

Name of Disorder: Parkinson's disease
Essay Title: Prevalence, symptoms and prognosis in Parkinson's disease.
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Content: In Australia, 70,000 people are estimated to be living with Parkinson's disease (PD) and each year 3,500 cases are diagnosed. These sobering statistics make PD the second most common neurological disease after Alzheimer's disease and four times more prevalent than Multiple Sclerosis (MS). Whilst the mean age of diagnosis is 60 years of age, 20% of patients living with PD are below 50. Worse still, as our population ages, the number of Australians living with PD will double over the next 30 years.

Symptomatically, PD is most often associated with difficulty in controlling movement, which can manifest in tremors (hands, face, feet, face), rigidity (trunk and limbs), slowness of movement and difficulty in initiating movement and maintaining postural stability. However, PD is a complex disorder that manifests in many ways: so much so, that each person experiences the disease in a unique and individual way. The early signs and symptoms of PD are subtle and years before a confirmed diagnosis, individuals may notice a gradual loss in their sense of smell, increasingly frequent constipation and difficulty controlling their balance. Aside from the movement deficits, sufferers may experience symptoms which are diverse and very debilitating and these can include: neuropsychiatric (depression, anxiety, insomnia); cognitive (dementia and memory loss) and; autonomic (sexual, urinary and constipation) disturbances.

Parkinson's disease is caused by the loss of specific brain cells (located deep in the brain) that produce dopamine, a brain chemical that regulates movement, cognition and mood. It is the loss of this brain chemical dopamine, which produces the symptoms of the disease. There is no cure for PD and because the disease is progressive, patients will experience more and more debilitating symptoms as time goes on.

The reason why the brains dopamine producing cells die off in PD is poorly understood. It is generally accepted that PD arises from a combination of a persons' genetics and the environment. For example up to 10% of PD is inherited, depending on the population, and about 10 genes have been implicated in the disease. However, not all people who inherit a PD gene variant go on to get PD. It appears that other triggers may be necessary such as exposure to toxins (pesticides), heavy metals, pathogens (viruses), head trauma and heavy drug use. Interestingly, life style choices particularly eating habits may have a bearing on susceptibility. Curiously for some unknown reason, non-steroidal anti-inflammatory drugs (NSAID) and tobacco use may protect against PD.

At present, current treatments for PD only provide symptom relief (L-DOPA and its pharmacological variants) and although surgery is available (deep brain stimulators), this has limited benefits and is not suitable for everyone. Sadly, the disease is progressive and sufferers' face a severely restricted and shortened life span. Setting aside the obvious social impacts, the treatment and management of PD imposes a sizeable economic burden, which in Australia is

predicted to rise as the population ages. Thus funding for scientific research is desperately needed to determine why and how the dopamine producing cell loss die. This is because these cells are not replaced once they die and only by knowing how they die in the first place will we be able to develop new treatments.

References: www.parkinsons.org.au