
Poor Eyesight Causes Bad Driving

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New research carried out by optometrists and psychologists in Australia shows that motorists suffering from cataracts are less able to spot potentially dangerous hazards on the roads.

The research, carried out by the School of Optometry at Queensland University of Technology and the School of Psychology at the University of Queensland*, involved simulating cataracts in drivers through the use of “cataract goggles” who then carried out two tests: one designed to measure drivers’ ability to anticipate potentially hazardous situations in changing environments and the other to measure the time taken to detect objects in static scenes. 186 drivers were participated in the study. The results showed that the drivers with mild or severe cataracts had significantly lower scores than those with no cataracts.

There has been little research done into the role of poor eyesight in traffic accidents, despite the fact that there are potentially many drivers on our roads who don’t see well. Cataracts are a significant and growing problem as the age of the world’s population gets higher. Cataract extraction now accounts for 12% of the US’ entire Medicare budget – the number of people undergoing surgery has risen by 478% in the last 25 years. In Australia, the number of patients for cataract surgery has risen by 300% over the last 10 years.

The problem is a significant one. Many people live with cataracts for extended periods of time and many continue to drive even when their vision no longer meets the standards required. 23% of an Australian sample of patients about to undergo cataract surgery were found to be driving illegally due to poor vision. In the US, drivers with cataracts were two-and-a-half times more likely to be responsible for a crash over a five year period, even if suffering from cataract in only one eye. Furthermore, drivers in the US who chose to undergo cataract surgery had crash rates 50% lower, post-operation, than those of a group of drivers with cataracts who elected not to have surgery.

The study shows that drivers with mild and moderate simulated cataracts had their ability to perceive hazards significantly impaired and those with moderate cataracts were also less able to anticipate hazardous situations. The study shows that reduced contrast sensitivity affects drivers’ hazard perception, and this is an ability known to correlate with crash risk. Cataracts cause many defects in vision: including decreased visual acuity, susceptibility to glare and decreased contrast sensitivity. Research in the US, however, suggests that only contrast sensitivity has been associated with increased crash rates. In the US drivers who have been involved in car crashes have been shown to be eight times more likely to have poor contrast sensitivity in their worse eye than crash-free drivers. Surprisingly, poor visual

acuity on its own is a poor indicator of loss of visual function due to cataracts. Researchers are now calling for contrast sensitivity to be used when assessing fitness to drive.

Given that many cataract sufferers are known to drive when their vision is below the required standard, it would seem logical for patients with cataracts, who wish to continue to drive, to be offered surgery as soon as possible, in order to reduce the number of visually impaired drivers on the roads.

*The Effect of Simulated Cataracts on Drivers' Hazard Perception Ability – Shelby A Marrington, Mark S Horswill, Joanne M Wood, School of Optometry, Queensland University of Technology and School of Psychology, University of Queensland and, Brisbane, Australia. Published in *Optometry and Vision Science*, Vol. 85, No. 12, December 2008)

Notes for editors:

The European Council of Optometry and Optics is the European organisation which represents the interests of optometrists and opticians from 30 countries. It aims to promote eye health to the public across borders and to harmonise clinical and educational standards of optometric and optical practice throughout Europe.

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