

## Guidelines

# How opticians and optometrists can help prevent falls in older patients

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These guidelines provide recommendations for Optometrists and Opticians regarding how to best manage their older patients to minimise the risk of falls.

### Falls are common and not chance events

At least a third of people over the age of 65 years report falling at least once per year, with about half of these people reporting multiple falls.<sup>1,2</sup> Falls rates are higher in older and frailer people, and the mortality rate associated with falls also greatly increases with age, with falls accounting for 84% of accidental deaths in persons 65 years and over.<sup>2</sup> Falls have traditionally been viewed as accidents that are unpredictable and, therefore, unavoidable. While falls in older people are multifactorial, there is clear evidence that they are associated with well-defined intrinsic and/or extrinsic factors (Table 1),<sup>1,2</sup> some of which can be minimised through targeted interventions to reduce the risk of falls. The more risk factors you have, the more likely you are to fall, and importantly, visual impairment is key risk factor for falls.

Table 1. Risk factors for falls

Intrinsic Risk Factors	Extrinsic Risk Factors
Increasing age	Poor lighting
Female sex	Presence of trip hazards such as loose rugs
Gait and balance impairment	Inappropriate footwear
Systemic conditions such as arthritis, postural hypotension, stroke, diabetes and Parkinson's disease	Unsafe stairways (no handrail and steps of variable height)
Sedative use	Irregular floors
Taking multiple medications (greater than four, polypharmacy)	Unsuitable bed and bath designs
A history of falls	
Visual impairment	

## Optometry and Opticianry Guidelines for older patients

The following guidelines are based on the results from randomised controlled trials,<sup>3-5</sup> cohort studies,<sup>6</sup> lab-based studies,<sup>7</sup> clinical experience<sup>8</sup> and a review of the literature.<sup>1</sup> The results of three randomised controlled trials are critical to this issue:

- Patients prescribed new spectacles with large (over 0.75D) changes in correction experienced increased falls.<sup>3</sup>
- Long-term multifocal wearers who are prescribed distance single vision spectacles for outdoor activities experienced less falls if they were regularly going outside the home, but increased falls if they were less fit and did not get out much.<sup>4</sup>
- Low vision patients experienced fewer falls after home hazard reductions.<sup>5</sup>

### 1. Adapt your case history for patients at risk of falls (e.g. frail, elderly patients)<sup>1,2</sup>

- i. Develop a clear understanding of which patients are most at risk of falling (see Table 1).
- ii. Ask patients about any history of falls in the previous 12 months.
- iii. Ask whether patients always wear their distance spectacles when walking outside the home.
- iv. Determine whether bifocal/PAL wearers remove their bifocal/PALs when negotiating stairs.

### 2. Management of patients at moderate-high risk of falling.<sup>1,3,5-7</sup>

- i. Promote regular eye exams, so that regular small changes in refractive correction can be made thus avoiding the need for larger changes in correction, which can increase falls.
- ii. Suggest early referral for first eye cataract surgery as appropriate.
- iii. Advise patients to wear their distance spectacles when walking outside the home. Note that unaided low myopes will have a clear view of the travel pathway, steps and stairs.
- iv. Warn patients of magnification changes with new spectacles. Myopic shifts will make objects, including steps and stairs, look smaller and further away, hyperopic shifts will make them look bigger and closer, and astigmatic changes will make stairs and steps slope.
- v. Advise low vision patients to seek home modifications to prevent falls through services provided by Occupational Therapists and other health professionals.

### 3. Prescribing to patients at moderate-high risk of falling.<sup>1,3,4,7</sup>

- i. Any change in refractive correction should be conservative. Be very careful in changing the correction of an 'at-risk' patient by more than 0.75DS.
- ii. Be very careful in making astigmatic changes, particularly if oblique (axes between 30° - 60° and 120° - 150°). Make partial changes in cylinder and axis as appropriate and provide appropriate advice to patients regarding these changes.
- iii. Be wary of using a monovision approach with 'at-risk' patients because of the loss of stereoacuity.
- iv. Do not prescribe bifocal/PALs if 'at-risk' patients currently wear single-vision spectacles or if patients are minimally ametropic and are used to walking about without spectacles.
- v. Long-term wearers of bifocal/PALs with minimal ametropia can be advised that they are less likely to fall if they remove their glasses when walking outside. If they have significant ametropia and participate in frequent outdoor activities, they should use distance SV glasses when outside (other than when driving or shopping).
- vi. Long-term wearers of bifocal/PALs with significant ametropia who participate in *little* outdoor activity should continue to wear bifocal/PALs for most activities.

#### 4. Prescribing to patients following cataract surgery<sup>1,3,4,6</sup>

- i. Ensure that the patient is involved in the decision making regarding their post-operative refractive error when monofocal intraocular lenses are to be used. For example, some long-term myopes who have been myopic all their life might wish to keep distance spectacles and read without spectacles post-surgery (i.e. surgeons would target slight myopia), rather than lose their distance spectacles and have to read with spectacles. This would also reduce the magnitude of change in refractive error following surgery, which may reduce falls rate.
- ii. Make conservative changes in refractive correction, particularly astigmatic correction. Any astigmatic correction could be kept the same as pre-surgery if possible, particularly the axis. Otherwise, the overall cylinder value should be reduced (equality approached in the cylinder values and symmetry approached in the axes) and not prescribed if possible.
- iii. Reduce the use of bifocals and PALs in active older patients.
- iv. Provide reduced reading power bifocals/PALs that provide safer walking but allow adequate short-term reading<sup>8</sup> for patients who wish to retain bifocals/PALs. This could be combined with a full addition bifocal/PAL or reading spectacles for near work.
- v. Provide new lenses in between 1st and 2nd eye surgery if the patient intends to wear distance spectacles after 2nd eye surgery. A balance lens could be provided where appropriate for the fellow eye with cataracts to avoid anisometropic complications.

#### REFERENCES

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