



# MEASURING DEXTERITY IN PEOPLE WITH PARKINSON'S DISEASE: RELIABILITY AND VALIDITY OF PEGBOARD TESTS

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Figure 1. 9-Hole Peg Test

## Background

People with Parkinson's disease (PD) report problems with dexterity and hand function which may be addressed by therapists. Because valid and reliable outcome measures are needed for treatment evaluation, we examined the reliability and validity of 2 pegboard dexterity tests, the 9-Hole Peg Test (9HPT) and Purdue Pegboard Test (PPT).



Figure 2: Purdue Pegboard Test

## Methods

30 volunteers [HY II-III; mean age 67.1(9.5) years; disease duration 6.3(4.5) years] were tested on 2 days, one week apart (see Table 1).

Data analysis: ICCs explored test-retest reliability. We compared test scores with normative values (known groups validity) and explored correlations between pegboard scores and Manual Ability Measure-36 (MAM-36) scores (convergent validity).

**Table 1: Assessment**

Week 1		Week 2	
Session 1 ('on')	Session 2 ('eod')	Session 3 ('on')	Session 4 ('eod')

'on'='on' phase of the PD medication cycle; 'eod'='end of dose' (approximately 30 mins. before the next due dose).



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## Results

**Test-retest reliability:** Correlations were moderate to good for 9HPT scores in the 'on' phase and at 'end of dose' (ICCs=0.7–0.8) and good for all PPT subtests (ICCs≥0.9) in both medication phases.

**Construct validity:** Participant performance on the pegboard tests was significantly poorer than normative age-matched values for healthy men and women.

'On' phase 9HPT and PPT scores were moderately correlated with MAM-36 scores ( $r=0.31-0.51$ ), with higher correlations observed between PPT scores and self-reported hand function.

## Conclusions

The 9HPT and PPT show adequate reliability and validity for the evaluation of people with mild to moderately severe PD, but the PPT may be more sensitive to changes in dexterity occurring in people with PD.

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