

Validation of the European Driving Test: An evidence-based approach to the European visual field standards for driving

Abstract

Purpose: To assess whether the European visual field standards, when tested with the European Driving Test (EDT) perimetry program, can predict a passed or failed driving simulator test, and to establish meaningful pass/fail criteria for perimetry.

Methods: The study included 70 participants with binocular visual field loss who underwent testing of visual, cognitive and driving abilities. 37 healthy controls also performed the driving simulator test. Statistical calculations with receiver operating characteristic (ROC) was applied to determine area under the curve (AUC), a measurement of diagnostic ability to predict a passed driving test.

Results: In the group with binocular visual field loss and the control group, 63% and 75% passed the simulator test. EDT predicted the simulator result based on combined central and peripheral visual field with AUC of 0.63. Contrast sensitivity had an AUC of 0.73.

Conclusion: Participants with binocular visual field loss had a suggested point estimate of 1.49 relative risk of failing the driving test. However, perimetry had a poor ability to predict a passed or failed test, with an AUC of 0.63 for the combined central and peripheral visual field. No meaningful pass/fail criteria for perimetry could be established. Accordingly, the European visual field standards, when assessed with EDT, cannot predict a passed or failed driving simulator test on an individual level. Our study advocates individual assessment of fitness to drive in the setting of binocular visual field loss.