

PARKINSON'S DISEASE IS MAINLY GENETIC IS AETIOLOGY

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Traditionally, Parkinson's disease has been regarded as the archetypal non-genetic disease, and indeed, no research into the genetics of the disease was funded until the mid-1990's because of the false knowledge. Since molecular genetic analysis has been funded, since the identification of the α -synuclein mutations, ~14 genes have been found which act in mendelian kindreds, and now, with the identification of risk genes, such as glucocerebrosidase and those identified through genome wide associations studies, we now have accounted for ~30% of the risk in European populations and considerably more than this figure in Jewish and Arab populations. As I will explain, we are nowhere near the end of these genetic discoveries and I would predict we will have accounted for more than 50% of our risk for these diseases within the next 2 years. In contrast, no molecularly characterised environmental risk factor has been identified. Eventually, the absence of evidence should be interpreted as evidence of absence, and I will argue that, while there may be environmental factors which influence risk, there is no scientific reason to state that such factors exist: genetics and chance may, in fact, explain all of the risk for disease. It is unscientific to write that Parkinson's disease is caused by a mixture of genetic and environmental factors, until these latter are identified.