

## Pausing during semi-structured speech and relationship to cognition in Parkinson's disease

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**Rationale:** Parkinson's disease (PD) frequently causes speech and language difficulties, but the role of cognition in these symptoms has not been well studied. Pausing in speech in PD may reflect cognitive processing of syntax and meaning. This work focuses on pausing during semi-structured speech in PD. It is hypothesized that PD patients pause more both within and between utterances compared to controls, and that pausing relates to verbal working memory.

**Methods:** 49 PD patients and 24 healthy elderly controls underwent a battery of neuropsychological tests. Speech was recorded while describing the Cookie theft picture and transcribed using Pratt. Pause measures were compared between PD and controls using Mann-Whitney U test, and correlated with neuropsychological tests using Spearman's correlation.

**Results:** PD participants had more pauses both within and between utterances compared with controls, and a similar percentage of well-formed sentences. Pause measures correlated with verbal working memory and speed of processing tasks.

**Discussion:** During a semi-structured speech task, PD patients pause more often, and for longer duration, than age-matched controls. Pausing may represent real-time cognitive processing required for language formulation. Pausing in speech in PD warrants further study, to better understand the role of cognitive and motor symptoms.