

SPRING  
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# Sound BYTES

INFORMATION FOR YOUR EARS

## What are the advancements in hearing aids?

Many hearing aids now utilize artificial intelligence (AI) and machine learning to enhance the listening experience. Think of it as a smart hearing aid that can do more automatically with less user adjustments.



## What Does Artificial Intelligence mean?

Artificial Intelligence is defined as the ability of a machine to simulate human intelligence. Using a predetermined set of rules (algorithms) the computer chip can analyze patterns to make intelligent decisions. AI has many applications that have been used for Tesla's autopilot, weather prediction, detecting credit card fraud, face recognition, and Siri/Alexa.

Artificial  
Intelligence  
Machine  
Learning

## How can AI help with hearing?

The world is filled with millions of sounds. Take a simple situation such as a person walking outside: The person may hear children playing in the distance, birds chirping and so on. The brain can take in all this information and decipher what to focus on and what is unimportant. By accurately identifying speech versus noise, the hearing aid offers a cleaner speech signal reducing listening effort, even in a noisy environment.

## Is AI needed for all patients?

Artificial intelligence can improve outcomes for all. It is especially advantageous for those who struggle hearing in background noise, have poor auditory clarity, or those in a variety of listening environments. In addition, AI can be helpful for patients who want their devices to perform automatically and effortlessly.



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## Sensor Technology in AI devices can provide additional benefits such as:



We all know the importance of staying active for our overall health, and thus products like Fitbit have become popular. With fitness tracking through smartphone apps and built-in sensors, hearing aids can now replace the need for wearing an accessory around your wrist.



Our world has changed this past year and wearing a mask has become part of our daily lives. Unfortunately, wearing masks reduces speech intelligibility by muffling the speech as well as taking away vital lipreading cues. Mask mode can make an automatic adjustment to volume proportional to the volume lost from the mask, improving speech understanding.



Equally important to our overall health and well-being is social engagement. Studies have shown that loneliness can have just as negative an effect on our health as smoking. The hearing aid tracks social engagement and encourages you to do so.



Research has shown that individuals with hearing loss are at least three times more likely to experience a fall. A fall can have a devastating impact on a person's health. The sensors in the hearing aids will detect the fall and send a text to a loved one alerting them that help may be needed.



The hearing aid wearer can ask a question to his/her smart device and the answer will be heard through the hearing aids.



Reminders are helpful and sometimes crucial when it comes to medication adherence. A reminder can be set in the hearing aid application and when the time comes, the reminder will be heard through the hearing aids.

Artificial intelligence in hearing aids opens the door for a variety of options to improve the listening experience for the hearing aid wearer. We are excited to see where the future of AI takes us and are hopeful it will lead to better products for individuals who struggle with hearing loss.

Burry, M., 2021. *Hearing aids with artificial intelligence*. [online] Healthy Hearing. Available at: <<https://www.healthyhearing.com/report/53168-Hearing-aids-artificial-intelligence-deep-learning-oticon>> [Accessed 24 March 2021].