

Geriatric Vision Care – a New Look at the Old

World-wide, Optometry is expanding its scope of practice in many jurisdictions. The campaign to use therapeutic pharmaceutical agents (TPAs) is on-going in most countries and optometrists are increasingly becoming involved in co-managing glaucoma and the ocular complications of diabetes, interfacing with systemic and ophthalmic specialists. Optometrists continue to define their role as members of the healthcare team by serving as post-operative care specialists following refractive and cataract surgeries. In addition, Optometry continues to be a leader in pediatric eye care and pediatric eye research, including working with children with learning disabilities and children with special needs (multiple-challenges). While low vision, contact lenses and orthoptics (vision training/binocular vision) remain staples of the traditional domain, they should not be ignored at the expense of new growth. Even as we struggle, some ask, “is the time ripe for Optometry to begin to recognize its own subspecialties?” Although all optometrists graduate as primary eye care providers, as the profession expands special interest practitioners have laid claim to areas of expertise such as sports vision specialist, rehabilitation vision specialist, neuro-optometric specialty and so on. Just as medicine, and then ophthalmology before us, recognized sub-disciplines, should Optometry mature along a similar path?

Geriatric optometry is, perhaps, the newest subspecialty of Optometry. We do not need to remind readers of the aging of the population in most developed and developing countries and the increased eye care needs that will ensue. While a large proportion of the older population maintains an active and healthy life for many years, there is a percentage that requires more health care, including eye care. Eye care is still under-provided in nursing homes, and the rate of visual impairment is 3 to 30x higher compared to community-dwelling adults.^{1,2} Fifty-seven percent of this population have visual impairment (VA <6/12)² and near acuity is often poorer than distance acuity (indicating that spectacle correction could be improved). As many as 94% of patients with dementia in nursing home settings require glasses for myopia or presbyopia, but only 31% of these may be using adequate spectacles.³ Thus the frail elderly are a particular segment of this population who are slipping through the cracks. Yet many of the conditions found in this population are treatable.^{3,4}

Visual impairment is associated with many negative consequences in the elderly. This includes poorer economic stand-

ing, poorer physical and mental health, more social isolation and less social support.⁵ Age-related macular degeneration is associated with more visual stress and an increase in musculoskeletal complaints.⁶ Poor vision is an important predictor of falls⁷ with poor visual acuity, contrast sensitivity, stereopsis and visual impairment all increasing the frequency of lost balance^{8,9} and the degeneration of coordination that results from decreased spatial orientation and awareness. Interestingly, the Morse Falls Scale Assessment,¹⁰ which is a standardised instrument used for intake into some hospital settings, does not include any questions on vision. Falls in the elderly population are of great concern, as they result in an increased risk of morbidity, mortality, increased dependence, and increased cost to the health care system.¹¹ Vision assessment is recommended as a part of falls prevention programmes.¹²

This Special Issue of the Journal of Optometry covers topics of critical interest to those who are involved in research into vision in the elderly or in their clinical care; management of disease in the elderly,¹³ glare testing,¹⁴ gaze behavior and balance,¹⁵ and quality of life.¹⁶ We learn that cataract surgery can result in successful outcomes in the oldest segment of the elderly population and that this improvement in visual acuity translates into more activities of daily living.¹⁷ The visual impact of Alzheimer’s disease is reviewed.¹⁸ Although the optometrist would seldom be involved in the detection or diagnosis of Alzheimer’s disease, s/he should be vigilant for the visual deficits which may occur (e.g. difficulty with smooth pursuits and fixation, reduced contrast sensitivity and colour vision, difficulty with reading and object recognition) and suggest accommodations as necessary.

It is clear that there is need for more research on the elderly and vision (e.g. there are few studies that specifically consider the impact of disease management or surgery in the elderly) and there is much work to be done to improve the clinical eye care of elderly persons. While Optometry has an obvious and major role to play in the measurement and optimization of functional vision and in the treatment of many vision disorders in the elderly population, Optometry is also responsible for building the evidence base for the treatments we offer the elderly.

REFERENCES

1. Owsley C, McGwin, Scilley K, Meek GC, Dyer A, Seker D. The visual status of older persons residing in nursing homes. *Arch Ophthalmol.* 2007;125:925-930.

2. Swanson MW, McGwin Jr G, Elliott AF, Owsley C. Association between the Nursing Home minimum data set for vision and vision-targeted health-related quality of life in nursing home residents as assessed by certified nursing assistants. *J Optom.* 2009;2:148-154.
3. Koch JM, Datta G, Makdoo S, Grossberg, GT. Unmet visual needs of Alzheimer's disease patients in long-term care facilities. *J Am Med Dir Assoc.* 2005;6:233-237.
4. Carcenac G, Hérard ME, Kergoat MJ, et al. Assessment of visual function in institutionalized elderly patients. *J Am Med Dir Assoc.* 2009;10:45-49
5. La Grow S, Alpass F, Stephens C. Economic standing, health status and social isolation among visually impaired persons aged 55 to 70 in New Zealand. *J Optom.* 2009;2:155-158.
6. Zetterlund C, Lundqvist L, Hans O, Richter HO. The relationship between low vision and musculoskeletal complaints. A case control study between age-related macular degeneration patients and age-matched controls with normal vision. *J Optom.* 2009;2:127-133.
7. Rubenstein LZ. Falls in older people: epidemiology, risk factors and strategies for prevention. *Age Ageing.* 2006;35:ii37-ii41.
8. Cummings SR, Nevitt MC, Browner WS, et al. Risk factors for hip fracture in white women. Study of osteoporotic fractures research group. *N Engl J Med.* 1995;332:767-773.
9. Dargent-Molina P, Favier F, Grandjean H, Baudoin C, Meunier PJ, Bréart G. Fall-related factors and risk of hip fracture: the EPIDOS prospective group. *The Lancet.* 1996;348:145-149.
10. Morse Falls Scales Assessment. Available at http://74.125.77.132/search?q=cache:m1pFln9HjX4J:www.mnhospitals.org/inc/data/tools/Safe-from-Falls-Toolkit/Morse_Fall_Scale_Assessment.doc+morse+fall+assessment&cd=3&hl=en&ct=clnk&gl=ca. Accessed September 21, 2009.
11. Bergeron E, Clement J, Lavoie A, et al. A simple fall in the elderly: not so simple. *J Trauma.* 2006; 60:268-273.
12. Costello E, Edelstein JE. Update on falls prevention for community-dwelling older adults: review of single and multifactorial intervention programs. *J Rehabil Res Dev.* 2008;45:1135-1152
13. Doro D, Paolucci P, Cimatti P. Intraocular pressure and conjunctival hyperaemia with bimatoprost every 48 hours versus every 24 hours. *J Optom.* 2009;2:134-137.
14. van den Berg TJTP, van Rijn LJ, Kaper-Bongers R, et al. Disability glare in the aging eye. Assessment and impact on driving. *J Optom.* 2009;2:112-118.
15. King EC, McKay SM, Lee TA, Scovil CY, Peters AL, Maki BE. Gaze behavior of older adults in responding to unexpected loss of balance while walking in an unfamiliar environment: a pilot study. *J Optom.* 2009;2:119-126.
16. Gothwal VK, Wright T, Lamoureux EL, Pesudovs K. Validity of the adaptation to age-related vision loss scale in an Australian cataract population. *J Optom.* 2009;2:142-147.
17. Mehmet B, Abuzer G. Results of cataract surgery in the very elderly population. *J Optom.* 2009;2:138-141.
18. Armstrong RA. Alzheimer's disease and the eye. *J Optom.* 2009;2:103-111.

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