



COVER SHEET

This is the author version of article published as:

Worringham, Charles J. and Wood, J. and Kerr, Graham K. and Silburn, Peter A. (2005) Predictors of Driving Assessment Outcome in Parkinson's Disease. Journal of the Neurological Sciences - Abstracts of the XVIIIth World Congress of Neurology 238(Suppl.1):pp. 376-376.

Copyright 2005 Elsevier

Accessed from <http://eprints.qut.edu.au>

Predictors of Driving Assessment Outcome in Parkinson's Disease

Worringham C.J.¹, Wood J.M.², Kerr G.K.¹, Silburn P.A.^{1,3}

¹ *School of Human Movement Studies, Queensland University of Technology, Brisbane, Australia.*

² *School of Optometry, Queensland University of Technology, Brisbane, Australia.*

³ *Neurology Department, Princess Alexandra Hospital, Brisbane, Australia.*

Introduction: Clinical decisions about driving can be particularly difficult in Parkinson's Disease (PD), since patients have a range of fluctuating cognitive, motor, and sensory symptoms that, alone or in combination, potentially impair driving. This study evaluated selected clinical and functional tests as predictors of driving safety outcomes in PD patients.

Methods: Twenty five PD patients and 21 age-matched controls, all regular drivers, underwent neurological evaluation and assessment of cognitive, visual and motor function and a standardised, on-road driving assessment. The capacity of the tests to predict pass/fail driving outcomes was determined by selecting a sub-set with the highest predictive value from each domain and then subjecting these to discriminant function analysis. Accuracy, sensitivity, specificity and positive and negative predictive values were determined.

Results: Three relatively simple tests from the larger battery predicted pass/fail driving outcomes with relatively high specificity (PD: 64.3%, controls: 93.8%, both combined: 85.2%); and moderate sensitivity (PD: 72.7%, controls: 60.0%, both combined: 63.2%). The tests assessed motor performance (Purdue Pegboard test), contrast sensitivity (Pelli-Robson test) and cognitive function (oral version of Symbol Digit Modalities test). Adding time since diagnosis increased specificity to 71.4 % and sensitivity to 90.9% for the PD group.

Conclusion: These simple tests confer more objectivity and predictive power to clinical recommendations for driving; they reflect distinct functions that are necessary for safe driving and may be especially useful when on-road assessments are not available.