

Could You Be Having Hearing Issues?



Around 45 million Americans have some degree of hearing loss. While seniors are the group most at risk (half of people over 75 have some hearing loss), hearing loss can happen to anyone, at any age.

Common reasons for hearing loss include genetics, exposure to loud noise, viruses and infections, as well as blockages and obstructions in the ear from fluid, earwax, or foreign objects. Many forms of hearing loss are preventable but irreversible, so it's important to take steps to protect your hearing. Read on to learn more about how the ear works, and how common problems can affect your hearing.

How the Ear Works

In order to understand how many ear problems develop, it's helpful to know a little bit about how the ear works. The ear is made up of three parts: the outer, middle and inner ear.

The Outer Ear

The outer ear consists of the ear canal and the pinna (also called the auricle), which is the portion of the ear outside your body. The outer ear captures sound waves and funnels them through the ear canal to the middle ear.

The Middle Ear

The middle ear, an air-filled cavity, has the important job of transforming sound waves into vibrations. Between the outer ear and the middle ear lies the eardrum (tympanic membrane), which stretches tight across the ear canal. When soundwaves come into the ear canal, they hit the eardrum, causing it to move. When the eardrum moves, it sends vibrations into three tiny bones in the middle ear. These bones, the malleus, incus, and stapes (the smallest bone in the body), are collectively called the ossicles. The ossicles transmit vibrations to the inner ear.

In order for the middle ear to work properly, the air pressure on both sides of the body needs to be equal. The Eustachian tubes, which connect the ear to the back of the throat, help to balance pressure on both sides of the body. When you have a bad cold, the Eustachian tubes have a hard time draining fluid and balancing pressure, which is why your hearing can be muffled when you are sick.

The Inner Ear

In the inner ear, the vibrations from the middle ear are transformed into nerve signals that are sent to the brain for processing. The cochlea, a snail-shaped, fluid-filled part of the inner ear, is where vibrations are changed into nerve signals. The nerve signals then travel to the brain along the cochlear nerve.

Just above the cochlea, like antennae on a snail, are the semicircular canals. These three fluid-filled tubes control balance. Each canal is lined with tiny hairs. As you move, the fluid in the tubes splashes around, moving the tiny hairs. This provides information on the position of the body. The hairs send that data to the brain via the vestibular nerve. The brain then sends signals to our muscles, helping us to stay balanced.

If you are prone to motion sickness, you have the semicircular canals to thank. When they sense a lot of movement, but the eyes say we're staying still (as on an airplane), the brain gets confused, resulting in nausea.

Hearing Loss

Hearing loss is classified into three types, depending on where in the ear the problem originates.

- Conductive hearing loss involves the outer or middle ear. In conductive hearing loss, something is preventing the sound waves from reaching the inner ear. The most common causes of conductive hearing loss are blockages from fluid, earwax or foreign objects in the ear, and ear infections.
- Sensorineural hearing loss involves the inner ear. Sensorineural hearing loss is most commonly caused by genetics, viruses and infections, exposure to loud noises, and as a side effect of some medications and other chemicals.
- Mixed hearing loss occurs when there is both conductive hearing loss and sensorineural hearing loss. Mixed hearing loss can happen as the result of a head injury, infections, or due to genetic disorders.

While some types of conductive hearing loss can be reversed, many forms of sensorineural hearing loss can't be improved. However, if your hearing loss can't be reversed, doctors and audiologists have many tools to help you manage hearing loss, including hearing aids, surgery, and training on how to minimize the impact of hearing loss on your life.

Protecting Your Ears from Hearing Loss

While you can't do anything about your genetics, you can protect your ears from some kinds of hearing loss. Even if you already have some amount of hearing loss, protecting your ears will help prevent future damage, and keep your hearing as healthy as possible.

Here are a few steps you can take to help keep your ears healthy:

1. Don't stick Q-tips or any other object in your ears. Your ears are self-cleaning and don't require additional help. On occasion, earwax can build up and become uncomfortable or block hearing. If this happens, it's best to see a doctor to remove it.
2. Keep your vaccines up to date. A number of common viruses, including measles and rubella, can cause hearing loss. Keeping your vaccines up to date helps protect you from these serious illnesses.
3. Protect your ears against loud sounds. Noise exposure is the biggest cause of hearing loss that you can control. Any time you have to raise your voice to be heard, the sound level is loud enough to damage your ears over time. Keep the volume low on your TV, music, and games, and wear ear protection in noisy environments. Most people know that factories, airports and construction sites may require hearing protection, but not as many people realize that bars, restaurants and subway stations can be just as loud. For example:

- 70 dB can damage hearing over 24 hours. Examples include vacuum cleaners (60-85 dB), freeway traffic (70 dB), and dishwashers (55-70 dB).
- 85 dB can damage hearing over 8 hours. Examples include lawn mowers (65-95 dB), noisy restaurants (85+ dB), and subway stations (90-115 dB).
- 115 dB can damage hearing in just 28 seconds. Examples include chain saws (120 dB), a symphony orchestra (110dB), rock concerts (120 dB), and gunshots (150+ dB).

If you have any questions about how to best protect your hearing on the job or while enjoying your hobbies, visit an audiologist. Audiologists can fit you with specialty ear protection that helps you hear the sounds you need to, while protecting you from dangerous sound levels.

Signs You're Having Hearing Trouble

Many forms of hearing loss develop gradually, and it can take years for someone to realize that there is a problem. Signs of hearing loss include:

- Muffled hearing (as if you were wearing earplugs)
- Difficulty following conversations in noisy areas, such as a busy restaurant
- Trouble distinguishing between similar consonants, such as p and b
- Feeling like everyone you know has started mumbling
- Frequently asking others to repeat themselves, or to speak up
- Missing important details in conversations
- Avoiding social engagements because holding a conversation is too taxing
- Turning up the television more than is comfortable for others in the room

If you notice any of these symptoms, it's time to visit the doctor.

In addition to these symptoms of hearing loss, any signs of ear infections or other ear problems also need to be checked out. There are many conditions which can cause pain or irritation in the ear canal that can be easily treated, but which can result in hearing loss if left untreated. Symptoms that should be checked by a doctor include:

- Muffled hearing
- Earache, which can involve either sharp or dull pain
- A feeling of fullness or stuffiness in the ear
- Nausea
- Drainage from the ear canal
- A sharp pain followed by a feeling of fluid draining from the ear
- Tinnitus
- Dizziness or vertigo

Tinnitus is a particularly important symptom of ear problems. In tinnitus, patients hear ringing, buzzing, whistling, or roaring in the ears. This sound can be constant or intermittent. Tinnitus can be caused by a number of illnesses, including ear infections, high blood pressure, impacted

earwax, and Meniere's disease. If you are experiencing tinnitus, it's important to visit your doctor to find out why.

Symptoms of Ear Problems in Children

While it's important for adults to be aware of any changes in their own hearing or ears, if you have children, it's also important to pay attention to their ear health. When children have an ear infection, they are not always able to communicate what is wrong. When children have an ear infection, they might:

- Tug or rub their ear
- Cry when they are lying down
- Have drainage from the ear
- Be feverish
- Be irritable or restless
- Have poor balance

Children are more likely than adults to have ear infections and/or a build-up of fluid in the ear called otitis media. This is because the Eustachian tube isn't full size yet, and so it's more difficult for fluids to drain from a child's ear than from an adult's. If ear infections or otitis media are left untreated, children can fall behind in learning language because they can't hear well. If your child shows any signs of difficulty hearing or ear discomfort, it's time to visit the doctor.

How Hearing Is Assessed by the Doctor

If you have concerns about your hearing, your doctor will perform a variety of tests. They will start with a physical exam. For this, they will use a tool called an otoscope to examine your ears. They will look for problems such as too much ear wax, signs of infection, or any structural problems with the outer ear.

Next, your doctor will screen your hearing. They will play a number of sounds and ask if you can hear them. The doctor may use a program on a computer or tablet to play the sounds, or they may use a tuning fork, which is a fork-like instrument that rings out in a specific tone when it's struck. You may be asked to cover one ear at a time to test the hearing in each ear.

The simple screening tests that your doctor can perform in office are usually pass/fail. If you pass, your hearing is within normal levels. If you fail, you will require more testing to see what the problem is. Your doctor will refer you to an audiologist or an Ear, Nose and Throat specialist who will conduct further screening.

If you are interested in screening your hearing at home, try the [National Hearing Test](#). This test, developed through funding by the National Institutes of Health, is available through the phone. It's free for members of the [AARP](#) or just \$8 for anyone else. The test can tell you if your hearing falls within the normal range. However, even if your hearing is normal according to this test, visit your doctor if you have any concerns about your hearing or ear health.

Visiting an Audiologist

If you require more hearing tests than your family doctor can provide, you will need to visit an audiologist. An audiologist can diagnose and help treat hearing and balance problems.

To test your hearing, an audiologist will perform a variety of tests. Many of these tests require sitting in a sound-proof room while various tones are played. The audiologist will be testing to see which tones you can hear and which you can't hear. To test your ability to understand speech, you may have to talk to the audiologist over a microphone, while listening to various levels of background noise.

If you are also having balance issues, an audiologist can perform a number of tests to understand what is going on.

Once an audiologist has tested your hearing and your balance (if necessary), they can tell you more about what's going on with your ears and describe what treatment options are available. Audiologists can fit you for hearing protection, help you find the best hearing aid or other assistive device, and teach you ways to cope with hearing loss.

Visiting an Ear, Nose and Throat (ENT) Specialist

In some cases, you may need to visit an ENT. ENTs specialize in diseases of the ear, nose and throat, and can help diagnose and treat any medical issues you might have in these areas. Problems that ENTs treat include infections, tumors, injury or trauma to the ear, and some inner ear problems. ENTs do not treat hearing problems and will refer you to an audiologist if they detect a hearing problem. The tests that an ENT will perform will depend on your symptoms.

Common Issues That Cause Temporary Hearing Loss

While you can't reverse hearing loss due to genetics or exposure to loud sounds, there are many common issues that can cause temporary hearing loss. These include:

Earwax

While earwax usually flows out of the ear on its own, sometimes it can become stuck in the ear canal. This is often because of advanced age, narrow or unusually shaped ear canals, or using Q-tips or other instruments to clean the ears, which can push the wax deeper into the ear. If earwax is causing a problem, your doctor can safely remove it.

Infections

Infections can cause swelling or fluid build-up in the ear canal which can block sound waves, leading to muffled hearing. Receiving proper treatment for the infection will usually restore hearing.

Glue Ear

Glue ear, which is formally known as adhesive otitis, occurs when your middle ear fills with a sticky, glue-like fluid. Glue ear can lead to ear infections and hearing loss if left untreated, so it's important to treat it promptly. Glue ear sometimes occurs after a cold, sinus infection, or

allergies that lead to fluid backing up into the ear. It's more common in children and people with narrow Eustachian tubes.

Airplane Ear

Airplane ear, or ear barotrauma, occurs when rapid changes in air pressure cause ear discomfort or pain. In some cases, people may experience muffled hearing until the air pressure in the ears equalizes. Airplane ear can develop any time there's a rapid change in air pressure, such as when an airplane takes off or lands, when diving, or even when going up or down a long elevator.

Changes in air pressure cause ear pain because the ears contain hollow, air-filled chambers. Consistent air pressure in both ears is necessary for the delicate bones of the ears to translate sound waves into vibrations, which are then translated into nerve impulses and sent to the brain to decode. Normally, airplane ear will resolve by itself in a few minutes. If airplane ear lingers or you experience it often, see your doctor.

Airplane ear is more likely if you have a cold, allergies, or sinus inflammation. Taking decongestants before flying can help in these cases. Yawning, chewing gum, talking or eating food can also help prevent and resolve airplane ear. Movements of the jaw help stretch out the Eustachian tubes, allowing the air pressure to equalize.

Hearing Loss: The Psychological Impact

Hearing loss in adulthood can have a profound psychological impact. Studies show that hearing loss can have a negative impact on relationships with partners, friends, and colleagues. It is also associated with depression and social isolation, and it increases the risk of dementia and Alzheimer's.

When you struggle to hear, it's difficult to communicate well. It's easy to miss important details of conversations, and it can feel awkward to ask people to repeat themselves. Because of this, many people with hearing problems feel left out at social gatherings and may withdraw from people and become socially isolated.

Even mild hearing loss can make it difficult to follow the nuance in conversations. Particularly in intimate relationships, misunderstandings can lead to hurt feelings and even the end of a relationship. In a 2009 study of 1,500 people with hearing loss, 44% reported that relationships with their friends, family, or partners had suffered because of their hearing loss. For 34% of respondents, these communication problems led to the end of relationships - including marriages.

Compounding the communication challenges that occur when it's hard to hear are the emotional challenges that occur in the face of a serious health problem. Many people find it difficult to come to terms with their hearing loss. They may experience grief, anger, denial, and depression. These emotions can lead to additional difficulty communicating and more social isolation, deepening the negative cycle.

As mentioned above, hearing loss is also associated with a greater risk of Alzheimer's disease. The risk of Alzheimer's goes up as the level of hearing loss increases. Scientists believe that there are three reasons for the hearing loss/Alzheimer's connection:

1. When the ears stop hearing well, it leads to brain changes that can make Alzheimer's more likely. If the part of the brain that processes sound isn't used, it wastes away, shrinking the brain.
2. At the same time, hearing loss also creates strain from overuse. It's difficult to strain to hear all day, and that effort takes resources away from normal brain functions.
3. As the brain changes, social isolation becomes more likely. Humans need other people, and when we don't have regular, meaningful social interaction, it can lead to depression, anxiety, and poor immune system function, and can even affect our life expectancy.

In order to avoid the emotional and cognitive consequences of hearing loss, it's important that anyone struggling with their hearing gets treatment as soon as possible. Even when hearing loss can't be reversed, doctors have many treatments that can help you hear better and communicate more effectively.

In addition to medical treatment, consider speaking to a counselor familiar with hearing loss. A counselor can help you work through your emotions, and help you build the communication skills you need to maintain strong relationships with your friends and family.

The ear is a delicate organ, and there are many problems that can occur that damage our hearing. In order to help keep your hearing as sharp as possible for life, protect yourself from loud noises, have your ears checked regularly, and get prompt treatment if any hearing problems are detected.