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*Lithium-ion performance varies depending on

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SUMMER 2021



In This Edition

(512) 354-4482

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As a patient of Austin Auditory Specialists, we are pleased to provide the full spectrum of hearing testing, amplification and custom product sales and services at both our Central Austin and Cedar Park locations. As studies continue to support the link between hearing, mental health, cognition and vitality, the importance of professional audiological care becomes even more apparent.

What You Should Do

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Your Austin Auditory Specialists Team



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Like us on Facebook to find out what's happening at the practice and in the ever-changing world of hearing health care.



WE HOPE THIS NEWSLETTER FINDS YOU IN GOOD HEALTH!

- Trust your hearing care to an experienced audiologist.
- Get annual hearing exams to make sure your hearing devices are properly maintained and adjusted for any changes in your hearing.





THE FUTURE OF HEARING DEVICES: Deep Neural Networks & Artificial Intelligence

Hearing technology has come a long way over the years; however, one aspect of hearing loss that many hearing aids have difficulty addressing is trouble understanding speech in noise. Fortunately, some of today's state-of-the-art devices can solve this problem utilizing deep neural networks (DNN) and artificial intelligence (Al).

Sensorineural hearing loss causes difficulty understanding speech in background noise. This type of hearing loss is caused by damage to the hair cells of the inner ear that convert soundwaves into electrical energy, which are then interpreted by the brain. This causes the quality and quantity of the signal sent from the ears to the brain to diminish over time, resulting in the brain expending more energy and effort to make sense of it. DNNs may help improve the transmission of the neural code, making hearing easier on the brain.

It's important to know what DNNs are to understand how they can help. DNNs are a subset of AI. They rapidly analyze large data sets so that they can teach hearing aids and other technological devices how to respond to data like a human would, all while verifying accuracy and making corrections.

DNNs are beneficial in hearing technology because they can help with speech enhancement. DNNs can be applied as "time-frequency masks," meaning select sounds-like speech-are allowed while other sounds are suppressed. DNNs can also identify and separate multiple voices, selecting a primary voice to emphasize and secondary voices to suppress. This feature can help hearing device wearers in a variety of settings. For example, at a restaurant or party, the hearing device can emphasize a conversation partner, allow other nearby voices at a reduced volume and suppress background noises such as dishes clinking.

Audiologist Spotlight MEET KANDICE AHLBERG, AU.D., CCC-A

What prompted you to pursue a career in audiology?

I was diagnosed with hearing loss when I was 2 years old. My conductive (middle ear) hearing loss was treated with P.E. tubes; however, I suffered complications in my left ear from a hole in my eardrum that would not heal. I had countless surgeries to repair this eardrum, which all failed. Eventually, I developed more serious middle ear disease, and my hearing loss in my left ear could not be rectified. I saw audiologists throughout this journey. At the time, I HATED hearing tests and even thought to myself, "I could never be an audiologist. That is such a boring job."

When I started college, I decided to pursue early education. However, it became apparent that teaching was more work than I thought. I decided to pursue speech pathology instead. To earn my speech pathology degree, I had to take two audiology courses. My audiology professor was AMAZING, and I soon realized I loved learning everything about our auditory system. It also helped me understand why I was struggling to hear, especially in certain situations. I began to think seriously about pursuing a career in audiology and applied to both audiology and speech pathology graduate schools. When I received my acceptance letter from the audiology graduate program, I knew audiology was the field for me.

What aspects of your role do you find most rewarding?

The most rewarding aspect of my job is connecting with my patients and helping them navigate through their hearing journey. I love the relationships I make with my patients and helping them become active participants in their life.

What activities do you enjoy in your spare time?

I enjoy being with my family, whether it's having a movie night, taking our dog for a walk together or crafting things with my daughter. Our current craft project is making a house out of recycled boxes for my daughter's new little mouse stuffy. I also enjoy traveling and collecting rocks and shells from the places we visit.

DR. AHLBERG PRACTICES OUT OF THE CEDAR PARK OFFICE. Call (512) 354-4482 to schedule an appointment with Dr. Ahlberg.

NEW STUDY Reveals Hearing Aids Slow Cognitive Decline

A new study published this year in the Journal of the American • The cascade hypothesis theorizes that over time, untreated Geriatrics Society further supports existing evidence that wearing hearing aids can help slow cognitive decline in elderly patients. There are generally two schools of thought when it comes to the relationship between hearing and cognition:

- The common cause hypothesis states that hearing loss and cognitive decline both involve age-related problems, such as tissue degeneration of the central nervous system.
- hearing loss results in inadequate brain stimulation, leading to cognitive decline.

The study referenced above involved 2040 hearing aid users who self-reported symptoms over 18 years. Results showed that while episodic memory did decline with age for most users, the rate of cognitive decline was slower for patients who used hearing devices. These results were adjusted by researches to account for overall health, socioeconomic status and other demographic characteristics.

The results of this study support the cascade hypothesis; researchers state that hearing aids provide individuals with improved auditory input, which delays cognitive decline "by preventing the adverse effects of auditory deprivation or facilitating lower levels of depression symptoms, greater social engagement and higher self-efficacy."

The key takeaways of the study include the following:

- While hearing aids do not prevent cognitive decline, mounting evidence suggests that they can slow it down.

Concerned about your cognitive health or your hearing? Talk to our team today—(512) 354-4482.

Source: Maharani, A., Dawes, P. et al. (2018) Longitudinal relationship between hearing aid use and cognitive function in older Americans. Journal of the American Geriatrics Society. Published online April 26.



• Patients who wear hearing aids are less likely to be depressed and more likely to be socially engaged and self-confident in their communication abilities. Social engagement and physical activity helps stave off cognitive decline and dementia.

• Hearing aids fitted by an expert audiologist should be recommended for patients even in the early stages of hearing loss.