

Hearing Aid Services of Hollywood

maximizing your hearing potential
with today's technology

HOLLYWOOD

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Jeff's Corner

The Amazing Oticon More™

Happy 2021!

The traditional New Year's wishes for health, prosperity and happiness seem strangely out of character after the year we've just experienced. 2020 was beset with problems and created anxieties for everyone. Accordingly, we are looking forward to 2021 with a more positive focus. The arrival of the COVID vaccines is an encouraging first step, and I sincerely hope we will all return to a semblance of normal life in the New Year.

Even during these trying times, the hearing aid industry has been hard at work creating innovations. Our feature article discusses the latest product from Oticon – the **More** – which is designed to improve your hearing and quality of life in ways we could not have imagined even a few years ago. The **More** utilizes the science of Artificial Intelligence (AI) to improve acoustic fidelity and enhance the experience of the listener across environments that range from library quiet to New Year's Eve party noisy.

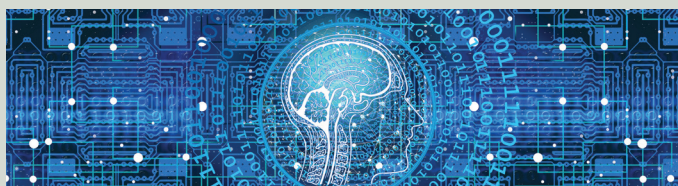
A subset of AI involves Deep Neural Network (DNN) technology which consists of machine learning algorithms that use multiple network layers to extract progressively more complex patterns from the raw data. DNN has been utilized in technologies you are probably familiar with, including facial, fingerprint and speech recognition, machine translation, drug design and medical image analysis. Oticon's engineers have now applied DNN concepts to hearing aid performance.

The computers in a **More** hearing device have 12 million pre-loaded environmental sound samples stored in their microchips. Sound entering the microphones of the hearing instruments are compared to the stored samples, progressively analyzed, prioritized and optimized to achieve a complete sound experience while preserving speech intelligibility. All of this takes place in a few billionths of a second. It's truly a groundbreaking achievement and I am excited to introduce it to you! Please refer to the adjacent article for a more complete review of the **More**.

Best to you and your families for a Happy and Healthy New Year!

Jeff

Oticon More™: Real-World Sound Perception Through Artificial Intelligence



Ideally, hearing aids should restore hearing to normal. But is this a realistic expectation? The truth is we're getting really close.

While all current hearing aids have performed well in quiet situations for many years, the challenge has been to create products that make speech understandable in environments where noise is present and conversation shifts from one person to another. Most manufacturers have developed noise reduction technology that enhances the voice of a single person speaking directly in front of the listener. This feature advances hearing aid performance, but it cannot replicate the perceptual abilities of a normal auditory system.

When a hearing instrument prioritizes the speech of a single conversational partner, it also fades surrounding conversations and ambient noises. This creates an unrealistic sound picture for the individual with hearing impairment. When the brain is not challenged by competing sound sources, it is deprived of the tasks it must execute to successfully maintain its ability to attend and perform well in all listening environments.

As the brain "listens," it learns to continually adjust and readjust focus on the available sound sources according to the demands of the environment for communication or auditory awareness. Hearing professionals refer to this principle as "sound scene" or "soundscape." It describes the way the brain naturally processes and sorts through all the sounds we experience simultaneously.

Patients are constantly presented with sound scenes that are dynamic, complex and unpredictable. It is the brain's role to handle this complexity and to help create meaning from it all. Oticon has just introduced the **More** – an utterly new perspective in hearing care – that performs more like how the brain works, giving patients more information from the sound scene in a holistic and balanced way.

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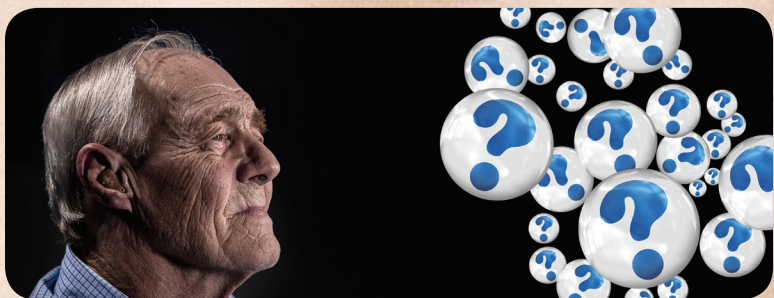
Scientists Develop New Gene Therapy for Deafness



A new study from Tel Aviv University presents an innovative treatment for deafness that involves delivery of genetic material into the cells of the inner ear. The research focused on genetic deafness caused by a mutation in the gene SYNE4. This rare condition, found in children who inherit the gene from both parents, produces a gradual deterioration of hearing during childhood. The experiment was conducted using a mouse model replicating the genetic condition observed in human families. The scientists used a harmless synthetic virus to deliver a normal version of the gene into each mouse subject's inner ear. Once injected, the virus released its genetic payload, repaired the defect in the hair cells, and enabled the cells to continue functioning normally. Treated mice developed normal hearing, with sensitivity almost identical to healthy mice without the mutation. The study illustrates the enormous potential of gene therapy as a treatment for hereditary hearing loss.

EMBO Molecular Medicine, 2020; DOI: 10.15252/emmm.202013259

Can Hearing Aids Delay Diagnosis of Dementia, Depression, or Falls in Older Adults?



Researchers examined insurance claim data from a large private payer between 2008 and 2016 to examine associations between hearing aid use and a later diagnosis of Alzheimer disease or dementia, depression or anxiety, and injurious falls. Participants included 114,000+ patients, aged 66 years or older, diagnosed with hearing loss. Results indicated that patients who used hearing aids experienced a reduced risk of physical and mental decline within three years of hearing loss diagnosis. Further study is needed to determine whether the observed relationship between these factors is causal.

J Am Geriatr Soc 67:2362-2369, 2019

The Nuts and Bolts of Total Soundscape

The Oticon *More* is the first hearing aid to utilize Deep Neural Network (DNN) processing to support your brain's ability to encode all sounds naturally while ensuring that sounds remain audible and comfortably loud. You have probably used DNN without knowing it. For example, when you set up voice recognition in your phone, you had to repeat a series of phrases several times to "train" the device. Thereafter, the phone recognized your voice instantly. That was DNN at work.

A normal hearing brain allocates importance to all sounds in the environment, giving priority to speech while mentally filtering out ambient sounds. The DNN has been "trained" to process the soundscape by comparing incoming real-life sounds with 12 million sound scenes stored in the microchip. The sensors recognize these sounds as potential speech interference. Then, the DNN determines how they should ideally sound and adjusts them within a few billionths of a second. By continuously and automatically providing you with the optimal sound you need in any given situation, the *More* creates a complete acoustic picture of your environment. *More* is designed to give patients better speech understanding with less listening effort and improved memory of what was heard.

Enjoy Next Generation Connectivity

Oticon *More* offers other features that work with modern technologies to benefit you in your everyday life:

- Made for iPhone and compatible with the latest Android devices, you can stream music, phone calls and other audio directly to your hearing aids from all modern smartphones without a separate accessory.
- Take control of your hearing aids on your smartphone via the Oticon ON app to adjust volume, check battery life and find your hearing aids if you misplace them.
- Connect with your hearing care professional remotely via your phone for convenient online hearing aid adjustments with the Oticon RemoteCare smartphone app.
- No battery changes. With rechargeable batteries you can plug in your hearing aids in the evening and the devices will be fully charged for the next day after just three hours.
- With Oticon's handy accessories you can stream sound directly from your TV and other Bluetooth-compatible devices.

To discover how Oticon *More* hearing aids can benefit you, give me a call at (323) 463-7109.