CONDITION

Age-related hearing loss

Learn how age-related hearing loss affects communication, how hearing is tested, and how hearing aids and other strategies may help.

WHAT IT IS
Gradual age-related decline in hearing

BODY SYSTEM
Ears and nervous system

MAIN SYMPTOMS
Difficulty understanding speech, trouble hearing in noise, needing repetition, tinnitus

WHAT CAUSES IT
Age-related inner-ear and nerve changes

HOW IT IS DIAGNOSED
Pure-tone audiometry and speech testing

MAIN TREATMENT
Hearing aids and hearing rehabilitation

CAN IT BE CURED?
No, inner-ear damage is usually permanent

IS IT AN EMERGENCY?
Sometimes, with stroke signs or head injury

LONG-TERM OUTLOOK
Usually permanent but often manageable

Overview

Age-related hearing loss is a gradual decline in hearing that develops as people grow older. The medical term is presbycusis . It usually affects both ears and often begins with difficulty hearing higher-pitched sounds, including parts of speech.

A person may hear someone speaking but struggle to understand the words, especially in a restaurant, meeting, or other place with background noise. Because the change is usually slow, family members or friends may notice it before the person does.

Hearing loss is not simply an inconvenience. It can make conversations tiring, affect work and relationships, and reduce awareness of alarms, traffic, or other warning sounds. Untreated hearing difficulty may contribute to loneliness and reduced independence. Studies also show an association between hearing loss and problems such as falls and cognitive decline, although

an association does not prove that hearing loss directly causes these conditions.

Age-related hearing loss is usually permanent, but it can often be managed. Hearing aids, communication techniques, assistive devices, and hearing rehabilitation can improve access to sound and make conversations easier. An evaluation is important because earwax, infection, medication effects, and other conditions can also affect hearing.

Symptoms

Age-related hearing loss generally develops over years. It commonly affects the ears in a similar way, although one ear may be somewhat worse.

Possible signs include:

Some people also have tinnitus , which means hearing ringing, buzzing, humming, or another sound that does not come from an outside source. Tinnitus may occur with hearing loss, but it can have other causes.

Hearing loss that develops suddenly is not typical age-related hearing loss. A sudden loss over hours or a few days-especially in one ear-needs urgent, same-day medical assessment. Sudden inner-ear hearing loss may feel like pressure or a blocked ear, so it should not automatically be assumed to be earwax.

Seek emergency care for new hearing loss accompanied by signs of a possible stroke or serious injury, such as facial drooping, weakness on one side, difficulty speaking, severe imbalance, loss of consciousness, or a significant head injury.

- Difficulty understanding speech, particularly when several people are talking
- Trouble hearing in restaurants, cars, or other noisy settings
- Frequently asking people to repeat themselves
- Turning up the television, radio, or phone volume
- Thinking that other people are mumbling
- Difficulty hearing higher-pitched voices or sounds
- Missing doorbells, alarms, phone alerts, or birdsong
- Feeling tired or frustrated after conversations
- Avoiding social events because listening is difficult

Causes and risk factors

Hearing depends on several parts of the ear and nervous system working together. Sound waves travel through the outer and middle ear to the cochlea , a small, spiral-shaped structure in the inner ear. The cochlea contains sensory hair cells that turn sound vibrations into electrical signals. The hearing nerve carries these signals to the brain.

With age, hair cells and other structures involved in hearing can become damaged or function less effectively. These sensory hair cells do not normally grow back. Changes in the hearing nerve and in how the brain processes sound may also contribute.

Age-related hearing loss usually has more than one cause. Factors that may influence its development or severity include:

Medicines that may affect hearing are called ototoxic medicines . Certain cancer treatments, some antibiotics like amoxicillin or doxycycline , and a number of other medicines can have this effect. Risk depends on the specific drug, dose, length of treatment, and a person's health. Do not stop a prescribed medicine because of hearing concerns without speaking with the prescriber. A clinician can review the risks and decide whether monitoring or an alternative is appropriate.

Noise exposure can add to changes related to aging. Firearms, power tools, loud music, machinery, and repeated use of headphones at high volume can damage inner-ear structures. Protecting hearing remains useful at any age.

- A family history of hearing loss
- Repeated exposure to loud noise at work or during recreation
- A history of smoking
- Cardiovascular and metabolic conditions that can affect blood flow
- Previous ear disease or injury
- Use of medicines that can damage hearing

Diagnosis

A hearing evaluation begins with questions about when the problem started, whether one or both ears are affected, and how hearing difficulty affects daily life. The clinician may ask about tinnitus, dizziness, ear pain, drainage, noise exposure, family history, previous ear surgery, and current medicines.

The ears are examined with an otoscope , a lighted instrument used to view the ear canal and

eardrum. This can identify earwax, inflammation, a damaged eardrum, or another visible cause.

Formal testing is usually performed by an audiologist, a health professional trained to evaluate and manage hearing and balance problems. Testing may include:

A hearing test produces an audiogram , a chart showing the quietest sounds a person can hear at different pitches. Results help classify the type and degree of hearing loss.

Age-related hearing loss is usually sensorineural , meaning that it involves the inner ear, hearing nerve, or both. Conductive hearing loss occurs when sound is blocked from passing efficiently through the outer or middle ear, as may happen with earwax or middle-ear fluid. Some people have a combination called mixed hearing loss.

Further medical assessment may be recommended when hearing loss is sudden, mainly affects one ear, is clearly different between the ears, or occurs with persistent ear drainage, significant dizziness, facial weakness, or one-sided or pulse-like tinnitus. These patterns do not necessarily mean that a serious condition is present, but they may require additional testing.

- Pure-tone audiometry: Listening for tones at different pitches and volumes, usually through headphones
- Speech testing: Measuring how softly words can be heard and how clearly they can be understood
- Tympanometry: Checking how the eardrum and middle ear respond to changes in air pressure
- Bone-conduction testing: Helping determine whether hearing loss comes from the outer or middle ear, the inner ear, or both

Treatment and management

Age-related sensorineural hearing loss cannot usually be reversed with medicine or surgery. Treatment focuses on improving access to speech and other important sounds, reducing communication strain, and addressing any additional treatable problem.

Hearing aids are the main treatment for many people. These small electronic devices use microphones to collect sound, process it, and deliver an amplified signal to the ear. Modern hearing aids can be adjusted for a person's hearing pattern and may include rechargeable batteries, directional microphones, or connections to phones and televisions.

In the United States, adults age 18 or older with perceived mild to moderate hearing loss may buy over-the-counter hearing aids without an examination or prescription. These products are not suitable for every hearing problem. Professional assessment can be especially helpful

when symptoms are complex, hearing difficulty is substantial, or a person needs help choosing, fitting, and adjusting a device.

Hearing aids do not restore normal hearing. The brain may need time to adapt to sounds that have not been heard clearly for years. Follow-up adjustments, regular use, and realistic expectations can improve the experience.

Other management options include:

A cochlear implant is an electronic device that bypasses damaged inner-ear structures and directly stimulates the hearing nerve. Evaluation involves a specialist team and detailed hearing tests. It does not provide normal hearing, but it may improve speech understanding for suitable candidates.

Simple communication changes can also help. Ask people to face you, speak clearly at a natural pace, and reduce background noise when possible. Good lighting makes facial expressions and lip movements easier to see. Moving closer to the speaker is usually more helpful than asking the person to shout.

Treatable conditions should be managed separately. A clinician may remove blocking earwax or treat an infection when present. Avoid inserting cotton swabs, hairpins, or other objects into the ear canal, because they can push wax deeper or injure the ear.

Continue protecting your hearing. Use well-fitted earplugs or earmuffs around loud equipment, firearms, or amplified music. Lower headphone volume and take listening breaks. Hearing protection should reduce harmful noise while still allowing safe communication and awareness of the surroundings.

- Communication training and hearing rehabilitation
- Remote microphones that send a speaker's voice directly to a hearing device
- Amplified or captioned telephones
- Television listening systems and closed captions
- Visual or vibrating alarms for doorbells, smoke detectors, and other alerts
- Cochlear implants for some people with severe hearing loss who receive limited benefit from hearing aids

Complications

Hearing difficulty can affect much more than the ability to detect sound. Following a conversation may require intense concentration, leading to mental fatigue, frustration, or

misunderstandings. Some people withdraw from group activities because communication becomes stressful.

Reduced access to speech may contribute to social isolation, depressed mood, and loss of confidence. Hearing loss can also interfere with medical visits if instructions or medication information are misunderstood. Telling healthcare staff about hearing needs and asking for written information can help.

Hearing loss has been associated with falls, reduced independence, and cognitive decline. Researchers are continuing to study how these conditions are connected and whether hearing treatment changes long-term risk. Hearing devices and communication support may improve daily function even when they do not address every associated health concern.

Safety can also be affected if a person cannot hear smoke alarms, approaching vehicles, or warning signals. Visual, vibrating, or amplified alert systems may reduce this risk.

Follow up

Arrange a routine appointment if hearing difficulty is affecting conversations, television listening, work, safety, or social activities. A primary care clinician, audiologist, or ear, nose, and throat specialist can help determine the appropriate evaluation.

People who use hearing aids usually need follow-up for fitting, comfort, sound quality, and maintenance. Hearing can change over time, so repeat testing may be useful when symptoms worsen or devices no longer provide enough benefit. Earwax and device problems should also be checked because either can reduce hearing-aid performance.

Contact a clinician promptly for new one-sided hearing loss, increasing asymmetry between the ears, persistent ear pain or drainage, significant dizziness, or tinnitus that pulses with the heartbeat.

Seek urgent same-day assessment for hearing that suddenly decreases over hours or within a few days. Seek emergency care when hearing loss occurs with stroke-like symptoms, severe neurologic symptoms, or significant head trauma.

Sources

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