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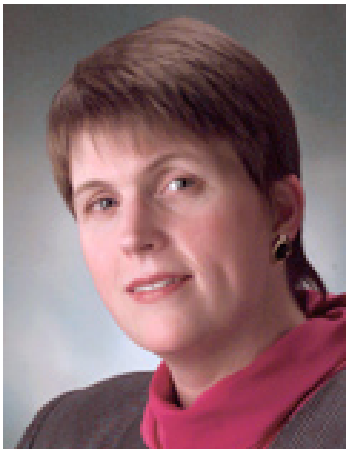
The **Center for Audiology and Hearing Aids** at UPMC performs routine and specialized care and evaluations for hearing loss and related conditions. The Center also provides access to hearing aids, cochlear implants, and other assistive listening devices, as well as care for permanent hearing loss and tinnitus. Dr. Catherine Palmer is the Director of the Center, and her research efforts include making hearing aid treatment accessible and affordable through evidence-based practice and investigating adaptation in the adult brain due to gradual hearing loss and subsequent amplification. The impact of untreated and treated hearing loss caused by noise, ototoxic medications, and age on quality of life is critical to the UPMC Center for Audiology.



AUDIOLOGY RESEARCH – NEW RESEARCH TO PROTECT AND RESTORE HEARING

Protecting the Hearing of Young Musicians is a crucial goal to the UPMC Musicians' Hearing Center, a part of the Center for Audiology. Though it is widely known that professional musicians can suffer hearing loss over time due to high levels of noise exposure, it is not as broadly understood that young school age band and orchestra students suffer the same risks of long term permanent hearing damage and ringing in the ears.

Our Center has endeavored to distribute musician earplugs to local schools along with free educational programs, in order to protect students' hearing and educate schools on the problems associated with long term noise exposure. Our research in this area also impacts the future design of improved hearing protection for all noise exposed individuals.

Giving through the Eye & Ear Foundation is essential to continuing innovative work. While the research and programs of many of our physicians and scientists are supported by the National Institutes of Health (NIH), NIH funding has fallen 13 percent since 2004, when adjusted for inflation. Considering this downtrend in funding levels and costs traditionally not covered by NIH funding, philanthropic support it necessary to continue these efforts.

The Center for Audiology and Hearing Aids pursues many innovative and state-of-the-art research projects, with the goal of enhancing patient care and treatment to the highest level. To find out how to give to the Center, contact the Eye & Ear Foundation at (412) 864 – 1300, or find us online at www.eyeandear.org.

Adaptation in Adults with Gradual Hearing Loss is another field of our research efforts. The Center for Hearing is currently involved in a series of investigations that examine the ability of the adult auditory system to adapt to amplification after having a gradual, progressive hearing loss which is common as we age. One of the reasons for poor acceptance of amplification is that individuals find that sounds are too loud and cannot be tolerated. Our research reveals that the impaired auditory system has the ability to adapt to some sounds and not others. Further understanding in this area should improve our ability to fit amplification individually for patients and ensure optimum use of their hearing aids.

Hearing Loss and Cognition

There has been a rise of reports about the connection between Hearing Loss and Cognition. New findings have suggested that untreated hearing loss has a strong relationship with dementia. The Center for Hearing has been investigating this connection and the positive impact of treated hearing loss and cognition since the mid-1990's. Our future work will focus on access and affordability of hearing health care for individuals in independent, assistive, and long-term care residencies.

Ototoxic Medications are drugs that are used in the treatment of Cancer or other life threatening diseases that are toxic to the auditory system. A side effect of survival is sometimes significant hearing impairment and ringing in the ears. The Center's goal is to set up an infrastructure that would focus on quality of life after treatment, by pairing up an audiologist with a patient at the beginning of their cancer treatment, thus allowing a relationship to develop and an assurance to the patient that a healthcare professional is providing care for post-treatment issues. This service delivery model also will allow for research to be conducted related to new treatments that are being applied that may preserve hearing through the course of ototoxic treatment. Only with this type of hearing testing can we determine what preventive treatments may work to preserve hearing while not impacting the treatment of the disease adversely.

Cochlear Implants are miraculous devices, restoring hearing to profoundly deafened individuals. Although many users of the devices can carry on conversations, even on the telephone, their ability to understand speech is often negatively impacted by the presence of background noise, either from the environment (like traffic, or air conditioners) or from other talkers (in a crowded restaurant, for example). While we all have a harder time understanding speech in noise, it is particularly challenging for cochlear implant users, and they often show dramatic declines in even minimal amounts of noise. Work ongoing in our psychoacoustics lab is designed to help solve this problem. We draw from various fields, including electrical engineering, signal processing, linguistics, hearing science, and auditory cognitive neuroscience to find ways of improving speech understanding for these individuals.