

Parkinson's Disease

Robert Martin, *Biomedical Engineering, University of Rhode Island*
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Parkinson's Disease is an incurable disease that affects mostly older people. This disease is where nerve cells that control body movement are gradually degenerated.

I. INTRODUCTION

Parkinson's disease is a neurodegenerative disease that affects the central nervous system typically of people over the age of 55 and is more common in men than in women. About 60,000 Americans become diagnosed with Parkinson's every year and about 4 percent of the people who are diagnosed with PD are diagnosed before 50 years old. The disease results in the loss or insufficient making of dopamine producing cells within a group of brain cells in the inner most part of the brain. These brain cells, called basal ganglia, are the ones that control muscle movement. The basal ganglia send signals and transmit messages using a balance of the chemical neurotransmitters, acetylcholine and dopamine. When there is a loss of dopamine, the basal ganglia isn't able to stimulate and function properly, which leads to the deterioration of those signals that control the muscle movements. The main symptoms of the disease are tremors in the limbs and face; slowed movements or bradykinesia, stiffening of the limbs, or disrupted balance. It is difficult to first diagnose if it actually is Parkinson's because the disease has close symptoms with other muscular diseases and the earlier symptoms show up slowly. The treatment with drugs later on down the road could end up not responding to the disease. In that case surgery would be the only other option. It is also believed that the nerve cells can become damaged from trauma, infection, or toxins found in the environment, or even drugs that treat psychosis. Currently, there are no actual blood or laboratory tests that have proven been to help in diagnosing Parkinson's. The diagnosis, therefore, is based on medical history and a neurological examination like an MRI, CT scan, or a PET scan.

II. METHODS

As of this day in time, there are no cures for Parkinson's disease. There are medications in

which your doctor could prescribe to you to help ease the symptoms by increasing the production of dopamine, or mimicking dopamine in the brain. If these medications seem to not work over time, then surgery would take place called Deep Brain Stimulation, or simply DBS. A device similar to a heart pacemaker is implanted in the targeted area where the tremors are effectively stopped. The electrode works by producing electrical pulses to block the abnormal activity in the brain that can cause the effects of PD.

III. RESULTS

Drugs have shown to slow the progression of the symptoms. Deep Brain Stimulation can greatly reduce the need for the medications, but most patients still need to take them after. People who have undergone the surgery have had steady improvements. Also, the neurostimulator can be adjusted to fit the person's conditions if they got worse.

IV. DISCUSSION

Economically in the United States, Parkinson's disease costs nearly \$25 billion per year between treatments and people being unable to work. The fact that there is still little known about this disease and what exactly causes it has it's fall backs because we can only try different things right now to slow and mask the effects of Parkinson's. Although the drugs help with the symptoms of the disease they also have potential side effects that could lead to something else on top of dealing with the disease. The future outlook on this disease seems to be heading in the right direction. Deep Brain Stimulation is just the beginning of ending the fight with Parkinson's disease.

REFERENCES

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