

### A Layman's Introduction to the Vestibular System and its Relationship to Hearing Loss Mary Clark, HLAA Albuquerque

Most of us have experienced some level of dizziness, even as children after spinning around nonstop. The feeling of nausea can be related to how it feels when you have the flu, and we may have even seen older family members who were not very stable on their feet, and prone to falling. Have you ever experienced a wave of blurriness when moving your eyes quickly?

We're delighted to have a program for January to learn how all of these symptoms are also related to possible diagnoses that include hearing loss. We had a program a few years ago when we learned how physical therapy can help those with balance issues, often included with hearing loss.

Dr. Bogle will share with us such new terms as "balance exam". Dizziness goes way beyond that feeling after spinning around as a kid. It can be life altering when dizziness won't calm down. She will share that some treatments can help alleviate dizziness, including specific exercises.

The vestibular system is all about the inner ear. A quote from Dr. Bogle's book published by the Mayo Clinic: "Because the cochlea and vestibular labyrinth are both in the inner ear, problems with one of these structures often accompany issues with the other. For this reason, a hearing test is usually a common part of a balance exam."

Ok, so where does one go to



GET this kind of testing? What are the potential outcomes? What are the options for diagnoses, or treatments? Is this a case of finding a "cure" or just a case of finding a way to manage the symptoms?

We stand to learn some answers to some of these questions, and maybe some "aha!" moments when we find out that balance issues can be related to hearing loss, or in reverse, that hearing loss can be related to balance issues. Learning about these additional concerns can put our minds at ease. Even if we never experience the symptoms of balance issues, we can become wiser consumers as we understand more about our own hearings, as well as the more academic studies and treatments for hearing loss. It is heartening and reassuring to learn that this kind of research is going on, and that those who suffer from both hearing loss and balance issues are not alone.



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### WIRED FOR SOUND

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## 21 Jan Meeting

10:00 AM - Noon On **Zoom** 

### **Vestibular System and Hearing Loss**

Have you ever experienced dizziness, feeling off-balanced, blurred vision, or feeling as if you are floating, or the world is spinning? If so, then our January presentation is for you.

Our speaker, Jamie Bogle, AuD, PhD, will speak about the vestibular system (also known as how we maintain balance) and how it impacts dizziness. Specifi-



cally, in this short presentation, Dr. Bogle's primary focus is discussing the common causes of vestibular system disorder (dizziness & vertigo). In addition, she will discus rehabilitation and medical options available to symptoms of vestibular system disorders.

Dr. Bogle is the Division Chair of Audiology at Mayo Clinic Arizona and an Assistant Professor of Audiology at the Mayo Clinic College of Medicine and Science. She earned her Doctorate of Audiology (AuD) and PhD from the University of Colorado at Boulder. She was awarded the James and Martha Crawford Endowed Clinical Research Fellowship in Otolaryngology at Mayo Clinic Florida. Clinically, Dr. Bogle evaluates children and adults with dizziness and imbalance due to peripheral and central conditions. She is interested in improving the diagnostic tools available for evaluating patients across their lifespan to better understand inner ear function in both typical and disordered patients. Her research interests include the integration of visual and vestibular information in individuals with neurological impairments, including concussion and migraine, and the improved understanding of the importance of vestibular gravito-inertial information into overall body function.

The HLAA ABQ Chapter is always looking for volunteers. You can man a special project. You can help us out for a few months, or consider a longer-term commitment. "Try us out" for a month or two. We will provide orientation for working on a nonprofit board, share our chapter's mission and goals, and discuss topics we can use your help with. If interested, contact any board member (contact info at left), or use the chapter email <u>hlaabq@gmail.com</u>.

#### Wired For Sound

# Smartphones, Smartwatches, and Now, Smart Hearing Aids

Stephen O. Frazier, Hearing Loss Support Specialist Many of these hearing aid marvels and more are shared by the various brands.

Fifty years ago "Get Smart" was a hit TV show about a bumbling international spy. Today it's an admonition to join the millions who may already have smart cars, smart homes, smart phones, smart watches to get (yes) smart hearing aids. All of this smartness is the result of the development of two things: artificial intelligence (AI) and Bluetooth LE (low energy).

AI came first. The term itself was coined in 1956 as the name for an academic discipline that could be traced back to the 30's and 40's when experiments began to explore the concept of "thinking machines". It is the simulation of human intelligence in processes performed by machines, and especially computer systems. AI is now making decisions for some of us we may not even be conscious of with our various "smart" devices. We've all experienced it when our web browser shows us products based on searches we did earlier. It "knows" what interests us. Since they began offering the option of computer-generated captions as an alternative to those voiced or typed into a computer by a captioner, CapTel's services became another example of AI, and CapTel will tell you that their AI system is both faster and more accurate than the human-driven version.

It was in 1999 that Bluetooth® first made its appearance in consumer devices in a mobile wireless headset but it took another six years before it found its way into hearing aids. That's when the

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Starkey ELI was introduced. Other hearing help applications of Bluetooth followed but they required a wireless streamer to relay sound and sucked power out of hearing aid batteries like a hungry baby with a bottle. A decade later Bluetooth LE (low energy or BLE) was developed, and that's when development of smart hearing aids quietly began. Today some of them appear to be so smart they qualify for an advanced degree. They're labeled "smart" because of their ability to adapt to different listening situations using AI, with no intervention by the actual user.

Lack of sufficient reserve power precluded hearing aids from taking advantage of the burgeoning field of artificial intelligence before, but now, BLE-enabled hearing aids are capable of performing the extensive computations AI requires, and it allows them to connect and interact with smart mobile devices. With this change, hearing aids and the devices that can be paired with them are making sometimes dramatic changes in the lives of people with hearing loss.

With its debut in hearing aids, AI can be "taught" certain things when installed, but it can then learn from experience and make adjustments

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Once you have set it up, <u>always</u> log into <u>smile.a-mazon.com</u> to purchase from amazon. 0.5% of the purchase price is automatically donated to HLAA Albuquerque Chapter—at no cost to you.

grammed to solve complex problems with intelligent solutions. After being assigned certain tasks, AI can learn new patterns through automatic sensing and change the way it performs those tasks. In hearing aids, AI can automatically adjust volume in a user's hearing aids to amplify specific sounds in a given situation, or it can reduce or eliminate them. AI hearing aids can learn a user's habits and default manual settings and then learn to make adjustment based on that knowledge. BLE is being used by hearing care providers to wirelessly connect to and program hearing aids, and, using AI, BLE is even being used to program hearing aids to match an audiogram without the need for that human technician.

Then there are also examples of apps and technologies, often incorporating AI, that interact with smart hearing aids to perform tasks for them via a smartphone. There are multiple apps available at Apple's App Store or Google Play to provide live captions or translations or to monitor how many steps a person takes each day. There are apps like Ear Scout or Chatable that turn a smartphone into a remote mic that uses Bluetooth or a neckloop to transmit that sound to hearing aids. The Sound-Print app will locate a quiet cafe or other tranquil setting for a tired tourist seeking respite from the *freelance writer on hearing loss and noise control* day's aural over-stimulation.

have telecoils, many hearing aid brands now offer addition to others such as Sound and Communicaa remote mic that does double duty. It can pick up tions and Technologies for Worship. Many of those sound at a distant location and transmit it to hear- articles are posted and www.sofnabg.com. Steve ing aids via Bluetooth. Thanks to an embedded can be contacted at: LoopNM@gmil.com

### Update on hybrid meetings

Pandemic restrictions have been lifted in most settings, but technical issues have made it a challenge to add an in-person option to our Zoom meetings. We believe we have a solution, and the key piece of equipment we need to do hybrid right should arrive by the time you get this issue.

based on particular hearing experiences. It's pro- telecoil, it can also receive the electromagnetic signal from a hearing loop and stream that signal to the hearing aids. Some will do likewise with an FM signal.

> If well cared for, hearing aids have been known to last ten or more years, but, on average, their users replace them every five or six years. With all of the advances AI has made possible, word of mouth may tempt some users to take a look at new hearing aids even if theirs are not yet considered long in the tooth, but they'll have to balance that against the anticipated introduction of Auracast in hearing aids that's still to come. Auracast is a new Bluetooth technology that makes it possible, for the first time, for multiple wearers of compatible hearing aids to connect to a now possible assistive listening system transmitting audio via this new technology that's beginning its roll-out in consumer electronics but still in the wings for hearing This might cause them to question if it's aids. smart to get smart just yet.

Steve Frazier is the former New Mexico HLAA chapter coordinator and was a founding member of the national HLAA Get in the Hearing Loop committee. Trained by HLAA as a hearing loss support specialist, he has in recent years become a issues and has been published in many of the ma-For hearing aid wearers whose devices don't jor hearing loss and hearing care periodicals in

> We plan to have a dry run in January with just board members. We want to make sure everything works together before we invite guests. If all goes well, members who want to can meet in person again for the February meeting.

> Stay tuned! Check our web page and the February newsletter for an announcement.

> > Yearly dues are \$15 per household. They are due in January.

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### Thanks to those listed below for their generous donations.

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