

Classen, S., McCarthy, DP., Shechtman, O., Awadzi, K.D., Lanford, DN., Okun, M.S., Rodriguez, R.L., Romrell, J., Bridges, S., Kluger, B., & Fernandez, H.H. (in press) Useful Field of View as a Reliable Screening Measure of Driving Performance in People with Parkinson's Disease: Results of a Pilot Study. *Traffic Injury Prevention*.

Abstract

Purpose: To determine the correlations of the Useful Field of View (UFOV), compared to other clinical tests of Parkinson 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: 19 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 ($r \geq .75$, $p < 0.05$) 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%) and specificity (82%), AUC = 92% (SE 0.61, $p = .002$). Similarly, the UFOV 2 (divided attention) optimum cutoff value is 223 ms (range 16-500 ms), sensitivity (87.5%), specificity (81.8%), AUC = 91% (SE 0.73, $p = .003$). The UFOV 3 (selected attention) optimal cutoff value is 273 ms (range 16-500 ms), sensitivity (75%), specificity (72.7%), AUC = 87% (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.