

How to Find Hearing Loss-Friendly Physicians

By Shari Eberts

For people with hearing loss, going to the doctor can pose a stressful communication challenge. A mumbling receptionist can make it difficult to check in for an appointment and hear one's name being called when the doctor is ready. In the examination room, doctors are often multitasking, taking notes with their backs turned while they ask questions or discuss a patient's medical condition. This doesn't work for someone who has hearing impairment and uses lipreading to augment his or her hearing. Surprisingly, these scenarios can even happen during visits to an audiologist or a physician for a hearing-related issue. When you have hearing loss, advocate for yourself to get the most out of every doctor's appointment. Follow these tips to get the health care you deserve.

1. Discuss your needs upfront. When setting a doctor's appointment, make sure to say that you have hearing loss and request any available accommodations. You will learn a lot simply by observing the reaction to your request. Unfortunately, some doctor's offices—even those related to hearing—do not offer any hearing assistance either at the reception or during the appointment, where a portable loop or simple pocket-talker device, for example, could make all the difference.

2. Bring your own devices. Wear your hearing aids and bring whatever assistive listening devices you have such as a Roger pen, simple FM system, or free speech-to-text smartphone application like Google's new Live Transcribe.

3. Start your appointment with a reminder of your hearing loss. When you arrive at the doctor's office, remind the receptionist about your hearing loss and request that he or she speak slowly while facing you. If an accommodation is available that you think would be helpful, request to use it. Ask the office staff to alert you with a tap on your shoulder when it is your time to see the physician. In the exam room, tell the doctor about your hearing loss and your communication preferences.

4. Provide real-time feedback, both positive and negative. Thank the receptionist, staff, and physician for utilizing any accommodation and/or speaking in a way that you can hear. Positive feedback often leads to continued constructive



behavior. If they drift away from communication best practices during the appointment, provide a gentle nudge back to the right direction. Several reminders may be necessary, so rather than getting frustrated, stay focused on doing what it takes to get the important health information that you need.

5. Make a Communication Action Plan (CAP). Complete a CAP (bit.ly/CommAccessPlan), which details the ways that physicians and clinic staff should best communicate with you, and share it with your health care providers. A CAP lists the hearing devices you use and services you need to communicate better. Your CAP should be kept in your medical record for easy access at each doctor's appointment, but bring a copy with you in case the clinic's copy gets misplaced. Read this Guide For Effective Communication in Healthcare (<http://bit.ly/2GYj4ue>) by the Hearing Loss Association of America to learn more about a CAP.

6. Ask for important details in writing. Medical information can be confusing and full of jargon. Request the physician to write down key information, including any required medication and dosage. Bring along a pad and pen for this purpose. Clarify the details for your next appointment in writing or request a confirmation email. Review all insurance/billing information in writing and ask for clarification when needed.

When you have hearing loss, self-advocacy in a medical setting is critical. It can be frustrating when physicians and their staff do not use best practices in communication or do so for a brief period, then revert back to ways that are challenging to you. However, don't stay silent. Advocate for yourself—always politely—to ensure that you get optimal health care. If your current physician and/or clinic staff is unresponsive to your communication needs, start looking for a new one.



Ms. Eberts is a hearing health advocate, writer, and avid Bikram yogi. She blogs at LivingWithHearingLoss.com, and serves on the board of trustees of Hearing Loss Association of America (HLAA). She has an adult-onset genetic hearing loss and hopes that her story will help others to live more peacefully with their own hearing issues. Connect with her on Facebook and Twitter.

Assistive Listening Systems & Your Right to Hear

By Stephen Frazier

The Americans with Disabilities Act (ADA) stresses that people with hearing loss have the same right to hear well in places of assembly as people with normal hearing. If a venue has a public address system, a hearing aid-compatible assistive listening system (ALS) must also be available. If you have hearing loss, stay up-to-date on technological advancements and regulations to ensure your access to sound in public settings.

WHAT ARE THE TYPES OF ALSs?

HEARING LOOPS. In its simplest form, a hearing loop is a discreetly hidden wire surrounding a seating area. When plugged into an amplifier that is connected to a PA system, the loop transmits the PA system sound as a silent electromagnetic signal that is received by wire coils called telecoils, which are found in most hearing aid models today. The hearing aids with an activated telecoil can turn that signal back into sound.

RF SYSTEMS. These systems transmit sound via radio waves to a receiver and earphones, which you can borrow in various public venues. Like a miniature radio, the receiver captures the radio signal and sends it to the user's ears via the earphones. To meet the ADA hearing aid compatibility mandate, all RF systems installed, or significantly upgraded since 2012, pair 25 percent of receivers with neckloops instead of earphones. When plugged into the receiver, the neckloop becomes a miniature hearing loop, transmitting sound electromagnetically to hearing aid telecoils.

IR SYSTEMS. These transmit sound via invisible light beams that are converted into sound in the same manner as in RF systems.

WiFi SYSTEMS. Audio streaming delivers sound through an existing WiFi network to smartphones or tablets via an appropriate app. While these are getting more popular, they do not meet the ADA standards for an ALS because venues that offer them require users to use their own smartphones as receivers.



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WHAT ARE BENEFITS OF ALSs?

A recent survey found that hearing aid users are six times more likely to use a hearing loop system than other ALS options in a public venue because it eliminates the need to borrow and return devices and remove their hearing aids to access the system. It also eliminates any hygienic concern over using borrowed devices. Furthermore, user's hearing aids customize the sound to match the pattern of their audiogram—something earphones cannot do.

Beyond the benefits unique to hearing loop systems, any ALS separates sounds that users want to hear, such as speech from background noise. By using earphones or turning off their hearing aid mics, users eliminate much of the reverberation, ventilation hum, and other sounds that may interfere with their ability to discern words, improving the speech-to-noise ratio.

HOW DO I FIND AND ACCESS AN ALS?

The ADA requires the placement of ALS signage (blue international symbol; see above) in venues with an available system. Look for the symbol at performing arts halls, transportation hubs, legislative chambers, and any place where people assemble that uses a PA system. If you see this sign, inquire at the box office or information desk about the type of system available. If a hearing loop is available and you have telecoils, simply turn them on. You can also borrow a small telecoil-equipped receiver and earphones to access the loop. If an RF or IR is available, borrow a receiver and earphones or a neckloop. Places of worship are the No. 1 location with ALSs but, because the ADA does not usually apply to these venues, you may not see any signage. Ask an official if a hearing loop is available. Venues with RF or IR systems must offer users the choice of earphones or a neckloop.

You can become an advocate for hearing loops. Talk to leaders at your place of worship, city council, and local performing arts center about installing a hearing loop. Encourage leaders and other hearing health advocates to learn more about the technology and how to go about looping a venue. For more information, visit these resources: www.Hearing-loss.org, www.hearingloop.org, www.aldlocator.com/, and www.time2loopamerica.com/loop-locator/. 



What You Need to Know Before Getting a Hearing Dog

By Judy McDonald

You've probably seen service dogs for people returning from war or in wheelchairs, and even dogs that can alert their humans to impending seizures. But did you know there are service dogs specially trained for the deaf? Learn more about hearing dogs and how they can help those who are hard of hearing.

WHAT ARE HEARING DOGS?

Hearing dogs enable deaf or hard-of-hearing people to be more aware of their surroundings. They give cues to help their handler better navigate public settings. For example, when the dog looks to the left, this tells the handler that an auditory signal is coming from that direction. This prompts the handler to look to the left to see if it is something he/she should respond to.

Hearing dogs are also trained to alert their handler to certain sounds at home. For example, they are trained to paw at their handler's leg when the smoke alarm goes off, the doorbell rings, the microwave dings, or the kettle whistles. Hearing dogs can be trained on a case-by-case basis to react to sounds that are specific to a handler's situation. An average service dog undergoes over 600 hours of training.

Hearing dogs can be of a small or large breed, but size is not a factor. Labradors, golden retrievers, and doodles are generally trained as hearing dogs, but any dog breed that has the right temperament and energy as a service dog would be a great hearing dog.

IS A HEARING DOG RIGHT FOR ME?

Weigh the pros and cons of getting a hearing dog. Will it give you new freedoms, or will it draw extra attention to you that you're not comfortable with? Although service dogs can bring many benefits, getting one requires at least a 10-year commitment. This decision should not be taken lightly. Make sure your friends and family are on board because getting a hearing dog can be a long and difficult process.

Different service dog organizations may have different application requirements and procedures. In general, service dog applicants must:

- be deaf or hard of hearing, with medical documentation,
- have good communication skills,



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- have love for dogs and patience to undergo dog trainings and address possible challenges,
- be able to provide veterinary care and maintenance for the next 10 to 12 years,
- be able to participate in handler training.

HOW CAN I APPLY FOR A HEARING DOG?

If you meet these prerequisites, find a service dog organization and apply for a hearing dog with your medical and personal referral documents. If your initial application is accepted, the organization will contact you to schedule a phone or in-person consultation to see how a service dog can assist you and make sure you are a good fit for a hearing dog. Check the financial requirements or if the organizations can help you raise the funds to get a hearing dog. Once the funds are met, you will be in line for dog placement to select a dog that has the natural propensities to assist you; additional training may also be given to the service dog when deemed necessary.

WHAT IS HANDLER TRAINING?

Handlers must learn how to work with the dog as a team. Handler training generally takes 14 days to reinforce the dog's previous training. This is when the dog learns to respond to the handler's commands in practical, real-life settings to help the handler gain confidence in taking the dog under his or her care. Training is also conducted in public, such as shopping malls, restaurants, and parks, so the handler feels comfortable taking the dog outside of the house.

After completing the training, the handler gets a certification card and the dog is provided with a service vest and identification tag. Service dog organizations may also conduct monthly and bi-yearly consultations to ensure that the hearing dog is healthy, happy, and effectively improving the handler's quality of life. 

Plan for Effective Communication in Health Care Settings

By Jody Prysock and Toni Iacolucci

For people with hearing loss, communicating clearly with doctors and medical staff is important for safety and well-being. Consider these tips:

- Tell staff you are hard of hearing or deaf.
- Fill out a Communication Access Plan (CAP), and ask that it be added to your Electronic Medical Record (<http://bit.ly/2uHL5Df>).
- Ask questions, and make sure they are all answered.
- Repeat information to make sure you understand.
- Find out which staff member is responsible for the aids and services you need.

Your needs may depend on the type of visit, so note these reminders:

Visiting the Emergency Department

- Remind the staff you will not hear your name being called.
- Ask for a copy of registration questions.
- Ask that a sticker with a symbol showing that you are hard of hearing or deaf be placed on your wristband.
- Ask to have a sign posted with your hearing status.
- If you cannot wear hearing aid(s) or cochlear implant(s), ask that they be put in a labeled container or given to a family member or friend.
- Be sure to get all instructions in writing.

Inpatient Visits

Pre-Admission

- Contact a patient representative or advocate to ask who is responsible for arranging the services you need.
- Follow up before your appointment to ask about aids and services they have for you and what you need to bring.

Admission

- Bring your paperwork and your CAP.
- Bring hearing aids, cochlear implants, assistive listening devices (ALDs), batteries, and a container with your name on it.
- Bring a pen and paper or a tablet.

During Your Stay

- Inform the staff that you expect to be included in all discussions and decisions.
- Tell the staff that you won't be able to hear the intercom.
- Make sure to have a sign of your hearing status over your bed, a wristband with a universal hearing loss sticker,

visual alerts, captioned phone, and instructions to set up TV captions.

- Discuss with the staff how they will get your attention, e.g., turning lights on and off, tapping you on the shoulder.
- Make sure hearing aids, cochlear implants, ALDs, etc., are kept safe.
- If you are unable to get the help you need, ask to speak with a Patient Advocate.

Discharge

- Request to have all discharge instructions in writing.

Outpatient Visits

Scheduling Appointments

- Use an online patient portal or email scheduling.
- Discuss what aids and services are available.
- If using a phone for scheduling, repeat the date, time, and address of your appointment to confirm.

When You Arrive


- Remind the staff you are hard of hearing or deaf.
- Give them your CAP.
- Ask the staff how they will let you know when you will be seen.

Your Visit

- Review your CAP, and discuss your hearing status and your needed aids/services.
- When prescribed a new medication, ask if it may affect your hearing, balance, or tinnitus.
- Request to have all information about your treatment plan and medications in writing.
- Ask for the name, phone or text number, or email address of someone to contact if you have questions.

TESTS & PROCEDURES

- Remind staff that you are hard of hearing or deaf.
- Give staff a copy of your CAP.
- Ask to wear your hearing device(s) until tests or procedures begin. If this is not possible, ask staff to put the device(s) in a container with your name on it.
- Ask for a written explanation of what will be done.
- Make sure all your questions are answered before staff put on surgical masks.
- If you have a cochlear implant(s), ask your doctor if you can have an MRI.
- Ask for earplugs/a headset before getting an MRI.
- If anesthesia is involved, ask your doctor if this will affect your hearing, balance, or tinnitus.
- Ask your doctor if someone will be in the room to give instructions and how he or she will communicate with you.
- Ask the staff how and when you will get the results.

For more, see the Guide for Effective Communication in Health Care. 



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Advocate for Your Hearing Health

By Beverly Zwahlen

Self-advocacy to improve one's hearing and comprehension is not always easy for people with hearing loss. But, with practice, you can effectively communicate your hearing and listening needs to those around you.

1. Self-advocacy begins with self-knowledge.

First, understand your listening strengths, needs, and interests. Even with hearing aids (HA) or cochlear implants (CI), you may find yourself in situations where you'll need additional assistance to better hear and understand speech (e.g., face-to-face meetings in noisy settings, use of landlines/mobile phones, using safety devices like smoke and fire alarms, watching TV). If you require help to understand your needs, ask your hearing care provider to conduct a needs assessment.

2. Use Hearing Assistive Technology (HAT).

If you need additional hearing assistance beyond your HA or CI, there are other options. Bluetooth accessories and hearing loops provide direct audio streaming to your HA or CI from TVs, phones, theaters, airports, etc. Closed-caption phones, apps, and alerting devices are also available—many at no cost to qualified individuals. Learn about HAT by asking your hearing care provider and joining a hearing support group in person or online. People with hearing loss are eager to share their knowledge and experience.

3. Don't try to hide your hearing loss.

Acknowledge your hearing loss so people will be more likely to look at you directly and speak clearly when addressing you. If your conversation partner knows that you have hearing difficulties, there may be fewer misunderstandings.

4. Effectively and assertively communicate your needs and preferences.

Using effective strategies, you can modify behaviors and work toward improving your lines of communication. Consider these examples:

- Avoid saying "Huh?" or "What did you say?" when you heard at least part of what someone was saying. Instead, say something like, "I know you are talking about a new movie, but I did not catch the title." This will help the person know what you did not hear clearly. Practice analyzing why you experience difficulties with a particular speaker, then make specific polite requests.
- Did the person turn away from you while talking? Use a specific request such as "Please face toward me when you speak. I lip-read" instead of saying "I didn't hear you."
- Is the person talking with their hand over their mouth? Say "Could you please put your hand down? I lip-read,"

instead of "I can't make out what you're saying."

- Does the person speak too fast? Ask the person to "Please slow down a bit so my ears can keep up with what you are saying."
- Verify what you think you heard. Be willing to ask questions when something is unclear or you need clarification.
- Use positive words when you need help understanding. Say "Could you please speak a bit louder?" instead of "You're going to have to speak louder if you want me to understand you."
- Politely let people know what you need to make the conversation flow more easily. At a group meeting, suggest that only one person talk at a time. When in a conference call, suggest that each participant identify himself or herself when he or she speaks.

5. Be prepared! Anticipate difficult listening situations and plan ahead.

Example: Dining out with friends?

- Suggest going at a time when the restaurant is not likely to be too busy.
- Suggest a place that you know is relatively quiet.
- Familiarize yourself with the restaurant's menu that can often be found online.
- Arrive early and pick a seat furthest from the noisy kitchen and position yourself to best understand conversation.
- Bring any hearing assistive devices that you may need

Example: Attending a meeting with a large group?

- Arrive early and sit where you have the best line of sight of most attendees and with least glare.
- Remove chairs that are not needed.
- Bring hearing assistive devices and test first.
- Ask for a facilitator and scribe.

6. Listen with your eyes, not just your ears!

Look at the speaker's face, particularly their lips. The speaker's facial expressions and body language may also help you understand what is being said.

7. It's ok to break the rules.

Picture this: You are waiting at an airport boarding gate, and after a loudspeaker announcement that you couldn't understand, half the people waiting with you start running to another gate. Go to the head of the line and say: "Excuse me, I don't mean to break into the line, but I could not hear the announcement and wonder if you could repeat it for me so I don't miss my flight."

8. Be patient with yourself and with others.

Don't blame yourself or others for your difficulties. Keep trying these tips and stay positive, even when the going gets tough.



Ms. Zwahlen is a hearing wellness advocate, hearing technology trainer, and public speaker. She has severe-to-profound hearing loss that has progressed since childhood.

Emergency Preparation for People With Hearing Loss

By Shari Eberts

After the disheartening events of Sept. 11, 2001, my family decided to have an emergency plan in place. But after attending an emergency preparedness session, I realized that our emergency plan did not consider my hearing loss. *How would I make sure I had my hearing device during an emergency? What's my backup communication strategy should I lose my device?* Here are tips in making an effective emergency plan for people with hearing loss.

STAY INFORMED

While you can prepare for some emergencies like blizzards or hurricanes, you can never be sure about unexpected crises like fire, waterline damage, or terrorist attacks. In either case, the more information you have, the safer you will be. Sign up for email or text alerts for upcoming weather events, transportation disruptions, etc. Find local emergency alert systems and programs that send out timely and written alerts, which work well for people with hearing loss.

CREATE AN EMERGENCY NETWORK

Designate at least two people (friends, family, caregivers, neighbors, coworkers) to be part of your emergency network. You may want different networks for home and work depending on how far apart they are. Consider including somebody from out of town to act as a communication relay in case the local phone lines are jammed.

The people in your network will stay in touch during an emergency, have spare keys to each other's homes, and know where to find emergency supplies. Your network must be familiar with your hearing loss as well as your hearing devices (e.g., hearing aids, CIs, Roger pens, FM systems, etc.) and the batteries or chargers required to operate them.

PLAN YOUR COMMUNICATION OPTIONS

For people with hearing loss, this may be the most critical step. How will you communicate with your emergency network or medical personnel? In an emergency, your usual



modes of communication may not be available so preparation is critical.

- Prepare index cards with important phrases like, "I wear hearing aids," or "Please face me and speak as clearly as possible." Have a notepad and pen available as well.
- Use social media to stay in touch. Facebook Safety Check, for example, lets you indicate your status during an emergency, and updates you on the status of others.
- Install personal safety applications (apps) on your smartphone. Explore iTunes or Google Play for popular apps that show your emergency contacts, blood type, and details about your hearing loss/devices on your phone's lock screen, making it visible without a password.

PREPARE EMERGENCY SUPPLY KITS

You will need two—one kit for your home and one portable kit should you need to evacuate. Both kits will contain similar items, but some (like water and snacks) will differ in quantity. Include:

- Copies of important documents like insurance cards, photo IDs, contact details of your family/emergency network, and a medication list with dosages. Keep these items in a waterproof container.
- Flashlights with extra batteries to help you navigate and lipread. Bring a whistle or bell to get someone's attention.
- First aid supplies, including an antiseptic cream, painkillers, bandages, and cleansing wipes.
- Hearing devices with spare batteries in waterproof containers. Include available backup devices and portable battery chargers, but make sure they are charged!

Preparation is the best defense in any emergency. Start making your emergency plan using helpful templates and add contingencies for your hearing loss (NYC gov, 2017). Hopefully, you will never need to use it. ■



Ms. Eberts is a hearing health advocate, writer, and avid Bikram yogi. She serves on the Board of Trustees of Hearing Loss Association of America. She has adult-onset genetic hearing loss and shares her stories at LivingWithHearingLoss.com.

Tips for Fall and Balance Safety

By Jennifer Grace, AuD

Falls among older people (aged 65+) are widespread and growing. According to the Centers for Disease Control and Prevention (CDC), one in four older adults falls each year, and one in every five of those falls results in serious injury, such as a broken bone or head injury. Alarming, fall death rates in the United States have increased by 30 percent from 2007 to 2016.¹

Problems with walking and balance are an obvious fall risk factor. So it's not surprising that research reports 80 percent of people aged 65 and older in the United States have experienced balance disorders such as dizziness and vertigo.² Of these balance disorders, vestibular (inner ear) dysfunction is a leading cause. In fact, 35 percent of adults 40 years or older in the United States have experienced vestibular dysfunctions.³

Less obvious is the audiometric portion of the ear and how it may contribute to fall risk. A study at the Johns Hopkins University School of Medicine and the University's Bloomberg School of Public Health found that people with at least 25 dB hearing loss are three times more likely to report a fall. Each 10 dB increase in hearing loss raises the chance of falling by 1.4 times.⁴

At the onset of balance disorder or hearing loss symptoms, a primary care physician or internal medicine doctor typically determines and refers the patient to the most appropriate specialist, such as an otolaryngologist (ENT), a cardiologist, a neurologist, or an audiologist. Common intervention strategies include medication, surgery, therapy (the most common and least invasive), or assistive hearing device.

Health care technology provides the most promising approach to address these issues. Expanding at an amazing rate, health and medical technology now spans artificial intelligence, virtual health care, nanomedicine, virtual reality (VR), 3D printing, and big data.

TECHNOLOGY FOR BALANCE DISORDERS

Twenty years ago, the standard diagnostic test battery for identifying vestibular dysfunction was video nystagmography (VNG) and caloric testing. Recent research shows that 68 percent of patients with vestibular dysfunction are missed when only VNG is performed.⁵ In an age of technology enlightenment, if a full diagnostic test battery isn't completed, answers like "your tests are normal" or "just live with it" are outdated. Seek out a specialist who provides a comprehensive diagnostic test battery of all five end organs in each inner ear.

In this hyper-connected world, computers, mobile phones, cars, homes, and even your household pets, can be remotely



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monitored. So goes the trend in health care. Virtual health care seeks to extend the reach of medical care out of the office and into patients' homes, allowing doctors and specialists to virtually monitor and treat patients in between office visits. VR devices are the new buzz for intervention of phobias, addictions, and lazy eye, to name a few. Several in-office VR programs and devices are in development for therapy and treatment of various balance disorders. However, a home-based VR treatment system for patients with dizziness, vertigo, and imbalance would provide the most patient convenience and clinical flexibility. These advances also promise to make health care more accessible, continuous, and effective.


Look for a balance center that provides both in-office and home-based treatment to receive the most enhanced, individualized, and effective treatment.

HEARING TECHNOLOGY OPTIONS

Research shows that hearing loss can lead to cognitive decline, such as incoordination and difficulty completing normal daily activities, increasing the risk for falls and other injuries.⁶

Many technologically advanced hearing devices are available to correct individual hearing loss, providing customized speech recognition and improved overall hearing. These devices can be adjusted remotely and connect to mobile phones, televisions, and even doorbells, providing additional lifestyle enhancements. However, the U.S. FDA reported that only one-fifth of people who could benefit from these hearing devices actually seek them out.⁷

Ask a specialist about advanced hearing devices, including extended wear options. It can benefit more than just your hearing.

Advances in general medicine and audiology are often linked to technological innovation. Follow the technological advances and you'll find a more balanced future. 



Dr. Grace is the clinical director at Newport-Mesa Audiology Balance & Ear Institute located in Newport Beach, CA. She is a vestibular audiology specialist who conducts research, presents, writes, and contributes in the areas of dizziness, vertigo, balance disorders, tinnitus, and hearing loss.

References for this article can be found at <http://bit.ly/HJcurrent>.

Choosing the Right Hearing Protector

By Christi Themann, MA, CCC-A

Noise can be bothersome and sometimes fun, but in all cases, a sound that is too loud for too long can damage one's hearing. Repeated exposure to hazardous sound can cause permanent hearing loss, tinnitus (ringing in the ears), and trouble understanding speech in background noise. The best way to prevent noise-induced hearing damage is to reduce exposure by turning down the volume, moving away from the sound, or limiting exposure time. If you cannot take any of those steps, then you should use hearing protection. Follow these guidelines to choose the right hearing protector.

1. Know how much noise reduction you need. The National Institute for Occupational Safety and Health (NIOSH) recommends wearing hearing protection whenever sound levels are 85 dBA or higher. Check how loud a sound is by using a sound measuring app such as the NIOSH Sound Level Meter (bit.ly/NIOSHsoundapp). If you do not have an app, a good rule of thumb is that noise is too loud if you need to shout to be heard by someone an arm's length away.

Hearing protectors are labeled with a Noise Reduction Rating (NRR). However, the NRR is measured in a laboratory and most people get far less noise reduction than the NRR suggests. Fortunately, most hazardous sounds require just 5 or 10 dB of noise reduction to be safe, and almost any hearing protector, when fit correctly, can provide 10 dB of protection. An easy way to know whether your hearing protection is fit correctly is to listen for a change in how you hear your own voice; if your voice sounds deeper, fuller, or more hollow, you likely have a good fit.

If the noise is 100 dBA or greater (such as chainsaws or jackhammers) or if it is impulsive (such as nail guns or firearm noise), you should wear double hearing protection (earmuffs over earplugs).

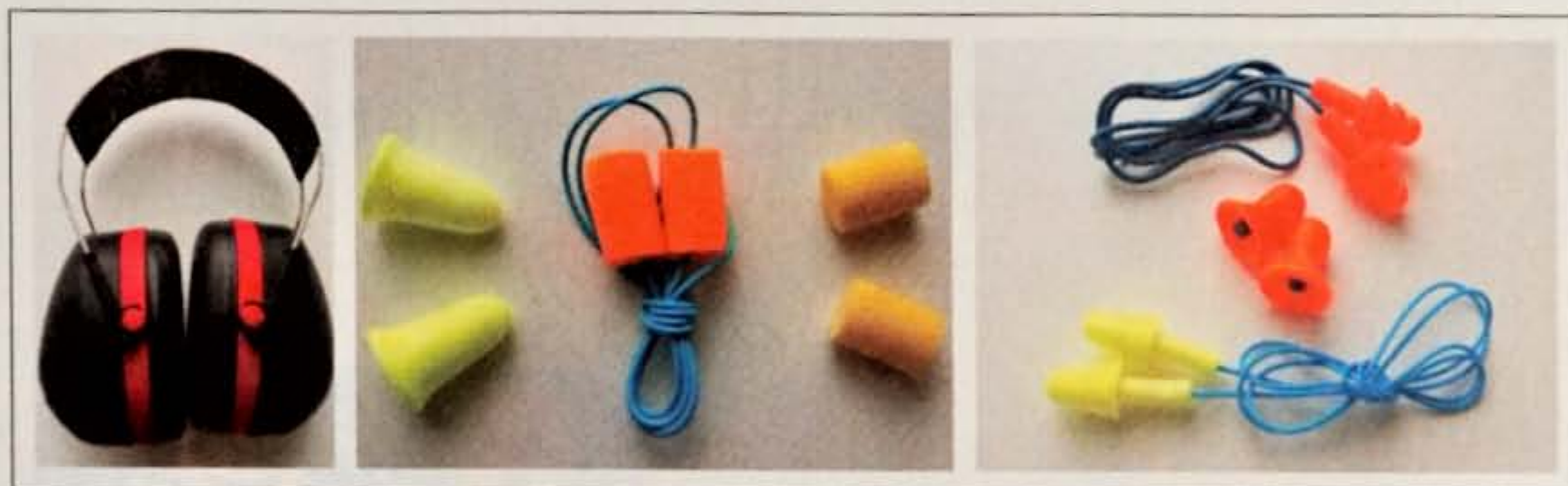



Figure 1. Examples of earmuffs, foam ear plugs, and pre-formed ear plugs.

2. Think about the listening situation. Factors beyond noise levels need to be considered. For example, will you be wearing eyeglasses, sunglasses, or eye protection? What about hats, helmets, or head protection? Eyeglass frames and headgear can interfere with the seal of an earmuff, making earplugs a better choice. Will your hands be getting dirty? If so, avoid using foam earplugs, which must be rolled down with your fingers before insertion. Will it be very hot or very cold? Earmuffs can be uncomfortable in hot environments; earmuff cushions may not seal tightly in very cold environments.

Consider the kinds of sounds involved. Will the noise be continuous or intermittent? Earmuffs and pre-formed earplugs are easier to remove and replace frequently than foam plugs. Corded protectors keep earplugs handy if you don't have pockets or a purse. Will you be listening to music or need to talk to people while wearing hearing protection? Flat attenuation earplugs or earmuffs (also called musician's earplugs) preserve sound fidelity and would be the best choice. Will the environment generally be quiet except for sudden bursts of sound such as firecrackers or target shooting? Level-dependent or sound restoration hearing protectors allow sound to pass through when it is quiet and become protective when it is loud.

3. Consider comfort and convenience. Once you have narrowed your selection down to hearing protectors that are appropriate for your noise exposure and compatible with what you will be doing when you wear them, the choice is completely up to you! Remember, though, that hearing protection only works if you wear it consistently and correctly every time you are exposed to hazardous noise, so choose a protector that is comfortable and convenient. 



Ms. Themann is a research audiologist on the Noise and Bioacoustics Team at the National Institute for Occupational Safety and Health (NIOSH). She manages audiometric testing for several large epidemiologic studies, including the National Health and Nutrition Examination Survey and the Early Childhood Longitudinal Study. She is also interested in using new media to promote healthy hearing and developing effective hearing loss prevention strategies for workers with impaired hearing.

DISCLAIMER: The findings and conclusions in this report are those of the author and do not necessarily represent the official position of the National Institute for Occupational Safety and Health or the Centers for Disease Control and Prevention.