

Causes and Management of Hearing Disorders

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Purpose

To explain the major classifications of hearing loss and their characteristics.

Chapter Topics

- Types of Hearing Loss
- Conductive Hearing Loss - Outer Ear
- Conductive Hearing Loss - Middle Ear
- Sensorineural Hearing Loss
- Mixed Hearing Loss
- Pseudohypacusis
- Hearing Aids

Occupational hearing conservationists (OHCs) are not expected to diagnose hearing problems (unless they have had professional training in otology or audiology). However, understanding the causes and treatments of ear and hearing disorders makes an OHC's work more meaningful and clarifies his or her role in hearing conservation. Some workers have complex auditory problems, and it is vital that an OHC handle them knowledgeably.

Types of Hearing Loss

For our purposes, hearing loss is divided into 2 main types: conductive and sensorineural. **Conductive** hearing loss is a breakdown or obstruction in the transmission system in the **outer** and/or **middle ear**. In most instances, these problems are reversible, and hearing is restored or stabilized by appropriate treatment. **Sensorineural** hearing loss results from changes in the receptor **hair cells** in the **inner ear** and/or in the nerves carrying impulses to the brain. These losses are often permanent and cannot usually be medically or surgically corrected. Many people with hearing loss derive some benefit from hearing aids and hearing therapy or **aural rehabilitation**, such as auditory training and speech (lip) reading. **Table 5-1** shows a simplified overview of the basic types of hearing loss.

In conductive hearing loss, the conduction of sound through the outer and/or middle ear is impeded, perhaps by something as simple as an obstruction by **cerumen** (earwax) or a foreign object. When we successfully fit hearing protection, we purposefully create a conductive hearing loss.

A conductive hearing loss can result from an infection of the tissue in the outer ear (**otitis externa**) or a perforation of the **tympanic membrane** (TM). Some people are born with very small or missing **ear canals** that impede sound transmission.

Table 5-1. Simplified overview of the characteristics of different types of hearing loss. Table should be used as an introductory overview; it does not reflect all the complexities of hearing loss.

Type of hearing loss	Part of ear affected	Symptoms	Most common audiometric configuration	Most common remediation
Conductive	Outer ear Middle ear	Sounds are quiet Tinnitus	Low-mid frequency	Medical Surgical Hearing aid
Sensorineural	Inner ear Auditory nerve Brain	Sounds are quiet and distorted Tinnitus	High frequency	Hearing aid
Mixed	Combination of any conductive and any sensorineural hearing loss	See above	Partial conductive Partial sensorineural	Medical Surgical Hearing aid
Pseudohypacusis	N/A	Inconsistent or exaggerated hearing loss	Exaggerated or inconsistent	Referral Specialized audiometric assessment