

Comprehensive EAR & HEARING

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Physician's Update

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Formerly Grand Haven and Zeeland Ear & Hearing

Heart Disease and Hearing Loss

By Cari Marzolf, MA, CCC-A

The American Heart Association lists heart disease as our nation's number one killer. According to the Better Hearing Institute, 25% of adults in the US demonstrate some degree of hearing loss. A link between heart disease and hearing health has long been suggested and in a recent study published in the June 2010 issue of the American Journal of Audiology, Raymond H. Hull and Stacy R. Kerschen reviewed 60 years of research on just that subject. Results showed a negative influence of impaired cardiovascular health on both the peripheral and central auditory system as well as the potential positive influence of improved cardiovascular health on these same systems.

Without getting into the definition of "heart disease" or the intricacies of the auditory system, one point must be mentioned: any restriction of oxygen-laden blood supply to the stria vascularis of the cochlea, i.e. cardiovascular disease, would likely impair optimal function of the peripheral auditory system. With this in mind, Hull and Kerschen looked at several areas of influence. The following is a partial list.

The Influence of Cardiovascular Health on the Viability of the Auditory System

After citing several studies correlating the restriction of blood supply to the cochlea with hearing loss, one study was noted as finding that "adults between 65 and 85 years with cardiovascular disease and signs of peripheral circulation disorders had significantly poorer thresholds ...compared to other participants of the same age without cardiovascular disease."

Hearing Loss as an Early Marker of Cardiovascular Disease

People with heart disease were eight times more likely to demonstrate a hearing loss than those without heart disease. Further, the same study noted hearing loss consistently precedes signs of heart disease. Thus, hearing loss can be an important early marker of cardiovascular disease. Hearing testing may actually be a possible screening tool for such a condition.

Hypertension

Results revealed a significant association between systolic blood pressure and hearing loss, particularly in the mid frequencies – a 32% greater risk of hearing loss for every 20 mm Hg increase in systolic pressure.



Cardiovascular Fitness and the Auditory System

All the papers studied by Hull and Kerschen consistently revealed a positive influence of cardiovascular fitness on hearing impairment. One study indicated an increased resistance to noise induced hearing loss in individuals who are physically fit. Further, this same effect was seen in individuals without noise exposure. Increased muscle strength along with cardiovascular fitness also enhanced maintenance of hearing sensitivity. Best of all, good cardiovascular health supports hearing sensitivity at all ages, but was greatest in the 80+ year old group!

Similarly, improved cardiovascular fitness positively impacted central auditory processing abilities as well as neurocognition. Only small increases in aerobic fitness resulted in improved executive functioning. Great news for those who don't like to exercise!

In conclusion, cardiovascular health and hearing appear closely linked. Not only can early detection of hearing loss be an early indicator for heart disease, but improving an individual's cardiovascular fitness can positively impact their hearing as well as possibly improve their cognitive abilities. Please read the full Hull and Kerschen article for all the details and contact our office to schedule hearing tests for any patients you may suspect heart disease.

References

Hull R H, Kerschen S R. The Influence of Cardiovascular Health on Peripheral and Central Auditory Function in Adults: A Research Review. American Journal of Audiology. Vol. 19 9-16 June 2010.

Cari Marzolf has 15 years experience as a clinical audiologist specializing in hearing loss diagnostics, treatment and amplification for all ages.



Please refer any patients you suspect may have a hearing loss to one of our offices for a complete audiological evaluation!



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Monday - Friday 8:30am - 5 pm
After hours appointments available by request.

Cerumen Management

By Cari Marzolf, MA, CCC-A, Clinical
Audiologist at Comprehensive Ear & Hearing

With newer hearing aid technology fitting deeper in the ear canal, cerumen management has become even more important. Even with the traditional styles of hearing aids (full size in-the-ear and behind-the-ear) even a small amount of wax in the ear can create problems. Feedback, or whistling, from the hearing aid happens when the amplified sound being directed down the ear canal “hits” the wax and is redirected back through the microphone. Wax can also impede the flow of sound down the canal without causing feedback, even if the tympanic membrane is visible. Additionally, wax toward the opening of the canal can become lodged in the end, or receiver, of the hearing aid significantly reducing function of the aid.

Several methods exist for cerumen removal:

Q-tips are fine for removing anything on the outside edge of the ear canal opening. Any deeper and you run the risk of pushing the wax in further.

Curettes are instruments used to remove wax deeper in the canal. They work great on soft to hard wax masses as long as the wax is not attached to the tympanic membrane. If the wax is attached to the canal wall, softening drops used a few days before removal may ease the process and make things more comfortable for the patient.

Vacuum or suction is a method using a suction tube and a suction pump. This technique can be used on wax ranging from soft to medium. It is also the safest and fastest method.

Lavage or irrigation can be used on various types of wax as well, but its effectiveness relies on there being a small gap between the wax and the canal. The water is directed past the wax via the gap so that it indirectly hits the eardrum and then the return flow washes out the wax. This can be a messy method and you have to catch the water as it flows out of the ear. The procedure may need to be repeated to remove all the wax. Contraindications to this method are patients with a history of perforations, large or small.

References

Lowell A L, Valdes L M. Cerumen Management Requires Skill, Knowledge, and a Cautious Approach. Hearing Journal. Vol. 63 28, 30, 32 March 2010.

When in doubt, or if complications are encountered, a referral to an ENT is recommended.

Dr. Terry DeGroot is available at all three office locations for Medical Ear & Hearing Care including Cerumen Management.

