

Hearing loss is a common problem caused by aging, noise exposure, ototoxic medications, and illness. Given their frequent contact with older adults, home care clinicians are uniquely positioned to recognize the adverse effects of hearing loss on physical, social, and cognitive health. This article explores the factors that contribute to hearing loss, highlighting their cumulative effects on overall hearing ability. The consequences of untreated hearing loss support the urgency of early identification, prompt intervention, and proper management of hearing disability. This article also provides an overview of available treatment options, including traditional prescription hearing aids and recently approved over-the-counter devices. By incorporating components of awareness, treatment, and effective communication strategies, healthcare clinicians can take an integrated approach to improve the overall well-being and quality of life of individuals struggling with hearing loss.

# Hearing Loss: Insights for Home Care Clinicians



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**M**ore than 48 million people in the United States (nearly twice the population of Texas) have hearing loss (Centers for Disease Control and Prevention, 2022).

Despite the prevalence of this condition, only 20% of those experiencing hearing loss actively seek treatment (American Speech-Language and Hearing Association [ASHA], 2012). Factors such as lack of information, confusion about treatment options, and prohibitive costs compound this issue. This is a genuine problem because the number of people with hearing loss is projected to grow to over 73 million by 2060 (Goman & Lin, 2018). Given their frequent contact with older adults, home care clinicians are uniquely positioned to recognize the adverse effects of hearing loss on physical, social, and cognitive health. This article aims to highlight the effects of untreated hearing loss, outline accessible treatment options, and provide guidance to clinicians caring for these individuals in their homes.

Currently, one third of individuals aged 65–74 have hearing loss that could be helped with hearing aids, rising to 50% of older adults over 75 years old (Figure 1), (ASHA, n.d.). Despite the high prevalence of hearing loss, it often receives less attention than other chronic conditions. However, age-related hearing loss is the third most common physical

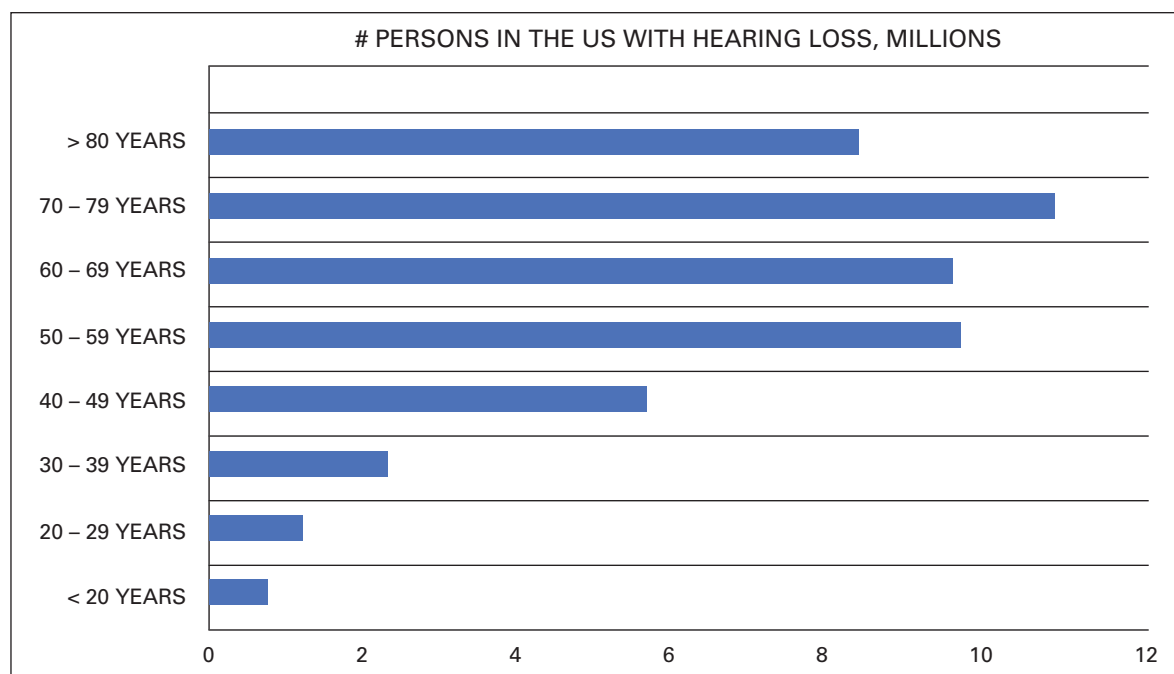
condition in the United States, twice as prevalent as diabetes or cancer (ASHA, 2012). Unlike physical conditions requiring visible mobility devices, hearing loss is “invisible” and may go unnoticed. Hearing loss also worsens gradually over time, making individuals unaware of the severity of their condition until considerable damage has occurred.

Hearing loss can result from several factors affecting various parts of the auditory system, including the outer ear, middle ear, and inner ear (Figure 2), and auditory neural pathways. Any failure in these components can compromise hearing acuity. For example, accumulation of cerumen (wax) in the ear canal can temporarily impede hearing, but this issue is quickly resolved with proper medical care. The most common cause of permanent hearing loss is damage to the sensory cells in the cochlea, known as “hair cells.” Typically, both ears are affected, impairing the perception of softer, higher-pitched sounds necessary for understanding speech, leading to difficulties in communication and social interactions.

### Causes and Consequences of Hearing Loss

Age is a significant predictor of hearing loss. Age-related hearing loss, known as *presbycusis*, is most prevalent among those 60 years and older. The

**Figure 1.** Persons with hearing loss in the US. Adapted from Lin et al. (2011)



main symptom is difficulty hearing, particularly in the presence of background noise or when more than one person is talking. This is because the most significant degree of hearing loss occurs in the higher frequencies (pitches), making voices sound “muffled,” and speech difficult to understand. Those with presbycusis may say people mumble when they speak. They also have trouble hearing softer, high-pitched tones, such as birds chirping, the phone ringing, or the turn signal in the car (Health Partners, n.d.). Activities such as conversation, watching television, talking on the telephone, and listening to music become more challenging as hearing declines.

Exposure to loud noise is another common cause of hearing loss, either from impulse noise (e.g., weapons firing) or cumulative effects over time. Those most at risk have a history of working in loud environments, such as manufacturing, construction, or the military. Damage can also result from recreational noise exposure from attending concerts, using lawnmowers or power tools, hunting, and playing musical instruments. An associated symptom may include tinnitus, commonly known as “ringing in the ears,” perceived as a high-pitched tone, buzzing, chirping, clicking, or hissing without an external sound source.

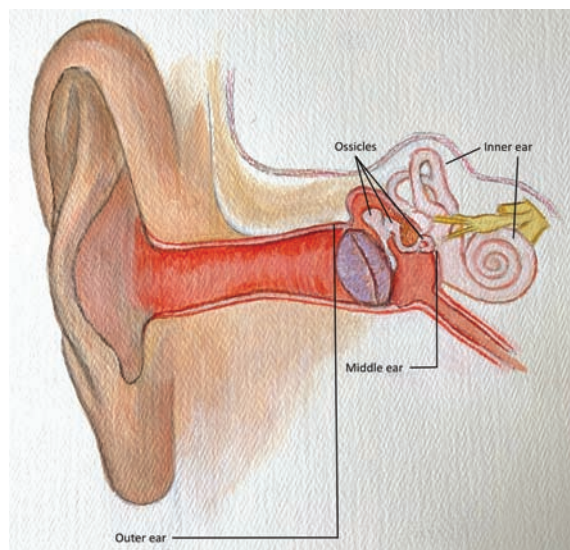
Hearing loss may also follow illness or exposure to medications such as high doses of aspirin, certain antibiotics, or chemotherapeutic agents that

are toxic to the auditory system (Victory, 2022). Studies have also linked other chronic health conditions to hearing loss; those with diabetes are more than twice as likely to have mild to moderate high-frequency hearing loss than those without diabetes (National Institutes of Health, 2008). Those with heart disease and high blood pressure are also at greater risk of hearing loss (Tan et al., 2018).

It has been well documented that untreated hearing loss can lead to psychosocial issues. Adults with hearing loss are 47% more likely to experience depression, isolation, social withdrawal, stress, frustration, denial, anger, paranoia, fatigue, embarrassment, and shame (Centers for Disease Control and Prevention, 2022). Hearing loss in older adults is also strongly associated with poor physical health, including decreased endurance for walking (Martinez-Amezcuca et al., 2021), poor postural stability, and increased fall risk and hospitalization (Foster et al., 2022; Jiam et al., 2016).

A more recent concern is the correlation between hearing loss and cognitive decline leading to dementia. This is particularly unsettling for those with undiagnosed or untreated hearing loss. In fact, hearing loss is considered the “most modifiable risk factor of dementia” (Livingston et al., 2020), with studies showing the use of hearing aids associated with delayed diagnosis of Alzheimer’s disease and prolonged onset of dementia (Mahmoudi et al., 2019). People who use hearing aids have a 19% lower risk of cognitive decline and a 17% lower risk of dementia compared with those with untreated hearing loss (Yeo et al., 2023), leading some to suggest that up to 40% of dementia cases could be prevented by using hearing aids (Livingston et al., 2020).

**Figure 2.** Sketch of the outer, middle, and inner ear. Used with permission of creator Susan Spitz



### The Role of Home Care Clinicians

With such a large population of individuals affected by hearing loss, why does it so often go untreated? First, most individuals tend to be unaware they have hearing loss, or they may perceive *some* difficulty with their hearing, but do not recognize the severity, so they are not motivated to seek treatment (Institute of Medicine and National Research Council, 2014). Age-related hearing loss typically worsens gradually over time, so many individuals are unaware of the severity of their hearing impairment. They also learn to compensate by reading lips or facial cues, leaning in toward the speaker, relying on context, asking for repetition, and turning up the volume on their devices, such as the television.

In the United States, close to 3 million older adults receive home healthcare services, many of whom also struggle with hearing loss. However, most hard-of-hearing persons receiving home care services are not receiving hearing health-care (Pittman et al., 2021). There is a need for more awareness and sufficient training for health-care providers to manage and care for individuals with hearing loss. Among those receiving home care, more than 50% have hearing concerns, yet only 16.1% use hearing aids, perhaps because other health issues take priority. More understanding of how to recognize and appropriately assess hearing difficulty in the home health setting is needed. One study found 44% of older home care recipients who reported hearing difficulty were identified as having “adequate” hearing by their caregivers. In contrast, later assessments found hearing loss among those who reported no hearing issues (Pittman et al., 2021).

Hearing loss is the second most prevalent service-related injury among military veterans, with 2.7 million veterans receiving disability compensation or treatment for service-connected hearing loss (Hearing Loss Association of America, 2018). However, many service members still need to be made aware of the services available, and veterans must first enroll to be considered for coverage. Most Veteran Administration health benefits include coverage of ancillary services such as audiological testing. Once evaluated, many veterans may be eligible for compensation and are given the highest priority if their hearing loss or tinnitus is considered “service-connected,” meaning the condition was caused or worsened by active military service (US Department of Veterans Affairs, n.d.). According to the Department of Veterans Affairs, service members who sustain hearing loss from active service may be eligible to obtain hearing aids at no cost.

Home care clinicians interact with many individuals with undiagnosed or untreated hearing loss. More knowledge and skills would support successful communication with patients who have hearing difficulties. Many patients with hearing loss are dissatisfied with their care providers because they struggle to hear what is being said (Fook et al., 2000). One of the easiest ways home care clinicians can support patients’ hearing and improve the patient–caregiver relationship is by using effective communication strategies. It is essential to gain the patient’s full attention before

**Figure 3.** Universal hearing screener in use. Photo by author.



engaging them in conversation. Some effective strategies include reducing background noise when speaking, ensuring good lighting, and facing the listener so they can take advantage of facial cues for speechreading. Home care clinicians should speak clearly—adopting a measured pace, articulating more precisely, and using familiar vocabulary. When breakdowns occur, rephrasing what was said is better than repeating it verbatim.

Two ways home care clinicians can monitor and assess their patients’ hearing abilities include using a personal screening device or a smartphone application (Li et al., 2021). The personal screener (Figure 3) is a small, handheld device that can show which frequencies patients struggle to hear (500–4,000 Hz) when presented at a soft level. The device is held near the patient’s ear, and the patient raises their hand if they hear the tones presented. Applications such as *uHear* (Szudek et al., 2012) can be downloaded to a smartphone or tablet and used to assess hearing loss. Home care clinicians can also administer a brief screening questionnaire, such as the Hearing Handicap Inventory for Adults or the Hearing Handicap Inventory for the Elderly, which are



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validated measures that can qualify an individual's perceived hearing difficulty (Servidoni & Conterno, 2018). Although none of these screening methods should replace formal assessment, they offer simple, accessible measures at minimal cost, are easy to administer, and help home care clinicians identify potential hearing loss and give needed guidance.

### Treatment Options

The most common intervention for hearing loss is hearing aids, and studies have shown individuals who are fit early with properly programmed devices show the greatest success with treatment (Davis et al., 2007). Unfortunately, it may take the average person up to 10 years from the time they become aware of their hearing difficulty to seek treatment (ASHA, 2012). Factors that contribute to this delay include lack of understanding of the impact of hearing loss and confusion about treatment options, with stigma and the high cost of hearing aids having the greatest influence over treatment-seeking behavior (Chien & Lin, 2012).

Hearing aids are a significant cost burden, with an average price of \$4,600 per pair (Everett, 2023), with the expectation that most people will buy multiple pairs over their lifetime. Coverage through Medicare is limited and confusing. Medicare allows beneficiaries to receive a hearing exam annually, solely for the purpose of monitoring hearing. However, coverage specifically excludes hearing exams for any other reason, such as obtaining hearing aids or for the purpose of prescribing or programming hearing aids (Centers for Medicare and Medicaid Services, 2022). Even if a hearing exam shows a need for hearing aids, Medicare does not cover the cost. Those with Medicare Advantage plans may have a ben-

efit for hearing services, including hearing aids, but those plans typically provide nominal discounts. Third-party companies also require the patient to be seen by in-network providers who are often inaccessible due to distance or patient mobility issues. Some commercial insurance companies offer limited coverage or discount pricing for hearing aids, but currently, none covers 100% of the cost (Mroz, 2023).

Until recently, hearing aids could only be obtained from a licensed professional and required a formal hearing test. A trained professional, such as an audiologist, would diagnose the type of hearing loss, help select the proper devices, then program them according to the patient's prescription. Most experts agree this is a crucial part of the treatment process because audiologists are specifically trained to diagnose hearing loss and other hearing-related pathologies and help patients plan an individualized course of treatment (Kesser, 2022). Audiologists also look for "red flags" that contraindicate the use of hearing aids and may suggest need more serious medical attention.

For the last several years, there has been an increased effort to highlight hearing loss in older adults as a public health concern, with legislators pushing to broaden hearing aid access and affordability. In 2016, the President's Council on Science and Technology proposed changes to the Food and Drug Administration's (FDA) regulation of hearing aids, recommending a new category of lower-cost, readily accessible hearing aids to be sold over the counter (OTC), (Warren & Grassley, 2017). In October 2022, after significant debate among legislators and hearing industry stakeholders, the FDA approved the new category of OTC hearing aids. This legislation enabled those over age 18 with *perceived* mild to moderate hearing

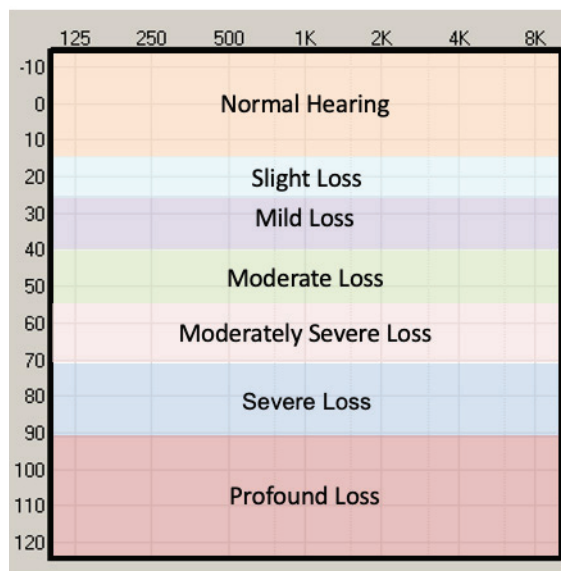
loss and no known contraindications to purchase hearing devices directly from retailers (in-person or online), without a medical exam, prescription, or fitting support from a licensed hearing care professional (FDA, 2022).

There has been much debate over whether the new OTC regulations align with best practices. Like prescription hearing aids, OTC devices make sounds louder, so users can hear and engage in their environment better. At an average cost of \$1600 per pair, OTC devices may be an effective and more affordable alternative to traditional hearing aids (Everett, 2023). However, OTC devices are restricted to adults and are not suitable for those with “greater than a moderate hearing loss” (FDA, 2022). This means the average hearing loss should not exceed 55 dB on an audiogram (Mroz, 2020), which is the graphical representation of one’s hearing sensitivity (Figure 4) showing how loud different frequencies need to be for the patient to hear (ASHA, n.d.). The issue is that most individuals do not know how to read an audiogram, nor are they aware of which decibel levels define the severity of hearing loss. They are also unable to accurately perceive their own hearing sensitivity, leading them to either underestimate their hearing abilities or overestimate their hearing loss (Tsimpida et al., 2020). Without a proper exam or programming support from a licensed professional, OTC users are potentially at risk of not receiving enough amplification to adequately address their listening needs, or over-amplifying sound, unknowingly causing more damage to their hearing.

Treatment options can be especially confusing due to the myriad differences between traditional prescription hearing aids dispensed through a hearing care professional, and OTC devices. Prescription hearing aids are available in a wide array of styles ranging from custom-fit to behind-the-ear and can be personalized to an individual’s hearing loss and specific listening needs. They offer several advanced features such as noise reduction, directional microphones for enhanced listening in noise, and wireless connectivity via Bluetooth. Most importantly, they are adjusted and verified by a licensed hearing care professional for best performance. Patients are also entitled by law to at least a 30-day trial period, during which they may exchange or return their devices for a refund.

In contrast, OTC devices are bought without the aid of a licensed professional. They must be

**Figure 4.** An audiogram showing hearing levels. Author’s own work.



self-fit, meaning the consumer selects and adjusts the devices independently, without professional support, which may result in less-than-optimal performance. OTC devices are also less advanced, offering limited features outside of volume control, and styles cannot be custom-fit, so consumers have only a “one-size-fits-most” choice. Retailers are also not bound to supply a trial period, should someone wish to return their devices. As the FDA clearance is still relatively new, the overall effectiveness of OTC devices compared to prescription hearing aids needs to be examined. However, initial trials have shown the performance of OTC hearing aids to be on par with hearing aids fit by an audiologist, suggesting that OTC hearing aids may be an effective intervention for adults with mild to moderate hearing loss, who would otherwise go without treatment (De Sousa et al., 2023).

## Conclusion

With the rising prevalence of age-related hearing loss, it is essential to recognize its pervasive effects on an individual’s physical, social, and cognitive health. Even more concerning is the increased risk of dementia that comes with untreated hearing loss, especially when hearing aids are proven to lessen that risk (Livingston et al., 2020). Home care clinicians have the unique opportunity to address these unmet needs. It is

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crucial that home care clinicians are aware of the signs of hearing loss and understand their role in screening patients for hearing loss, especially those who are older or have a history of noise exposure. Using simple, yet effective screening tools such as a universal screener or a downloadable smart device application can help find hearing loss early and allow for prompt intervention. Additionally, treatment options such as prescription hearing aids and over-the-counter devices can improve speech recognition, communication, and overall quality of life. However, patients still need guidance in navigating their options, including understanding their insurance or veteran's benefits to supplement the cost. More than anything else, using facilitative strategies such as speaking clearly, facing the patient when talking, and reducing background noise can significantly improve communication (ASHA, n.d.), and enhance the patient-caregiver relationship. Home health providers have a responsibility to prioritize hearing health in their patients and to ensure they receive the care and support needed to effectively communicate and maintain their quality of life. ■

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