**On-road driving performance by persons with hemianopia and quadrantanopia.**

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**Abstract**

**PURPOSE:** This study was designed to examine the on-road driving performance of drivers with hemianopia and quadrantanopia compared with age-matched controls.

**METHODS:** Participants included persons with hemianopia or quadrantanopia and those with normal visual fields. Visual and cognitive function tests were administered, including confirmation of hemianopia and quadrantanopia through visual field testing. Driving performance was assessed using a dual-brake vehicle and monitored by a certified driving rehabilitation specialist. The route was 14.1 miles of city and interstate driving. Two "back-seat" evaluators masked to drivers' clinical characteristics independently assessed driving performance using a standard scoring system.

**RESULTS:** Participants were 22 persons with hemianopia and 8 with quadrantanopia (mean age, 53+/−20 years) and 30 participants with normal fields (mean age, 52+/−19 years). Inter-rater agreement for back-seat evaluators was 96%. All drivers with normal fields were rated as safe to drive, while 73% (16/22) of hemianopic and 88% (7/8) of quadrantanopic drivers received safe ratings. Drivers with hemianopia or quadrantanopia who displayed on-road performance problems tended to have difficulty with lane position, steering steadiness, and gap judgment compared to controls. Clinical characteristics associated with unsafe driving were slowed visual processing speed, reduced contrast sensitivity and visual field sensitivity.

**CONCLUSIONS:** Some drivers with hemianopia...
or quadrantanopia are fit to drive compared with age-matched control drivers. Results call into question the fairness of governmental policies that categorically deny licensure to persons with hemianopia or quadrantanopia without the opportunity for on-road evaluation.

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