Parkinson's disease (PD) is a neurodegenerative disorder with predominantly movement disabilities but also with cognitive difficulties. Verbal fluency refers to the spontaneous production of words within a given category (semantic fluency) or beginning with a given letter (phonemic fluency) within a limited amount of time. Brain structures in the prefrontal and temporal lobe are involved in these different fluency processes.

**Aim:** The aim of this study was to investigate phonemic and semantic fluency in early PD.

**Methods:** Patients were identified in a longitudinal population based study of idiopathic non-drug induced parkinsonism. 115 newly diagnosed patients with PD and no dementia were included during a five year period. The patients and 30 age- and sex-matched healthy control subjects underwent a comprehensive neuropsychological assessment including test of semantic and phonemic fluency, the Controlled Oral Word Association (COWA) test. They were also investigated with magnetic resonance imaging to assess brain atrophy.

**Result:** There were significant differences at baseline between PD-patients and controls in semantic fluency ($p<0.000$) but not in phonemic fluency ($p=0.094$). At a three year follow-up the controls still performed at a higher level than PD-patients but the difference was not significant. On a group level the PD patients performed better while the controls performed worse compared to baseline. In the patient group semantic fluency was the only predictor for frontal atrophy.

**Conclusion:** The results indicate that brain regions involved in semantic fluency might be damaged early in the course of PD while brain regions involved in phonemic fluency are spared.