

Cochlear Implants in the Elderly

Recognizing a Frequently Missed Demographic of Surgical Candidates for Hearing Restoration



Holly J. Baker, MHS, PA-C^{a,b,*}, Robert T. Sataloff, MD, DMA^c

KEYWORDS

- Cochlear implants • Presbycusis • Conventional hearing aids
- Age-related hearing loss • Hearing amplification • Speech discrimination

KEY POINTS

- Cochlear implants may be an attractive option for elderly patients diagnosed with hearing impairments who no longer benefit from conventional hearing aids.
- Cochlear implants differ from conventional hearing aids in that they not only improve communication, but deliver adequate amplification to improve word understanding and speech discrimination.
- Elderly patients should be educated about evolving candidacy criteria, benefits on speech and overall quality of life, and the minimal risk associated with the procedure.
- Providers have a responsibility to inform patients of all treatment options, including cochlear implants.

HEARING LOSS: AN OVERVIEW

Hearing loss remains a major public health issue in the United States and is ranked third after arthritis and heart disease.¹ Hearing loss can affect people of all ages, varies in progression from mild to profound loss, and is caused by several different etiologies. The hearing pathway is a complex pathway that changes sound waves into electrical signals sent to the auditory nerve that carries these signals to the brain. Sound waves enter the outer ear and travel through the ear canal to the eardrum. The sound waves cause vibration of the eardrum, which sends the

No Disclosures.

^a Otolaryngology–Head and Neck Surgery, ENT and Allergy Specialists, 825 Old Lancaster Road, Suite 300, Bryn Mawr, PA 19010, USA; ^b Department of Otolaryngology–Head and Neck Surgery, Drexel University College of Medicine, 2900 West Queen Lane, Philadelphia, PA 19129, USA; ^c Department of Otolaryngology–Head and Neck Surgery, Drexel University College of Medicine, 219 North Broad Street, 10th Floor, Philadelphia, PA 19107, USA

* Corresponding author. 219 N. Broad Street The Arnold T. Berman, MD Building, 10th Floor Philadelphia, PA 19107.

E-mail address: HJP1487@gmail.com

Physician Assist Clin 3 (2018) 223–234
<https://doi.org/10.1016/j.cpha.2017.12.004>

physicianassistant.theclinics.com

2405-7991/18/© 2017 Elsevier Inc. All rights reserved.

vibrations to the bony ossicles within the middle ear (malleus, incus, and stapes). Vibrations from the ossicles are transmitted into the fluid-filled cochlea known as the inner ear, stimulating the cochlear hair cells, which generate electrical signals for the auditory nerve.

The 3 types of hearing loss are sensorineural, conductive, and mixed hearing loss. Sensorineural hearing loss is described as a “nerve loss” and can result from damage to parts of the inner ear, the auditory nerve, or cerebral hearing processing. Sensorineural hearing loss can also be caused by prolonged exposure to loud noise, head injury, infection, prescription drugs, and many other etiologies.^{2,3} Rates of progression vary, and this type of hearing loss generally cannot be medically or surgically restored at this time. Conductive hearing loss is described as a “bone conduction” loss and occurs when sound is not conducted efficiently through the outer or middle ear structures. Conductive hearing loss can be caused by fluid in the middle ear, otitis media, allergies, Eustachian tube dysfunction, perforated eardrum, benign tumors of the middle ear, cerumen impaction, foreign body obstructing the ear canal, or malformation of the outer ear, ear canal, or middle ear. Conductive causes of hearing loss can often be corrected medically or surgically. Last, mixed hearing loss is a combination of sensorineural hearing loss and conductive hearing loss² (Fig. 1).

SENSORINEURAL HEARING LOSS AND THE ELDERLY POPULATION

According to the National Institutes of Health, approximately 15% of American adults (37.5 million) aged 18 years and over report some degree of hearing loss. With age being the strongest predictor of hearing loss among adults aged 20 to 69 years, those with the greatest amount of hearing loss fall in the range of 60 to 69 years of age.⁴ Given the aging population of Baby Boomers in the United States and

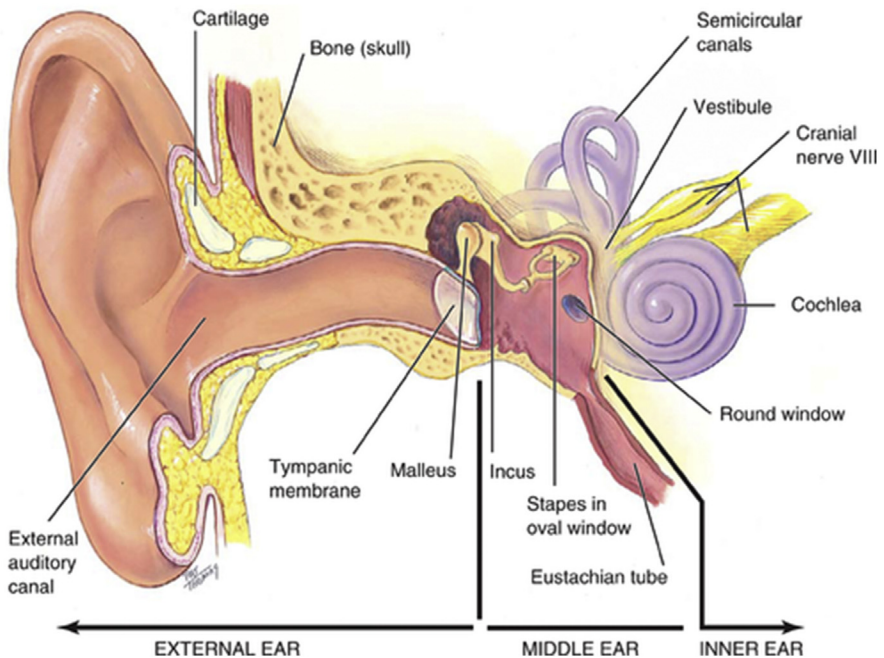


Fig. 1. Anatomy of the ear. (From Jarvis C. Physical examination and health assessment. 5 edition. Philadelphia: Saunders-Elsevier; 2008; with permission.)

Download English Version:

<https://daneshyari.com/en/article/8765693>

Download Persian Version:

<https://daneshyari.com/article/8765693>

[Daneshyari.com](https://daneshyari.com)