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ELDER CARE

A Resource for Interprofessional Providers

Hearing Loss: Epidemiology & Screening

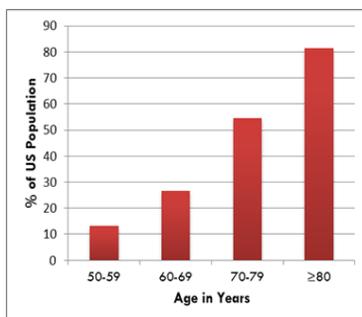
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Hearing loss is the third most common chronic condition and the primary sensory impairment in older adults, affecting 2/3 of adults over the age of 70 years (Figure 1). While hearing loss can affect all age groups, aging is considered the most important risk factor.

Although common among older adults, hearing loss is under-identified and often overlooked. Many older adults have not had a hearing test, even if they present with symptoms of hearing loss. Research on hearing-related health care indicates that the majority of the adult population has had their hearing tested 10 or more years ago or never at all. Some individuals may not recognize they have hearing loss due to slow progression of symptoms or the masking effects of other health conditions such as cognitive impairment. Many others live with symptoms without access to care.

An objective of *Healthy People 2020* is to increase the number of people referred by their primary care clinician or other health care provider for diagnostic hearing evaluation and treatment.

Figure 1. Hearing Loss Increases with Age.
Data shown are for prevalence of hearing loss >25 dB HL in both ears (averaged across .5, 1, 2, 4 kHz). Data from Goman, et al., 2016



A widespread misconception is that people with hearing loss will have hearing aids. More likely, however, older adults with hearing loss will not have accessed hearing health care. In fact, it is estimated that 67-86% of people with hearing loss that could benefit from hearing aids do not use them. There are also racial disparities: Blacks and Mexican-Americans with hearing loss are significantly less likely to use hearing aids.

Hearing Loss and Quality of Life

Developing hearing loss as an adult has significant negative effects on speech communication and memory.

Communication plays an important part in receiving healthcare information and can become more difficult with increasing severity of hearing loss.

Hearing loss is also associated with decreased activities of daily living, and can impair quality of life by increasing loneliness, depression, social isolation, and cognitive decline.

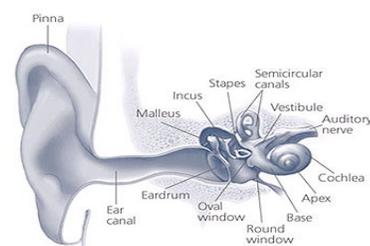


Figure 2. The Auditory System
Source: NIH/NIDCD

Forms of Hearing Loss

Diagnostic assessment of hearing can differentiate between the three major forms of hearing loss: conductive, sensorineural, and mixed loss.

Conductive hearing loss is caused by abnormalities in the middle and/or external ear that affect the mechanics of the ear (e.g., perforated eardrum, fluid in the middle ear). Often, this type of hearing deficit can be corrected with surgical or medical interventions, making it important to identify.

Sensorineural hearing loss, caused by damage to the cochlea or neural system, is the most common cause of hearing loss in older adults. When associated with aging, it is known as presbycusis. It occurs gradually, is bilateral, and is most often characterized by difficulty in hearing high-frequencies. A common early sign is difficulty communicating in social settings with background noise.

Mixed hearing loss occurs when an individual has both sensorineural and conductive hearing loss. For example, when someone with presbycusis may also have a cerumen impaction and/or a perforated ear drum.

TIPS

- Most older adults have not had their hearing tested and hearing aid use is very low (only ~20%)
- Even a single question about hearing loss can accurately identify individuals experiencing symptoms
- Regularly conduct otoscopy to examine for ear pathology or cerumen
- Refer appropriately for diagnostic hearing testing
- Use the HHIE-S to assess readiness for hearing loss treatment (<http://www.uspreventiveservicestaskforce.org>)

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What if an Older Adult has Concerns about Hearing Loss?

In addition to addressing signs or symptoms observed during clinical encounters, health care professionals should also ask caregivers and family members about hearing or communication. In fact, family members commonly notice communication breakdowns even before the individual with hearing loss notices them.

Refer any patient reporting hearing-related symptoms or risk factors such as tinnitus (ringing or noise in the ears) to an audiologist or otolaryngologist for a diagnostic hearing evaluation. Examine ears for pathology or cerumen, but keep in mind that otoscopy will not reveal hearing status as there are no visible signs of sensorineural loss on ear exam.

Also note any medications that may be ototoxic agents (e.g., loop diuretics, aminoglycosides, cis-platin) during medication review and consider discontinuing them if possible.

While the US Preventive Services Task Force (USPSTF) does not recommend hearing screening for asymptomatic older adults, the Task Force cautions that aging is the most important risk factor for hearing loss and that should hearing loss be a concern, various hearing assessments are available to clinicians that can successfully identify individuals in need of a formal diagnostic hearing evaluation.

There are two approaches to hearing assessment that the USPSTF identified as having good accuracy. The table below provides details about the assessment options.

One approach is a self-report of hearing ability, identified either with a single question (“Do you feel you have a hearing loss?”) or with a self-administered questionnaire such as the Hearing Handicap Inventory for the Elderly-Screening (HHIE-S). The HHIE-S is available at www.uspreventiveservicestaskforce.org/Home/GetFileByID/231

The other is an assessment using a handheld audioscope or portable audiometer that measures the ability to hear sounds at different frequencies (in Hz) and at particular intensities (in decibels, dB).

Diagnostic Hearing Tests

For patients who require further evaluation based on the above assessments or for other reasons, Medicare Part B covers diagnostic hearing examinations. In some states, Medicare Advantage plans and Medicaid also cover diagnostic evaluations. Check on which services are covered in your area. Collaborate with audiologists for an interprofessional approach for older adults with hearing loss. Medicare does not, however, cover hearing aids.

Hearing Loss Screening Tests			
Screening Test	Details	Strengths	Weaknesses
Single Question: “Do you feel you have a hearing loss?”	Health professionals often use a single question to identify individuals to refer for diagnostic evaluation	<ul style="list-style-type: none"> Quick and easy Fairly accurate (71% sensitivity & specificity for adults to age 92 years; 76% sensitivity and 73% specificity in Spanish) 	<ul style="list-style-type: none"> Subjective Does not detect impact of hearing loss on daily life Men tend to be less likely than women to self-report trouble hearing
Hearing Handicap Inventory for the Elderly-Screening Questionnaire (HHIE-S)	A 10-item, 3-5 minute questionnaire that measures the degree of impact on social and emotional functioning from hearing loss	<ul style="list-style-type: none"> Detects impact of hearing loss Translations available in multiple languages Excellent specificity but poor sensitivity (92% specificity & 36% sensitivity for hearing loss detection for pure tone average thresholds > 25 dB HL) 	<ul style="list-style-type: none"> Less sensitive to early disease Does not detect physiologic loss Use a different version of the questionnaire for adults under 65 years
Audioscope (e.g., Welch Allyn)	Handheld combination otoscope and audiometer that measures the ability to hear sounds at different pitches and volumes	<ul style="list-style-type: none"> Excellent sensitivity (≥ 94%) and good specificity (69-80%) for hearing loss In one study, patients preferred audioscope over HHIE-S 	<ul style="list-style-type: none"> Only detects physiologic loss May not identify patients who are motivated to seek treatment

References and Resources

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Interprofessional care improves the outcomes of older adults with complex health problems.

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