

Preventing falls in older people with visual impairment – not as straightforward as it seems

M Clare Robertson and A John Campbell

Correspondence to: clare.robertson@stonebow.otago.ac.nz

M Clare Robertson is a Research Associate Professor at the University of Otago.

A John Campbell is a Professor of Geriatric Medicine at the University of Otago, Consultant Geriatrician, Otago DHB and Chair, Medical Council of New Zealand.

Their main research interest is the development and testing of interventions to prevent falls and fall related injuries in elderly people.

Introduction

Visual impairment is common in older people and this subgroup of your patients is even more likely to fall than their peers with normal sight.¹ Loss of visual acuity increases with age to 42% of those aged 85 and older.² The risk of falling in people with visual deficits is around 2.5, and the risk of hip fracture is up to 8.4 times greater than for those people with normal sight. Poor contrast sensitivity, depth perception and reduced visual field are associated with falls – not just poor distance vision.

Although there are now several effective strategies to prevent falls in older people,^{3,4} there have been two or three with the opposite effect. Use of mechanical constraints in nursing homes, brisk walking in the community and a multiple risk factor assessment and modification approach in

nursing homes delivered by the staff at each institution were associated with an increase in falls.⁵⁻⁷

Referral for eye examination

The major causes of visual impairment, all associated with an increased risk of falls, are under-corrected refractive error, age-related macular degeneration, cataract, glaucoma and diabetic retinopathy.⁸ Elderly people who have regular eye examinations do experience fewer declines in vision and functional status, and referral for eye care is thought to be beneficial in terms of falling. We know that wearers of multifocal glasses are more than twice as likely to fall than those who wear monofocal glasses.⁹

A recently published study from Sydney alerts us once again to the fact that an intuitive approach to falls prevention may have quite the opposite effect.¹⁰ The intervention group, who received comprehensive vision and eye examinations conducted by the study optometrist, had significantly more falls than the control group receiving usual care.

Removal of cataracts

Two randomised controlled trials by Harwood and colleagues have spe-

cifically addressed older people with visual impairment.^{11,12} Harwood showed that people offered a fast track for first eye cataract surgery had 34% fewer falls than those remaining on the waiting list.¹¹ Removal of a second cataract reduced falls by 32% (not significant).¹²

VIP trial

Our hypotheses for the Visually Impaired Person's (VIP) trial were that an exercise programme and a home safety programme would each reduce falls in older people with severe visual impairment. We know that the home based strength and balance re-training programme – the Otago Exercise Programme – is effective in reducing both falls and fall-related injuries in over 65-year-olds by at least 35%.¹³⁻¹⁵ The programme is most ef-

fective in those age 80 and older with a fall in the previous year.¹⁶ We thought that people with visual impairment would benefit particularly, because they may

have poorer balance and lower limb muscle strength than their normally sighted peers.

It may be that falls associated with environmental hazards at home are a more common cause of falls in this population. People with visual impairment may not see a hazard, may over-

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correct while stepping around it, and may have more difficulty identifying sources of support if they stumble.

Therefore in the VIP trial we tested two interventions, a home safety programme and the exercise programme, in community living people aged 75 and older with visual acuity 6/24 or worse in the better eye.¹⁷ Around 88% of participants reported their visual impairment as being age-related macular degeneration. The home safety programme reduced falls by 41%.

An experienced occupational therapist used an adapted Westmead home safety checklist as the basis for a home safety assessment and modification programme. Falls at home related to an environmental hazard were significantly reduced, but so were the falls not associated with any hazard.¹⁸ Falls away from home were also reduced. We concluded from this that the success of the home safety programme must come from some mechanism in addition to removal or

modification of hazards or provision of new equipment.

Overall in the VIP trial, the exercise programme was not successful in reducing falls, although those who exercised at least twice a week during the one year study did have significantly fewer falls, indicating that these individuals did benefit. In contrast, the home safety programme can clearly be recommended as an individual and a public health intervention in this group of elderly people.

The VIP trial results cast doubt on the assumption that strategies effective in reducing falls in older people with normal sight will necessarily 'work' in people with poor vision, and vice versa.

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Competing interests

None declared.

Key Points

- Elderly people with vision loss are at double the risk of falls compared with those who have normal sight.
- Refer your older patient with visual impairment to an experienced OT for a home safety assessment and facilitation of fall risk modification.
- Ask about falls in the previous year. Motivated older people, especially those with a history of falls, will benefit from an exercise programme designed specifically to reduce falls.
- Vision should be optimal and cataract removal does prevent falls.
- Advise extreme care while adjusting to major changes in lens prescriptions.
- Advise use of monofocals while walking.

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