



HEARING LOSS

VA researchers, engineers, and clinicians are studying ways to prevent, diagnose, and treat hearing loss, addressing a wide range of technological, medical, rehabilitative, and social issues. Much of VA's research in this area takes place at the National Center for Rehabilitative Auditory Research (NCRAR) in Portland, Ore. (www.ncrar.research.va.gov). The innovative work at this site includes, for instance, a study on traumatic brain injury and auditory processing, and another on computerized auditory training for hearing aid users.

EXAMPLES OF VA RESEARCH ADVANCES

TINNITUS MORE COMMON IN VETERANS—Male Veterans are more likely than non-Veterans to have tinnitus, or ringing in the ears. A Portland, Ore., VA team analyzed national data on more than 2,000 Veterans and about 5,000 non-Veterans, all aged 20 or older. Overall, 11.7 percent of Veterans reported tinnitus, compared with 5.4 percent of non-Veterans. The highest reports of tinnitus were in 60- to 69-year-old men; 17.9 percent of these Veterans and 11.7 percent of non-Veterans in this age group reported the symptom. The most common cause of tinnitus is noise-induced hearing loss, though it also can result from ear infections or aging, or as a side effect of some medications.

TBI LINKED WITH AUDITORY IMPAIRMENT—Nearly two-thirds of Veterans with traumatic brain injury may have some form of auditory impairment. A large team of VA researchers reviewed records from more than 21,000 Veterans who were evaluated for TBI between October 2007 and June 2009. About 35 percent of them reported both visual and auditory problems; another 31 percent reported auditory problems but not visual impairments. Veterans with TBI and a history of blast exposure had the highest rate of dual visual/auditory impairment.

TESTING INTERVENTIONS—NCRAR and the James Haley VAMC in Tampa are testing two interventions for Veterans with auditory processing problems. One, a frequency modulation (FM) system, uses radio waves to transmit signals directly from a microphone to an earpiece to make a speaker's voice clearer, relative to other sounds. The second, a "brain-training" computer program, leads users through tasks that involve following spoken instructions or interpreting sounds. Each of 128 Veterans in the study is randomly assigned to one of four groups. All four groups will receive educational counseling. In addition, one group will receive the FM system for eight weeks. A second group will use the computer program for the same period. A third group will use both the FM system and the computer program. The researchers hope to learn which combination of interventions is most effective.

★ **FACTS ABOUT HEARING LOSS**—*Hearing loss affects some 28 million Americans, including more than half of those over age 75. The most common cause of hearing loss is exposure to harmful levels of noise, either in military or civilian settings. Other possible causes include allergies, infections, drugs, genetic factors, or aging. Some hearing loss can be reversed through surgery or medication. In other cases, hearing loss is permanent but can be reduced through the use of hearing aids. Though almost all people with hearing loss could be helped by hearing aids, only about one in five uses them. Noise-induced hearing loss and tinnitus are among the most common disabilities affecting Veterans. As of 2010, about 1.5 million Veterans had service-related auditory problems; most have either hearing loss or tinnitus.*