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Useful field of view as a reliable screening measure of driving performance in people with Parkinson's disease: results of a pilot study.

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Abstract

PURPOSE: To determine the correlations of the Useful Field of View (UFOV), compared to other clinical tests of Parkinson's disease (PD); vision; and cognition with measures of on-road driving assessments and to quantify the UFOV's ability to indicate passing/failing an on-road test in people with PD.

METHODS: Nineteen randomly selected people with idiopathic PD, mean age = 74.8 (6.1), 14 (73.7%) men, 18 (94.7%) Caucasians, were age-matched to 104 controls without PD. The controls had a mean age of 75.4 (6.4), 59 (56.7%) men, 96 (92.3%) Caucasians. Both groups were referred for a driving evaluation after institutional review board approval.

RESULTS: Compared to neuropsychological and clinical tests of vision and cognition, the UFOV showed the strongest correlations ($r > .75$, $p < 0.05$) with measures of failing a standardized road test and number of driving errors. Among PD patients, the UFOV Risk Index score of 3 (range 1-5) was established as the optimal cutoff value for passing the on-road test, with sensitivity 87 percent and specificity 82 percent, AUC = 92 percent (SE 0.61, $p = .002$). Similarly, the UFOV 2 (divided attention) optimum cutoff value is 223 ms (range 16-500 ms), sensitivity 87.5 percent, specificity 81.8 percent, AUC = 91 percent (SE 0.73, $p = .003$). The UFOV 3 (selected attention) optimal cutoff value is 273 ms (range 16-500 ms), sensitivity 75 percent, specificity 72.7 percent, AUC = 87 percent (SE 0.81, $p = .007$).

CONCLUSION: In this pilot study among PD patients, the UFOV may be a superior screening measure (compared to other measures of disease, cognition, and vision) for predicting on-road driving performance but its rigor must be verified in a larger sample of people with PD.

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