POWERED BY EyeMed

# Seeing and hearing as we age

## Exploring the connection between the senses

WP-2412-C-926

INTRODUCTION

# The connection between seeing and hearing as we age

Every day we rely on our eyes and ears to understand the world around us and ensure we never miss a moment. We focus on the road while driving, listening for horns, sirens and other sounds to alert us of potential hazards we might not be able to see.

**When talking to friends, we listen carefully to what they're saying while studying their facial expressions and body language. At dinnertime, we read our favorite recipe in the kitchen while listening to the sizzle of the stove behind us.**

Our sense of sight and hearing are deeply connected. So when our ability to see and hear decline, so can our quality of life.

# Vision and hearing change over time

As we get older, many adults will notice slight changes in their vision. They might have problems seeing clearly at close distances or reading on the computer. It's a gradual condition called presbyopia that usually starts around age 40.[1]

But vision isn't the only thing that changes as we age. Age-related hearing loss, or presbycusis often goes hand-in-hand with vision changes. Because hearing loss is more gradual, many aging adults don't realize that they've lost some of their hearing abilities until it becomes more severe.

**Presbycusis is the most common cause of hearing loss worldwide[3]**

[1]"Presbyopia"; Cleveland Clinic; clevelandclinic.org; July, 6, 2023. [2]"Age-Related Hearing Loss"; National Institute on Deafness and Other Communication Disorders; nidcd.nih.gov; March 17, 2023.
[3]"Presbycusis (Age-Related Hearing Loss)"; Cleveland Clinic; my.clevelandclinic.org; February 15, 2024.

**Approximately 15% of American adults**

report some trouble hearing[2]

# The cocktail party effect

For those with age-related hearing loss, difficulty hearing may start showing up in certain noisy environments like a bar, concert or restaurant

**This is a phenomenon called the cocktail party effect: the ability to focus one's attention to a particular sound while simultaneously filtering out others.** While listeners with normal hearing are able to do this, those with hearing issues may have more difficulty filtering out background noise and focusing on a particular person talking.[4] In fact, a recent survey showed that seven in ten adults struggle to hear conversations in noisy environments.[5]

## 7 in 10 adults

struggle to hear conversations in noisy environments[5]

NEARLY

## 90%

or an estimated 128 million American adults over age 45 are impacted by presbyopia[6]

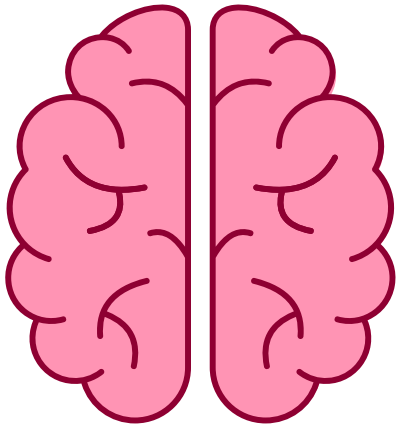
[4]"Most Adult Britons Struggle to Hear in Noisy Environments"; The Hearing Review; hearingreview.com; June 3, 2024. [5]"Struggle to hear at the pub? Why 'cocktail party effect' is ruining your night"; i news; inews.co.uk; May 31, 2024. [6]"For 128 million U.S. presbyopes, doctors of optometry can provide treatment options"; American Optometric Association; aoa.org; August 24, 2023. [7]"Eyes"; Cleveland Clinic; my.clevelandclinic.org; Last reviewed November 15, 2023.

## Hearing, vision and the brain

Our brains are crucial in processing and understanding the world around us, but they don't work alone. They rely on our eyes, ears and other senses to quickly process information about our environment.[7]

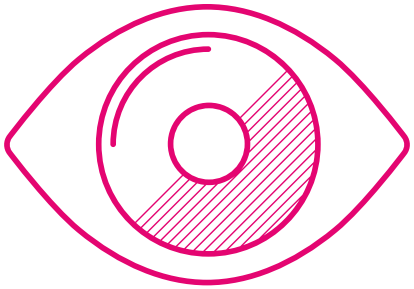
# Processing sights and sounds[8]

Our sensory systems use signals coming from inside and outside our bodies. Our brain then processes these signals in real time.



**SIGHT**
Light-sensing cells in the back of our eyes send electrical signals to the brain through the optic nerve

**HEARING**
Soundwaves make their way towards the inner ear, triggering an electrical signal that moves from the auditory nerve to the brain



# Our senses don't work in isolation

Mechanisms inside the inner ear are linked directly to the eyes via muscles and nerves.[9] They work together to create signals for the brain to process.

Recently, Duke University neuroscientists were able to determine where someone's eyes were looking by listening to subtle, imperceptible frequencies from that person's ears. This shows increasing evidence that hearing, vision and the brain are even more closely linked together than we realized.[10]

As we age, all our senses lose their sharpness, meaning it takes more stimulation for information to be converted into nerve signals telling your brain that something is happening. As you navigate the world around you, it can become harder to notice key details.[11]

[8]"Senses help the brain interpret our world – and our own bodies"; ScienceNewsExplores; snexplores.org; November 15, 2023. [9]"Vision and Hearing Health: Vital to Military Readiness"; Military Health System; health.mil; June 1, 2024. [10]"Is Hearing Affected by Vision?"; The Hearing Review; hearingreview.com; December 5, 2023. [11]"Aging changes in the senses"; MedlinePlus; medlineplus.gov; Last reviewed July 21, 2022.

# Vision and hearing problems can impact lifestyle

Staying social and physically active is critical for not only our mental health but keeping our brains sharp

Those with vision and hearing issues begin to isolate themselves from social activities for fear of communication issues, misunderstanding and embarrassment. If they remain untreated, those with dual hearing and vision loss are at a higher risk of developing some form of dementia.[12]

## Challenges with hearing aids

For those with hearing loss, a hearing assistance device (HAD) can help, such as hearing aids.[12] But aging adults often avoid wearing hearing aids for a variety of reasons. They may not be aware of how severe their condition is and not realize they need hearing aids. They may find that wearing hearing aids is uncomfortable or find them difficult to use.[13] Or they might avoid wearing them due to a stigma called the hearing aid effect: a fear of being perceived as less capable, having a disability and needing assistance.[14] **In fact, in a recent survey of 500 U.S. adults, 48% of them believe there is still a stigma associated with wearing a hearing aid.**[15]

**Only 1/3**

of older U.S. adults with hearing loss use a hearing assistive device[13]

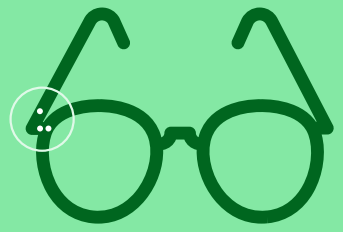
[12]"Take care of your senses: The science behind sensory loss and dementia risk"; National Institute on Aging; nia.nih.gov; January 10, 2023. [13]"Factors Impacting the Use or Rejection of Hearing Aids – A Systematic Review and Meta-Analysis"; National Libray of Medicine; ncbi.nlm.nih.gov; June 12, 2023. [14]"The Hearing Aid Effect in the 2020s: Where Do We Stand?" National Library of Medicine; ncbi.nlm.nih.gov; April 29, 2023. [15]"Forbes Health Survey: Nearly Half of People With Hearing Loss Believe There Is A Hearing Aid Stigma"; Forbes; forbes.com; April 16, 2024.

# An exciting innovation is here to help

**Building on over 60 years of eyewear excellence, EssilorLuxottica developed a dynamic solution that addresses vision and hearing challenges together.**

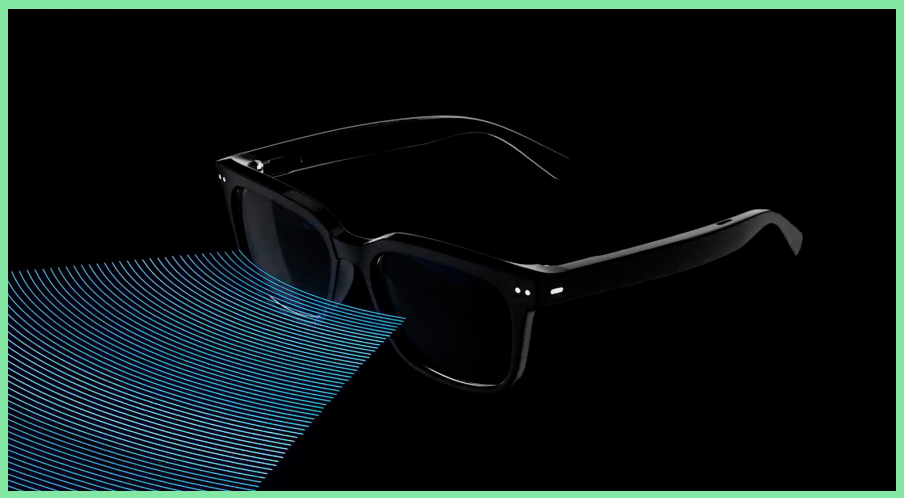
On the surface, Nuance Audio might just look like a sleek, modern pair of glasses. But these innovative frames are embedded with high-quality microphones and micro-speakers.

These microphones automatically tune into sounds coming from the direction the wearer is looking while reducing background noise. Audio is then transferred to the microspeakers and delivered directly to the wearer's ears.[16]

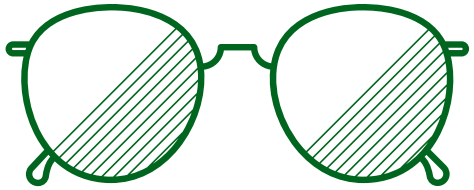


**"We set out to create a single device that corrects both vision and hearing challenges in an invisible way."**

*– Andrea Pastro, Super Audio Portfolio and Channels Director*



[16]"These glasses double as assistive listening devices that amplify hearing"; All About Vision; allaboutvision.com; April 10, 2024.



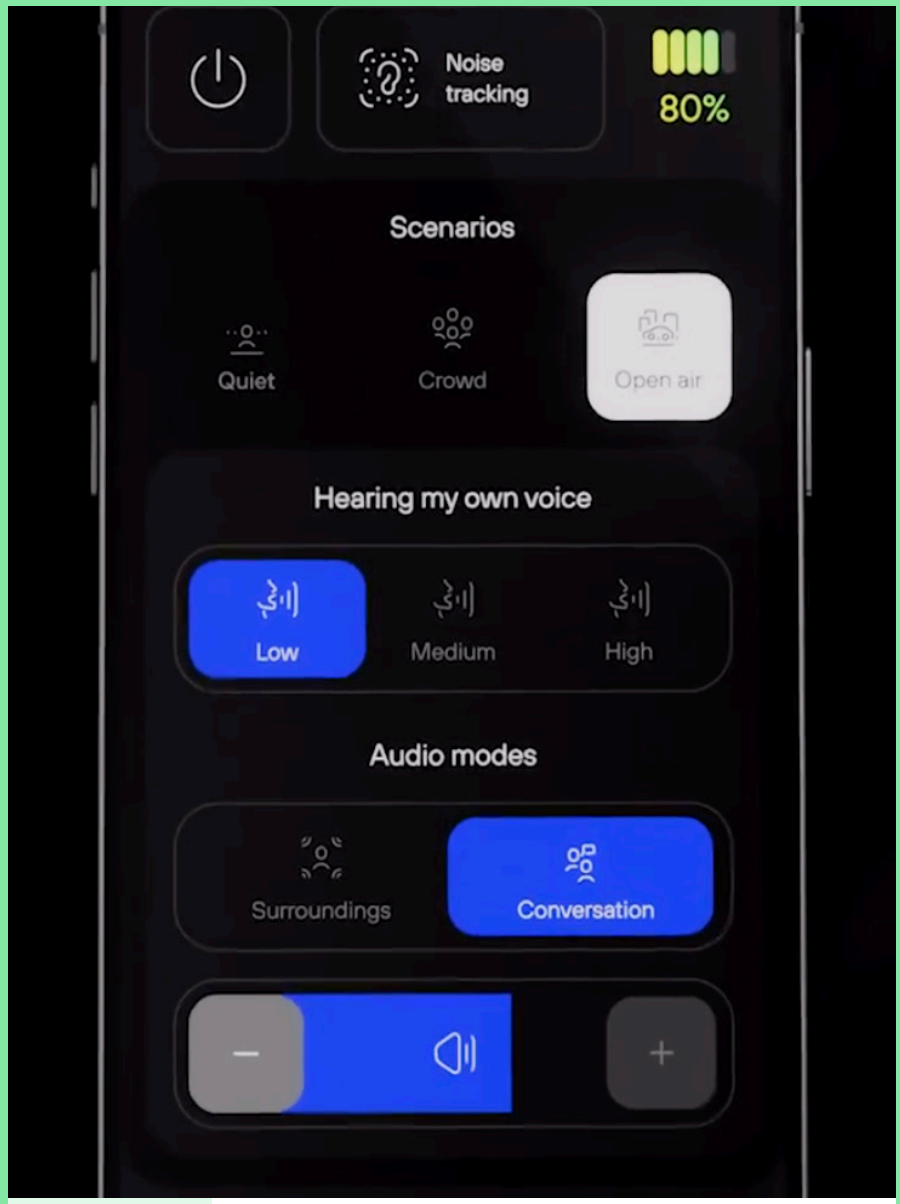
# What you see is what you hear

A dynamic and seamless solution for those with mild to moderate hearing loss

- Beamforming technology allows users to tune into conversations while reducing background noise
- Flexible settings allow users to adjust their listening experience based on their environment with the Nuance Audio app
- Exceptionally low latency response, lets users listen with no delays or interruptions

**See and hear life to the fullest**

Nuance Audio may be covered by EyeMed vision benefits




For more information on Nuance Audio, contact your EyeMed representative or visit nuanceaudio.com