



## Vision Loss

One of the most exciting areas of VA research in this field is the development of an artificial retina to restore vision to those affected by macular degeneration or retinitis pigmentosa. VA researchers are also working to improve or design new assistive devices for the visually impaired, and to develop more accurate and efficient methods of vision assessment.

### *Examples of VA Research Advances*

**Vision and traumatic brain injury** – In a Palo Alto VA study involving 68 Veterans with moderate to severe traumatic brain injury and 124 with mild TBI, most of the those in both groups—78 and 98 percent, respectively—had normal or near-normal visual acuity—that is, they could read the letters or numbers on eye charts or cards. However, about three-quarters of the Veterans across both groups reported vision complaints, and many of them tested positive for vision problems. For instance, more than 4 in 10 Veterans had convergence insufficiency, which affects how the eyes work at close distances. Often missed on basic eye exams, the condition causes eye strain, blurred or double vision, and headaches. Most of the brain injuries in both groups were the result of blasts.

**New research center** – The Center for the Prevention and Treatment of Visual Loss, led by Dr. Randy Kardon, at the Iowa City VA Medical Center, will focus on early detection and treatment of potentially blinding conditions and injuries. Dr. Kardon's team will test new ways to detect early signs of disease progression and response to treatment. They will also develop therapies that involve natural proteins called growth factors. Work at the center will also explore the use of telemedicine for diagnosis and monitoring.

**Cognitive impairment may impact rehab** – Researchers with VA and Duke University found a high prevalence of problems with verbal fluency and memory among 101 older adults with macular degeneration who were referred for low-vision rehabilitation. Special strategies may be required to maximize the success of rehab in this population, say the investigators.

### Facts About Vision Loss

VA estimates that by 2010 there will be nearly a million Veterans coping with severe visual impairment. In older Veterans, major causes of vision loss include age-related macular degeneration, glaucoma, cataracts, stroke, and diabetic retinopathy. Many of these Veterans are helped through VA's extensive network of Low Vision Rehabilitation programs. Among the newest generation of war Veterans, many of those who have suffered brain injuries as the result of blasts also experience vision problems, such as blurred vision, double vision, sensitivity to light, and difficulty reading. One study at a VA polytrauma center found that 38 percent of patients had a visual impairment; in those injured by blasts, the figure jumped to 52 percent.

