Introduction: Parkinson’s disease (PD) is one of the most common degenerative neurological disorders affecting one in 100 people over the age of 60. There is no convenient laboratory test available to aid the clinical diagnosis of the disease. A blood-based test for the early detection of PD would also be a useful tool for the patient selection when developing novel drugs for the disease.

Aims: The aim is to develop a biomarker for PD based on gene expression in blood. A blood based test will be a convenient and patient friendly tool to aid diagnosis of PD.

Methods: Blood samples were collected in PAXgene™ tubes from 75 neurologically healthy subjects and 75 PD patients at different stages of the disease. The two groups were age-matched (mean 63.3 and 64.9, respectively) and both genders were equally represented. Diagnosis of patients was based on clinical evaluation, including UKPDSBB, Hoehn & Yahr Staging, Unified Parkinson's Disease Rating and Schwab and England Activities of daily Living. RNA was extracted from the blood samples and gene expression profiling data generated using Illumina's HumanHT-12 v4 Expression BeadChip.

Results: Results will be presented showing that gene expression data from a selected set of informative genes can be used to classify PD from the neurologically healthy subjects with high agreement to clinical diagnosis.

Conclusions: PD affects gene expression in blood, suggesting the potential for the development of a blood-based gene expression test.