

ViA SIG Symposium

Vision in Aging: A Focus on Falls and the Driving Debate.

Abstract: This is the first symposium of the Vision in Aging SIG (Special Interest Group). The clinical care of older adults requires an interdisciplinary approach and the clinical application of a broad body of knowledge and skills to address the complex eye care needs of the aging adult. The purpose of this symposium is to educate and increase awareness about the impact of falls and driving challenges on older adults and the link with vision. The interdisciplinary panel will discuss aspects of visual performance and aging, the role of physical and cognitive morbidities, the Optometrist role in fall prevention, and key issues debated about older drivers in an aging society.

Introduction

Susan Leat, PhD, FCOptom, FAAO Professor, School of Optometry and Vision Science, University of Waterloo

- i. The history of the Vision in Aging SIG
- ii. The aging population
- iii. The significance of driving and falls in the older population

High Contrast Visual Acuity is a Poor Predictor of Visual Performance in Elders

Gunilla Haegerstrom-Portnoy, OD, PhD, FAAO, Professor of Optometry and Vision Science, UC Berkeley

Purpose- to describe changes in vision function with age and impact on performance

Data from SKI study: Describe study: random, community based; age, gender distribution

- i. Methods-over view
- ii. Most elderly have relatively intact visual acuity
 - a. Acuity distribution in the population as a whole and changes/decade
- iii. While high contrast acuity is spared, other vision functions change significantly
 - a. CS vs age
 - b. SKILL vs age
 - c. Glare vs age
 - d. Stereo vs age

- e. Attentional fields
 - f. Comparison of all functions to high contrast acuity –times worse
- iv. Changes in vision function impact visual performance
 - a. Reading test used
 - b. Reading vs age (those with 20/32 or better)
 - c. What predicts reading ability?
 - d. Face recognition vs age
 - e. Face recognition test method
 - f. What predicts face recognition ability?
 - g. Driving cessation vs age (gender issues)
 - h. Questionnaire
 - i. What predicts driving cessation?
- v. Summary

Implications of physical and cognitive co-morbidity in the falls and driving of older adults

Rosemary Browne, MD

- i. Falls
 - a. Definition, Demographics
 - b. Contributing factors for falls:
 - i. Environment
 - ii. Cognition
 - iii. Acute/Chronic Conditions
 - iv. Medications
 - v. Postural hypotension
 - vi. Gait, Balance and Strength
 - c. Multifactorial Fall Risk Assessment
 - d. Interventions:
 - i. Home Assessment/Adaptations
 - ii. Physical Therapy/ Gait and Balance Training
 - iii. Modify medications
- ii. Driving
 - a. Demographics
 - b. Crash Data
 - c. Impact of Driving Cessation
 - d. Non-Visual Issues in Driving Capacity:
 - i. Cognition
 - ii. Chronic Conditions
 - iii. Medications (including alcohol)
 - iv. Mobility
 - e. Office Assessment

- f. State Law and Ethics

Vision, aging and driving

***Cynthia Owsley, PhD, MSPH, Nathan E. Miles Chair of Ophthalmology, Department of Ophthalmology,
University of Alabama at Birmingham***

- I. Introduction
 - a. Public Health Relevance
 - i. Quality of life
 - ii. Accessibility to health care
 - iii. Depression and social isolation
 - iv. Long term care
 - b. Policy Relevance
 - i. Screening for licensure and license renewal
 - ii. Functional evaluation vs. disease conditions as determination for licensure
 - iii. Driving assessment and evaluation and third party reimbursement
 - c. Distinction between driver “safety” and driver “performance”.
- II. Vision Impairment, Motor Vehicle Collision Risk, and Driving Performance
 - a. Visual acuity
 - b. Contrast sensitivity
 - c. Visual field sensitivity
 - d. Visual processing speed
 - e. Driving with bioptic telescopes
 - f. Driving with hemianopia and quadrantanopia
- III. Comments and Conclusions

The Optometrists’ Role in Preventing Falls in Older Adults

***David Elliot, PhD, MCOptom, Professor of Clinical Vision Science, Bradford School of Optometry and
Vision Sciences***

- i. Falls are very common
 - a. 33% of those aged 65+ fall each year, 50% of those 80+.
- ii. They are a very serious health risk for older people and are the major cause of accidental death in the elderly.
- iii. Falls are not random events.
 - a. Epidemiological studies have shown that falls are typically multi-factorial and are linked to intrinsic and extrinsic risk factors.
- iv. Vision provides a significant input to balance control in addition to providing information about the size and position of hazards and obstacles in the travel pathway and allows us to negotiate steps and stairs.
- v. Clinical audit studies have suggested that people who fall have particularly poor vision.
- vi. Most epidemiological studies have shown that visual impairment, typically defined as binocular visual acuity worse than 6/12 or 6/18, is a significant and independent risk factor for falls
- vii. Possible reasons why there has been so little improvement in randomised controlled trials (RCTs) of correcting visual impairment by cataract surgery and updating glasses and falls rate

will be discussed, particularly the Cummings et al. (2007) optometric intervention study, which found an ***increased*** falls rate after updating spectacles.

- viii. Major changes in spectacle power might increase falls rate in older people and partially prescribing refractive changes may help.
- ix. Bifocals and PALs double the risk of falling and additional single vision distance spectacles for outdoor wear may reduce fall risk for some people.
- x. Elderly people with visual impairment may have reduced falls risk after home hazard reduction programs.

Conclusion and questions

Susan Leat