PARKINSON'S DISEASE

VA has six Centers of Excellence focused on Parkinson's disease, based in Houston, Philadelphia, Portland, Richmond, San Francisco, and Los Angeles (www.parkinsons.va.gov). Researchers at these sites are studying the biochemical pathways involving dopamine—a brain chemical implicated in Parkinson's disease—and testing a variety of treatment approaches, including medication, surgery, various forms of exercise, and electrical stimulation. Biomedical and clinical studies on Parkinson's disease are ongoing at many other VA sites, as well.

EXAMPLES OF VA RESEARCH ADVANCES

SOME GENETIC LINKS CONFIRMED, OTHERS NOT—Researchers from the VA Puget Sound Health Care System sought to replicate studies that had confirmed two known risk genes (MAPT and SNCA) for Parkinson's disease and identified three new ones that may be linked with risk (PARK16, PARK17, and PARK18). The study involved 1,445 people with Parkinson's disease and 1,161 controls. The scientists found significant associations between MAPT and SNCA and Parkinson's disease. However, they did not find that PARK16, PARK17, or PARK18 were associated with the disease. The new study involved volunteers in northern Spain, with VA researchers collaborating with scientists from six Spanish institutions, including hospitals and universities.

BRAIN IMAGING SHOWS DISEASE SIGNATURE—Functional MRI may be used to help diagnose and evaluate Parkinson's disease, says a Gainesville VA research group. They imaged the brains of 15 people with Parkinson's disease and 15 people without it. Those with Parkinson's disease had lower brain activity in certain regions, including the supplementary motor cortex, the mesial prefrontal cortex, the right middle frontal gyrus, and the left cerebellum. Parkinson's patients also had increased activity in the right cerebellum. Using the imaging, the team could predict which patients had Parkinson's disease about 92 percent of the time and predict which patients did not about 87 percent of the time. One of the control patients later developed Parkinson's disease; the MRI predicted the disease before symptoms appeared.

VITAMIN D AND PARKINSON'S—Vitamin D insufficiency is common in patients with a recent onset of Parkinson disease, say Atlanta VA researchers. However, vitamin D concentrations do not appear to decline during the progression of the disease. The team examined the prevalence of vitamin D insufficiency in untreated patients with early Parkinson's disease. At their first study visit, about 70 percent of patients had vitamin D insufficiency (a blood concentration between 20 ng/ml and 30 ng/ml), and 26 percent had vitamin D deficiency (less than 20 ng/ml). By the final visit of the study, those percentages had dropped to 52 percent and 7 percent. The authors suggest that long-term vitamin D insufficiency may play a role in the onset of Parkinson's disease.

★ **FACTS ABOUT PARKINSON'S DISEASE**—*Parkinson's disease is a disorder of the central nervous system resulting in rigidity of the muscles, delayed movement, poor balance, and tremors. It affects as many as 1.5 million Americans, mostly people over age 50. Some 50,000 new cases are diagnosed annually. About 80,000 Veterans have Parkinson's disease, which is characterized by the death of dopamine-producing cells in the brain. Experts suspect that a combination of genetic and environmental factors is responsible for this loss. Large-scale VA clinical trials have played a key role in documenting the benefits of deep brain stimulation for Parkinson's patients for whom medication alone is no longer effective.*