



# ALZHEIMER'S DISEASE

*Areas of focus for VA research on Alzheimer's disease include finding potential drug therapies for prevention and treatment, exploring the genetic and environmental causes of the disease, studying the best ways to provide long-term care, and evaluating new programs to support caregivers. Additionally, VA researchers are working to better understand the connection between Alzheimer's and other chronic diseases, such as diabetes.*

## EXAMPLES OF VA RESEARCH ADVANCES

**BLOOD TEST FOR ALZHEIMER'S RISK?**—Older people whose blood contains low levels of a protein-like substance called beta-amyloid 42 are at risk for cognitive decline. This research, led by a San Francisco VA team, could result in a blood test to help gauge dementia risk. The study included 997 people from Memphis and Pittsburgh. About half were African American, and about half were women. The average age at the start of the study was 74 years. Those with the lowest beta-amyloid 42 levels had the greatest cognitive decline over nine years. The association was strongest in people with low education and literacy levels. Beta-amyloid 42 is known to collect in the brains of people with Alzheimer's disease. Low levels in the blood or spinal fluid indicate high levels in the brain. An experimental spinal fluid test for beta-amyloid 42 already exists, but a blood test would be easier, less invasive, and less expensive.

**DRUG SLOWS BRAIN DEGENERATION**—The drug memantine appears to slow the degeneration of part of the brain in people with Alzheimer's. San Francisco VA researchers followed 47 people who took memantine for nearly a year. MRI results showed that the drug did not slow changes in total brain volume, ventricular volume, or left hippocampal volume. However, it did slow losses in right hippocampal volume. The hippocampus is involved in memory and navigation. In people with Alzheimer's disease, it is one of the first brain regions to suffer damage. In this study, people taking memantine lost 5.5 percent of right hippocampal volume, compared with a 10.8 percent loss in people not taking the drug. People taking memantine also had better scores on a test of executive functioning and a test of naming ability. Memantine, which blocks the activity of a neurotransmitter called glutamate, is approved for the treatment of moderate to severe Alzheimer's disease. It is also being tested for more than a dozen other conditions.

**SLEEP DISRUPTIONS NOT TIED TO BIOLOGICAL CLOCK GENES**—The breakdown in sleep patterns that often occurs in people with Alzheimer's disease appears unrelated to genes involved in circadian rhythms, say Palo Alto, Calif., VA researchers. They collected a week of data on sleep/wake patterns in 300 Veterans with Alzheimer's disease. They also did genetic studies to look for relationships between sleep/wake patterns and 122 genes that help to control the biological clock. They found no links.

★ **FACTS ABOUT ALZHEIMER'S DISEASE**—*One of the most common forms of dementia is Alzheimer's disease. In this condition, nerve cells in the brain deteriorate. This affects thoughts, memory, and language. Symptoms range from mild forgetfulness to the inability to perform everyday tasks. Alzheimer's is estimated to affect some 5.4 million Americans; one American develops the disease every 69 seconds. By 2050, about 16 million people will be affected. Alzheimer's disease is the sixth leading cause of death in the United States, with annual direct and indirect costs of care estimated at \$183 billion.*