk about evidence, policy awareness, and hearing support, we have a policy now that will create affordable, accessible, and innovative solutions that are evolving. The amazing thing that will come from this is the awareness piece. Among most people I spoke with, the last time anyone ever got their hearing checked or tested was probably when they were seven years old in primary school. That's a problem.

Hearing is so important and there are these wonderful solutions, but if no one even knows what their hearing is, it doesn't matter. We've been working on a major development for a year and a half and will be officially launching a national campaign in the United States through the Johns Hopkins Bloomberg School of Public Health later this year. It's called the [Hearing Number Initiative or the Hearing Number Campaign](#). Any person, beginning as a teenager, should be able to measure their hearing each year and track their hearing number on their smartphone.

Dr. Frank Lin:

You can track your hearing yourself so you can understand how your hearing changes. This is like knowing your blood pressure, weight, step count, or glucose level, which you can test and track yourself.

The hearing number is a simplified version of the audiometric four-frequency pure tone average (PTA4), which is the technical term. The audiometric four-frequency pure tone average (PTA4) comes from your audiogram. The audiogram measures how loud different sounds and pitches have to be for you to hear them. The four-frequency pure tone average (PTA4) is an average of how loud the speech sounds (between 500-4,000 hertz) have to be for you to hear them. If your hearing number (your PTA4) is zero, that means you're hearing soft sounds. But as a number gets higher, it means on average, speech sounds need to be louder for you to hear them.

Everybody at birth usually roughly starts around zero or five or a little better than average. As we get older, after puberty, everybody's hearing begins slowly declining a little bit at a time. That's because the inner ear is all made up of post-mitotic cells (they can't regenerate). Everybody, over a lifetime, loses some hearing, but a lot of times you don't notice it because your brain compensates for it in a good way, but also possibly a bad way. Your brain's constant compensator may come at a cost to the brain, and you don't realize it. However, if you track your hearing number over time, you see and can observe the change, just as you might notice your weight going up a little bit or your blood pressure creeping up a little bit.

When you track that number, you understand something that's changing and that's going to inform you about things you can do to either protect your hearing or more importantly, to possibly optimize your hearing through adopting certain strategies or technologies. We have a website now for interested listeners, hearingnumber.org, and this is a School of Public Health website. There are ways you can measure your hearing number on your phone. Right now it's only available on the Apple iOS platform. There are a few different apps you can do on an iOS platform. What we're doing later this year is launching our own app at the School of Public Health. It'll be called the Johns Hopkins Bloomberg School Hearing Number app. It'll be completely free. We're not collecting any data as it is meant purely as a public service. We're on an iPhone or a compatible Android phone. In about three or four minutes in a quiet room, you'll be able to measure your hearing number yourself, and you can track it over your lifetime to clue you in about what you can do about your hearing as all of us get older. You don't have to see me, as an ENT surgeon, you don't need to see an audiologist. Just three or four minutes in a quiet, private room in your house you can measure your hearing number yourself.

I'll put into perspective why this number is so important. I'm 47, and if you had asked me a couple of years ago or even now, "How's your hearing, Frank?" I would tell you, "My hearing is great. It hasn't changed at all." I honestly feel that way. However, a couple of years ago, I measured my hearing number on my iPhone and my hearing number was 10 in my right ear and 12 in my left ear. From that perspective, anything less than 20, is considered "normal" according to the World Health Organization. Between 20 and 35 indicates mild hearing loss, and 10 -12 is firmly the normal range. I was like, "Oh, yeah, that makes sense. My hearing is great. Has my hearing changed? No, I don't think so, my hearing is great." To compare, I had my daughter, who was 16 at the time, check her hearing number on her phone, and hers was a negative three.

Dr. Frank Lin:

When I saw that, it was eye-opening for me. The reason it was eye-opening is because had you asked me if my hearing was worse than my daughter's, I would say "No, of course not. We're the same." But I saw she tested at a negative three, which made me 15 decibels worse than her. That's a big difference, even though we are both "normal." I was like, "Huh, I guess my hearing has gotten worse," in the sense that if I use that as a proxy for me, I'm pretty sure when I was 16, I was probably around a zero back then too, but I've declined 15 decibels, even though I'm considered normal still. The more I think about it, I know if I'm in a busy restaurant with her, where it's a little harder to hear, I know she hears better than I do.

It's because my hearing has changed. I would never see myself as having "hearing loss." But I do in the sense that my hearing capability has decreased since I was 16. That's why I hate the term hearing loss in general, hence a hearing number is doing away with that term. The focus is not on whether you have hearing loss or not, it's just about knowing your hearing number. You don't suddenly wake up one day with decreased hearing. Your hearing changes over time, monotonically, which means it gets a little bit worse all the time just as we all get older. Knowing my number now, in that sense, has changed the way I think about my hearing. You're speaking to someone who is a hearing researcher and a clinician, and just that objective neutral metric has changed how I think about my own hearing. At my stage now being 47 with, by all intensive means, normal hearing, I know now there are certain strategies and technologies I can't even begin to adopt.

It changes the perspective, from hearing loss being one of those things that you're trying to avoid one day, which you may or may not develop. It can feel like a life event to think about treating your hearing loss; you must go get a hearing test and get hearing aids. Instead, you can start thinking of hearing as this continuum across your lifetime that does change a little bit. You monitor it, and, incrementally over time, you can begin adopting various technologies and strategies to help you optimize your hearing. This new method will be implemented very quickly in the next couple of years as OTC hearing aids become rapidly and increasingly integrated within our existing smartphones and our existing wireless earbuds. Nobody will be able to decipher if that person is using a pair of wireless earbuds or hearing aids. It's one in the same, right? That's when things get interesting.

The Hearing Number Campaign is rolling out at the end of this year, around Thanksgiving. Depending on how big we go with the budget, other people may be partnering with us hopefully, and you may be seeing ads about it in your popups and feeds, and potential billboards encouraging people to download this free hearing app and to track your hearing much like you do any other health metric.

Jen Pettis:

We look forward to integrating it into the [GSA KAER Toolkit](#) to raise awareness among primary care teams as they're talking about brain health. But how can clinicians use that hearing number to help their patients and caregivers understand and contextualize their hearing?

Dr. Frank Lin:

I think the important thing is that we have this grid on the [Hearing Number site](#) that gives you feedback, depending on your hearing number, on what you can do. I'll say any hearing number, whether you have perfect hearing like my daughter, or like me, where my hearing is beginning to change. The fundamental goal of all of this is to optimize communication and optimize safety.

Dr. Frank Lin:

There are several things at any given hearing number that you can do something about. At any hearing number, you can always protect your hearing. In general, the rule of thumb is that if you are at arm's length with somebody and you need to raise your voice to be heard, that's a situation where you probably should consider using hearing protection if you're going to be there for a long period.

If you are just walking through the subway, don't worry about it. If you're working down like in a subway all day, eight hours a day, you should probably use ear protection, because those are situations where you have to raise your voice and be heard at arm's length away. Likewise, using a lawnmower - yes, absolutely. If you're just walking by a lawnmower, probably not. But that's a good general rule of thumb. You always protect your hearing and the situation to protect your hearing. If it's too loud, or you raise your voice to be heard at arm's length, you probably should use hearing protection if you're going to be there long enough. Beyond that, any hearing level communication strategies: anytime you can be face-to-face with someone in a quiet room, turn off the background noise, and you'll communicate a lot better. If you're with a patient who's having trouble hearing at arm's length, three feet away, face-to-face, turn off the TV, turn off the sink, and you'll be able to communicate better.

Basic communication strategies anyone could benefit from beyond that you consider any hearing level basic communication technologies, right? Things like closed captioning. I use it all the time. For people who make phone calls a lot, if you are talking on a voiceover internet protocol, a voiceover IP service like Skype or FaceTime or Google or WhatsApp, anything that sounds transmitted the internet as opposed to a cell phone or a landline call, the sound quality is a whole lot better because the bandwidth is bigger. Having a phone call in general over those services, over a landline or cell phone, the call leads to a lot fewer questions and "huh" because the sound clarity is better.

If your hearing numbers are between roughly, 10 and 60, that is the range where people can begin benefiting from over-the-counter hearing aids. If you're in the 10s like me, it's probably not all the time, but situational incidental use. I use wireless earbuds that have a conversation boost feature. If I'm in a busy restaurant, I can put them on, and I hear better. That's for situational use. A company coming in this year, the parent company that makes Ray-Ban Oakley, is coming out with over-the-counter hearing glasses. They look like completely normal glasses, but whoever you look at in a restaurant is who you hear. I've tried them on. They work amazingly.

Between 10 and 60 for a hearing number, you can consider using OTC hearing aids, whether situationally, if you're hearing numbers in the 10s or low 20s. As you get to a hearing number in the 20s, 30s, or 40s, you're talking about probably using OTC hearing aids a little more consistently, maybe almost every single day. If you're hearing between roughly 20 and 90, that's the level where you consider prescription hearing aids. If you need more services or counseling, then you would see an ENT doctor or an audiologist to be professionally fitted.

If your hearing number is 60 or higher, that's the level you could begin considering a cochlear implant. The cochlear implant is a surgically implanted device that directly sends sound to the brain. If you're still struggling with hearing aids and your hearing number is usually around roughly 60, you're in the range of rates for a cochlear implant.

Dr. Frank Lin:

I think that the beauty of knowing your hearing number is that you can see how it's changing or hopefully not changing over time. If it is changing over time, consider using even more hearing protection, and, at any given level, consider various technologies or strategies to help you optimize your hearing. The amazing thing is that if you don't know your hearing number, you're in the dark about where you are and what you need. The hearing number in concert with what you're experiencing in your day-to-day situations, can completely clue you into what to do next a lot of times.

Jen Pettis:

Earlier I had the opportunity to review your terrific [article that was published last week in the New England Journal of Medicine](#). In that, you presented various evidence-based strategies and clinical recommendations to address age-related hearing loss. Can you share a few highlights?

Dr. Frank Lin:

Thanks so much, Jen. This was a piece that was published in the New England Journal back on the 25th, and it was a clinical practice piece. They asked me to write specifically about age-related hearing loss, how I would manage it, and what to do about it. It's a clinical summary piece, relatively short, 2,500 words. A lot of the pieces were built around consumers or patients knowing their hearing numbers. As a clinician, I can tell you that if you know your patient's hearing number, if they tell you, that automatically clues you in on how you need to communicate with that patient. If their hearing number is in the 10s or 20s, you can have a normal conversation. By the time you get to their hearing number in the 30s and 40s, a little higher sometimes, when you're not making face-to-face communication with that patient in a clinic room, they're probably hearing what you're saying, but they may be missing quite a bit of it.

Classically, in my clinic too, I try to turn my back when at the computer. For someone with great hearing, you can get away with doing that. If someone has a hearing number in the 30s, 40s, and 50s, and I'm turning my back then they're probably trying to fill in the gaps. As a clinician, it clues you into what a patient needs in terms of how you communicate with them just on a day-to-day basis. More importantly, I think as a clinician too, knowing the hearing number, if we do believe the fact that hearing loss is one of these other key risk factors for cognitive decline or dementia, much like high blood pressure and diabetes and low education, that's something we need to know about to guide our patients.

Much like you measure your patient's blood pressure to advise them about hypertension and avoid the possible complications of hypertension, I think hearing also needs to be included in what patients need. In terms of their hearing communication needs, especially those interventions potentially have a benefit on things immediately, like communication, but even potentially downstream effects on promoting cognitive brain health. Much of the article is built around the idea, of the hearing number, and how if patients knew it, if doctors knew it, it could allow for a patient-centered, higher level of care that can lead patients to solutions, and interventions that can improve their everyday lives and possibly lead to downstream effects on other outcomes as well. A lot of that article is written around the idea of the hearing number where patients can get it, and, as clinicians, what to look for, how change in hearing presents, what it means, and then tying that into different solutions as well.

Jen Pettis:

When you begin that article there's a vignette of a husband and wife. So many times it's one convincing the other to talk to the doctor about their hearing. That brings me to my last question. Dr. Lin, what can family members do to support their loved ones with hearing loss and convince them to wear hearing aids if appropriate?

Dr. Frank Lin:

Jen, how that vignette began is a classical presentation we're all familiar with. It's usually not so much a person whose hearing is changing, who is noticing the problem, it's all the person's family members. That's usually always how it is. That's why I think the hearing number is so important for anyone experiencing hearing changes, and let's say I'm one of them. If you ask me, I'm like, "Oh, my hearing hasn't changed" because your brain accommodates it, but that accommodation, per se, could come at a cost, in other words. I think that's why the number is so important because as an individual exhibiting a change of hearing, short of, you're getting to the point where you're in the moderate-severe range, you may not realize it's easy to attribute to others.

Oh, my wife's not speaking, it's these kids nowadays, the acoustics of this room are terrible, and all are a bit true because our hearing experience is dictated not only by our intrinsic hearing of our ear, but also by the sound quality coming in. If the sound quality comes in great then even with some hearing loss, you are not going to experience any functional difficulty, but if you have some hearing loss and the sound quality is poor, then you really struggle. Whereas if your hearing was perfect and sound quality is poor, you still get by perfectly fine. It's so easy to attribute to external causes and not realize that part of the problem, per se, is also with your intrinsic hearing. I think that's why the number is so important in that regard. It can validate what is going on with yourself that you otherwise would be oblivious to quite simply.

I think that's one of the first things that you need some objectivity about it. If your father, your father-in-law, or your spouse doesn't believe you, it's hard to argue against a cold, hard number. More importantly, with that number too, people need to understand that the hearing experience is dictated really by two things, your intrinsic hearing as well as the hearing environment (the quality of the sound). That's why someone will say, "Oh, God, Dr. Lin, I hear you great." I say, "It's not because I'm a miracle, it's just that I'm in a quiet room with you face-to-face. Whereas when you're talking to your wife, if she's in the living room, you're in the family room, and you're trying to have a conversation, the sound quality is poor." But that's something they can do something about. If you can optimize that sound quality coming in, irrespective of your hearing, you'll do a lot better. That gets to the communication strategies of being face-to-face in a quiet room and thinking about adopting hearing technologies and hearing aids, which can also further optimize that sound quality. I think understanding this is key to why people have hearing problems. It has to do with this experience itself. The intrinsic sound quality comes in as well as the person's intrinsic hearing. You must know both or be aware of them to help optimize someone's hearing.

Jen Pettis:

Dr. Lin, I know you're busy and I appreciate your time, to join me today for the podcast. Most of all, I want to thank you for the amazing work that you do to promote wellness, safety, and quality of life for older adults by addressing their hearing. Thank you also to those who are able to listen to this episode of the Momentum Discussions podcast. We hope you found it informative and enjoyable, and many thanks again, Dr. Lin.

Dr. Frank Lin:

Thanks so much, Jen.

Announcer:

The Gerontological Society of America was founded in 1945 to cultivate excellence in interdisciplinary aging research and education to advance innovations in practice and policy. For more information about GSA, visit geron.org.