



# Parkinson's Disease

VA Research has six Centers of Excellence focused on Parkinson's disease, based in Houston, Philadelphia, Portland, Richmond, San Francisco, and Los Angeles. 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, and electrical stimulation.



## *Examples of VA Research Advances*

**VA-NIH trial backs brain implants for some patients** – Deep brain stimulation—a treatment in which a pacemaker-like device sends pulses to electrodes implanted in the brain—is riskier than drug therapy but may hold significant benefits for those with Parkinson's disease who no longer respond well to medication alone, reported researchers with VA and the National Institutes of Health who conducted a six-year study comparing deep brain stimulation with “best medical therapy.” The trial, the largest of its kind to date, included 255 patients at seven VA and six university sites. Significantly, the trial included patients ranging in age from 37 to 83 and found that older patients—a group typically excluded from brain stimulation research and treatment—did about as well as younger ones with deep brain stimulation.

**Impaired sense of smell could figure in early detection** – Validating the results of some earlier studies, a team led by researchers at the Honolulu VA Medical Center showed that an impaired sense of smell—long known to be an early sign of Parkinson's—may in fact precede key symptoms of the disease by at least four years.

**Adult stem cells may replace depleted brain cells** – VA researchers in Richmond are exploring the use of adult stem cells that, when transplanted into the brain, may transform into dopamine-producing neurons to help combat Parkinson's.

**Possible link to toxins** – VA researchers are studying whether exposure to neurotoxins may trigger Parkinson's.

## 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. VA treats at least 40,000 Veterans with this debilitating disorder each year. Parkinson's patients have a progressive loss of the brain chemical dopamine, caused by the death of dopamine-producing nerve cells. Experts suspect that a combination of genetic and environmental factors is responsible for this loss.

