

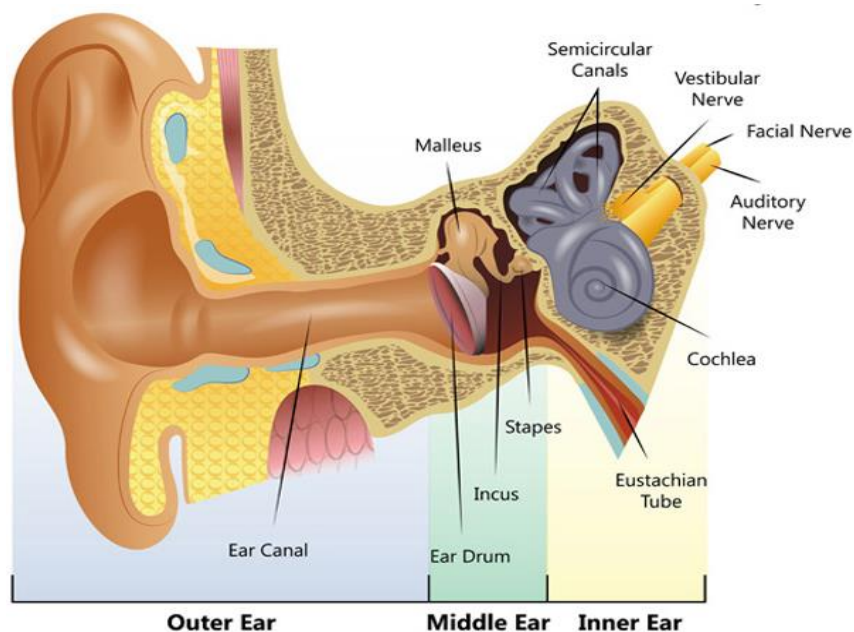
Hearing Impairment

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Overview

A brain injury can cause hearing difficulties because of physical damage to the ear itself or damage to the neurologic processes in the brain that control hearing.

As you can see in the diagram below, the ear is broken down into three sections: outer, middle, and inner ear. The **outer ear** protects the more fragile parts inside. The **middle ear** begins with the ear drum, which sends vibrations to the three small bones behind it. The **inner ear** has a tube called the cochlea where the neurological hearing processes begin. The trauma from a traumatic brain injury (TBI) most commonly affects the physical ear due to a burst ear drum, any of the small bones breaking, or bleeding/bruising in the middle ear. Damage to the parietal or temporal lobes of the brain can disrupt in the neurological hearing processes.



Common Types of Impairments

- Tinnitus: Usually caused by damage to the physical ear. Persons will hear a buzzing, hissing, or ringing in the ears that is worsened by loud noises, high stress, caffeine, alcohol, nicotine, and other specific drugs/medications
- Sensorineural hearing loss (SNHL): Caused by damage to the inner ear, specifically the nerve pathways from the inner ear to the brain. It can affect the clarity of sounds (muffled or unclear) and soft sounds may be hard to hear at all
- Hyperacusis: Usually caused by trauma to the inner ear which results in a reduced tolerance to sound (increased sensitivity). It can make ordinary sounds too loud, while loud sounds can cause extreme discomfort and pain
- Meniere's Syndrome: Caused by excessive pressure in the inner ear which can result in hearing loss, ringing in the ears, vertigo (feeling of motion/spinning), and a sensation of pressure in the ear

Tips

Steps to take to lessen the effects of many hearing problems:

- Avoid noisy and stressful environments when possible.
- Talk to trusted friends and professionals about the issues.
- Exercise regularly.
- Eat healthy (reduce salt intake if you have fluid pressure in the ear).
- Listen to gentle music to cover constant noise (caused by tinnitus).
- Sleep well
- Stop or limit use of drugs such as coffee, nicotine, and alcohol.

The Brain Injury Association of Virginia provides personalized information and referral assistance to clients and their families and technical assistance to professionals. For information on these services, contact the Brain Injury Association of Virginia. See contact information below.

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