

Deteriorating vision, falls and older people: the links

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Foreword

Falling is not an inevitable result of ageing, but the risk of falling increases as people get older. It is important to explore the relationship between deteriorating vision and falls, as both problems affect a significant proportion of older people. Visual impairment affects about 10% of people aged 65-75, and 20% of those aged 75 and older. It is estimated that about a third of people aged 65 and over will fall at least once a year. That figure rises to approximately half of those aged 85 and over. Older people with sight problems are not only more likely to fall, but are at a greater risk of multiple falls, compared to their fully sighted peers.

This project aimed to establish if significant sight loss is occurring in older people who have fallen and if their visual problem has been identified.

Thanks must go to everyone involved with this project especially the participants who were interviewed, Lomond & Clyde Care & Repair, Clydebank Community Older People's Team and West Dunbartonshire Council.

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April 2005

1. Introduction

During 2003/4, Visibility was commissioned by Greater Glasgow NHS Board to conduct an identification project¹ within a specific geographical area. In partnership with West Dunbartonshire Council and Clydebank Local Health Care Cooperative, the project explored why some people, who are visually impaired, are not accessing the aids and equipment, information and support that could improve their quality of life.

It is well documented that blind and partially sighted registration data underestimates the number of people living with a significant visual impairment and is not a true reflection of the number of people who may benefit from contact with specialist health or social care services. Just under half (49%) of the visually impaired participants in the identification project were not registered and it was evident that two-thirds of those interviewed would benefit from a new, or re-referral, to specialist services. Although the research suggested that a significant number of visually impaired people may not, currently, be in touch with specialist health or social care services, it is unlikely that there are large numbers of visually impaired people who are completely unknown to services of any kind. An individual with a significant sight loss may be in receipt of services e.g. they may have a home help, but this service, although very beneficial to the client, may not fully address their needs as a visually impaired person.

1.1 Falls and the identification project

Although the researcher did not specifically ask, 36% of participants in the identification project mentioned they had fallen, or tripped, as a result of their sight loss, with four participants requiring hospital treatment. It is well documented that older people fall, however the research evidence suggests that older people with sight problems are more likely to fall, compared to their fully sighted peers.²

1.2 Service providers and the identification project

A number of local service providers were interviewed for the identification project. Most knew that visually impaired people could be registered blind, or partially sighted, but were unaware of the often long and difficult journey people with serious sight loss face on their way to accessing services. Many of the health and social care staff commented that they find it difficult to know if the functional vision of their clients/patients is problematic. If professionals working with older people are unaware of sight problems in their clients/patients, it is possible that those at an increased risk of falls may be overlooked.

2. Background

Falls are the leading cause of mortality resulting from injury in people aged over 75 in the UK. In 1999, there were 647,721 accident and emergency department attendances and 204,424 admissions to hospital for fall-related injuries in the UK population aged 60 years and over. The associated cost of these falls to the NHS and Personal Social Services was £908.9 million and 63% of these costs were incurred from falls in those aged 75 years and over.³ Additionally, many older people fall but do not require medical attention, therefore, their fall goes unreported. It may be only when a physical injury occurs requiring input from a GP surgery or local hospital that an individual is identified as a person who falls, despite having experienced a number of previous falls. Community studies have estimated that about a third of people aged 65 and over will fall at least once a year. This rises to approximately half of those aged 85 and over.⁴ Older people are also more likely to injure more than one part of their body, with 25% of falls causing injury to more than one area.⁵

The older population of Scotland has been growing throughout the 20th century; a trend predicated to continue. Currently, people aged 65 years or over make up just over 15% of the total population, but this group will account for 24% of the population by 2031. With an ageing population, the economic impact of falls in older people is a matter of increasing concern to those working in public health. Over recent years, emergency admission rates, outpatient referral rates, day case and elective admission rates have all increased, to some extent, in the older population. Although poor health is not an inevitable consequence of growing older, rates of limiting longstanding illness and disability increase dramatically with age. Around 60% of people aged 85 years or over, living in private households, have a limiting longstanding illness and approximately 80% of this population have a disability.⁶ It is this age group that is most likely to experience serious sight problems and therefore with the predicted growth in the older population, the number of visually impaired people is set to increase.

2.1 The multi-factorial nature of falls

Most falls are multi-factorial in origin, and there is now a clear understanding of the factors contributing to fall risk in older adults.

Preventing falls in older people depends on identifying those most at risk; the more risk factors present, the greater the risk of falling.

There are two separate sets of factors leading to falls, the characteristics of the faller (intrinsic risk factors) and the factors associated with the environment in which the fall occurs (extrinsic risk factors).⁷

Intrinsic risk factors include:

- balance, gait or mobility problems, including those due to degenerative joint disease and motor disorders, such as stroke and Parkinson's disease
- taking four or more medications, in particular centrally sedating or blood pressure lowering medications
- visual impairment
- impaired cognition or depression
- postural hypotension

Extrinsic risk factors in the home environment include:

- poor lighting, particularly on stairs
- steep stairs
- loose carpets or rugs
- slippery floors
- badly fitting footwear or clothing
- lack of safety equipment, such as grab rails and inaccessible lights or windows

Successful interventions are those that address multiple risk factors.

2.2 National context

The great majority of people (98%) aged 65 and older wear glasses⁸ and 90% of blind and partially sighted people are aged over 60 years.⁹ In England, the Department of Health has looked at falls as part of the 2001 National Service Framework for Older People. Standard six, 'Falls', specifically highlights visual impairment as a risk factor. The standard aims to reduce the number of falls resulting in serious injury and to ensure effective treatment and rehabilitation for those who have fallen. One of the key interventions to prevent falls described in the National Service Framework is the introduction of public health strategies (e.g.

increasing awareness) and identification, assessment and preventative measures for those most at risk.

In November 2004, the National Institute for Clinical Excellence (NICE) issued clinical guidance for the NHS in England and Wales on the assessment and prevention of falls in older people. The guidelines identify several key priorities for implementation. Older people in contact with healthcare professionals, should be asked, routinely, whether they have fallen in the past year and the frequency, context and characteristics of the fall/s. Older people who present for medical attention because of a fall, or report recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance, should be offered a falls risk assessment. This assessment should be performed by healthcare professionals with appropriate skills and experience, normally in the setting of a specialist falls service.

The assessment may include:

- identification of falls history
- assessment of gait, balance and mobility, and muscle weakness
- assessment of osteoporosis risk
- assessment of the older person's perceived functional ability and fear relating to falling
- assessment of visual impairment
- assessment of cognitive impairment and neurological examination
- assessment of urinary incontinence
- assessment of home hazards
- cardiovascular examination
- medication review

All older people with recurrent falls, or assessed as being at increased risk of falling, should be considered for an individualised multifactorial intervention. In successful multifactorial intervention programmes, specific components are common:

- strength and balance training
- home hazard assessment and intervention
- vision assessment and referral
- medication review with modification/withdrawal

Following treatment for an injurious fall, older people should be offered a multidisciplinary assessment to identify and address future risk, and individualised intervention aimed at promoting independence and improving physical and psychological function. To encourage the participation of older people in falls prevention programmes, individuals at risk of falling and their carers, should be offered information orally and in writing about what measures they can take to prevent further falls.

NICE guidelines are based on the best evidence available and when forming a recommendation, good quality published studies in the area are examined. Implementation of some interventions for the prevention of falls are not recommended at present by NICE because of insufficient evidence. The NICE guidelines currently state that there is no evidence that referral for correction of vision as a single intervention for older people is effective in reducing the number of people falling. However, vision assessment and referral has been a component of successful multifactorial falls prevention programmes.

3. The role of visual impairment

3.1 Normal vision change and visual impairment

It is important to understand the difference between normal vision change with age and visual impairment. Vision change is the natural, deterioration of sight that comes with age and can usually be corrected by glasses. Visual acuity remains fairly constant up to fifty years of age and then steadily declines. There may also be 'normal' age-related decline in contrast sensitivity, glare sensitivity, dark adaptation, accommodation and depth perception. Visual impairment usually results from an eye condition or disease and cannot be corrected by glasses, medication or surgery. Many older people blame changes to their eyesight on ageing, but only an eye examination can separate a serious visual impairment from 'normal' ageing changes.

Several of these age-related changes in vision place older people at risk of falling. The ability of the eyes to adjust to varying light levels diminishes with age. As a result, older people require more time to adjust to changes in lighting, and dark adaptation is especially affected. A greater sensitivity of the aging eye to glare can lead to a restriction of the visual field which, in turn, leads to an inability to see objects in someone's path. Common sources of glare include sunlight shining through windows and reflecting off kitchen worktops or tiled floors and bright light from unshielded light bulbs. A loss of visual acuity and contrast sensitivity can make the perception of objects in the environment more difficult. The edge of a rug may be difficult to spot on a patterned carpet and steps, stairs or edges can be very difficult to differentiate. The loss of visual acuity and/or contrast sensitivity is also more evident under poor lighting conditions. A decline in depth perception can cause the detection of certain floor surfaces e.g. patterned carpets, to appear as elevations or depressions on the ground. An older person may try to step around or avoid walking on such areas entirely. In addition, a loss of depth perception can make it difficult to perceive objects in areas of shadows, low light or excessive brightness. When an eye condition e.g. cataract, glaucoma or macular degeneration occurs in combination with age-related changes in vision, there will be a further loss of visual function.

3.2 Unrecognised or untreated visual problems

There is a major problem of preventable or treatable visual problems in the older population of the UK.¹⁰ Older people have a far higher level of eye disease than other age groups and untreated visual impairment affects a considerable number of people aged 65 years and older. Many older people have reduced vision that is undetected. The majority of these people have treatable visual problems, such as refractive errors and cataract. Undetected glaucoma is also likely to be prevalent and, although the visual loss from glaucoma is not reversible, the condition should be treated to prevent further deterioration. A north London study of 1,547 people showed that 30% of the sample population aged 65 years and over were visually impaired in both eyes and more than 72% of this bilateral visual impairment could potentially be improved by surgery or glasses.¹¹ The study also estimated that 88% of people over 65 with cataracts are not in touch with any eye services and that three-quarters of people over the age of 65, with glaucoma, are not in contact with an eye specialist. Another study also found that a significant proportion of people over 65 (34%) attending a hospital accident and emergency department following a fall, had a visual impairment that could be improved simply by wearing glasses.¹²

If older people expect their vision to deteriorate as they age, they may also have the belief that nothing can be done to improve their sight. People may feel their eyesight is not 'bad enough' to see an optician or their GP or they may be reluctant to attend for a routine eye examination, for fear of being told bad news. Others may worry about costs. Since April 1999, people aged 60 and older have been eligible for a regular free NHS eye examination. NHS domiciliary eye examinations are also available free of charge to those unable to attend a community optometric practice. Once at the optician, some patients may not purchase the optician's prescribed glasses, due to cost or because they may feel new glasses are not necessary. Some patients however may be entitled to an NHS optical voucher qualifying them for free glasses, if they have an eye-related condition, or receive certain social security benefits. If an optician decides to refer a patient to their local hospital eye department they may have difficulty travelling to the hospital when their appointment comes through and choose not to make the journey. Unpublished Health Board statistics suggest failure to attend rates for patients attending eye outpatient departments are approximately 15%-20%.

4. Methodology

4.1 Working in partnership

Building on the good working relationships formed during the identification project, Visibility established this further piece of research within the Clydebank area. Clydebank sits within West Dunbartonshire Council and is served by NHS Greater Glasgow. Almost all of Clydebank's 47,000 residents are registered with Clydebank Health Centre and 17% of the population are over 65 years of age.

4.1.1 Care & Repair

It is clear that impaired vision is highly prevalent and commonly under-reported in the older population. To establish if significant sight loss was occurring in a group of older people who had reported falling, Visibility worked in partnership with Lomond & Clyde Care & Repair. This independent charitable organisation assists elderly and disabled people, living in the West Dunbartonshire area, to remain in the safety and comfort of their home. They provide free advice on repairs, improvements, adaptations and accident prevention. Clients of Lomond & Clyde Care & Repair are offered a home safety security survey, which includes checking floor coverings are secure, medicines are stored safely and lighting is adequate in the home. Clients are also asked if they have been involved in an accident in the last year and the nature of the accident.

The manager of Lomond & Clyde Care & Repair wrote to fifty clients who had reported having a fall. The letter explained that Care & Repair were working with a health researcher who was interested in talking to people who had fallen. Interested clients were asked to contact Visibility directly to arrange a suitable date and time for a visit. Twenty-one individuals contacted the researcher and were subsequently interviewed.

4.1.2 Patient Support Service

Visibility, in conjunction with Greater Glasgow NHS Board operate a Patient Support Service in the Eye Department at Gartnavel Hospital, Glasgow. When the falls project began, a number of patients living in the Clydebank area had mentioned to the Patient Support Worker they had fallen recently. To establish if their sight problem had contributed to their

fall, the Patient Support Worker asked if they would be happy to talk to the researcher. Three individuals agreed to be interviewed by the researcher.

5. Participants profile

Twenty-four people were interviewed using a semi-structured interview schedule (appendix 1). This schedule was developed following a review of a number of quality of life and low vision assessment tools. Each interview lasted approximately one hour and participants were interviewed in their own home. Interviews were taped and brief notes were taken and analysed for themes.

5.1 Age

Of the twenty-four participants (23 females, 1 male), seven were aged 85 and over, eight were aged 75 to 84, seven were aged 65 to 74 and two were aged 55 to 64 years.

5.2 Living arrangements

Twenty-one participants lived alone (two in sheltered accommodation). Three participants were living with their son or daughter.

5.3 Health problems

Three participants described their health as 'ok' or 'not too bad' with 88% of participants describing themselves as having more than one serious health problem:

Health problem	Number of participants affected
Osteoporosis/Osteoarthritis	12
Angina/heart problem	10
Bowel/bladder problem	6
High blood pressure	5
Malignancy	4
Thyroid problem	4
Diabetes	3
Asthma	3
Spondylitis	3
Stroke	3
Hiatus hernia	2

Thrombosis	2
Depression	2
Parkinson's disease	1
Epilepsy	1

The risk of falling rises with increasing numbers of simultaneously occurring chronic diseases and it is clear this may be the case for a considerable number of participants. Circulatory disease, chronic obstructive pulmonary disease, depression and arthritis have been associated with increased likelihood of falling.¹³ Chronic diseases may increase the risk of falls, through direct effects of the disease and also indirect effects, such as reduced physical activity, muscle weakness and poor balance.

5.4 Medication

All participants were taking at least one prescribed medication, with the average number of medications being taken, in one day, being five. Three participants weren't sure how many different medications they took, although their repeat prescription showed twenty, twenty-four and thirty items respectively.

Polypharmacy, the practice of prescribing several drugs to one person at the same time, is a risk factor for falls in older people. Medication reviews in patients play an important role in preventing falls.

5.5 Mood

Sixty-seven percent of participants described themselves as depressed, lonely or 'worrying a lot about things'. When asked if they worried about falling, 83% of participants said they were very worried about falling and think about it a lot.

It is important to be aware of the role of psychological issues, such as fear of falling. A recent study investigated whether being scared of falling might actually increase the likelihood of an older person having a fall. A correlation was found between having a past fall, how much fear of falling interfered with daily activities, and loss of physical performance. This suggests that for some older people, having a fall makes them scared of falling again, they then reduce their levels of activity, which increases their physical frailty.¹⁴

5.6 Ability to get out

Only nine participants said they would be happy to go out on their own however, they stated they would prefer being accompanied by someone. The impact of falling on the quality of people's lives cannot be underestimated and many older people self impose restrictions on their normal everyday activities. Fifteen participants said they have stopped going out on their own, either because they are so worried they will fall, or because they have lost confidence since their last fall.

5.7 Moving around

All twenty-four participants said they experienced problems when moving around. Fifty-four percent of participants said they frequently feel dizzy and 46% said they often feel unsteady on their feet.

Vision plays an important role in stabilising balance.¹⁵ Impaired vision has been associated with postural instability in older people, in several studies. Lichtenstein et al. (1988) found that poor near visual acuity was associated with increase sway,¹⁶ and Manchester et al. (1989) found that stability in older adults was significantly decreased when peripheral vision was occluded.¹⁷

5.8 Hearing

Participants were asked to describe their hearing. Sixteen of the twenty-four participants (67%) described themselves as experiencing problems, with seven participants saying they have a significant hearing loss in one or both ears. These seven participants were in possession of at least one hearing aid although two participants said they choose not to wear it. Five participants described themselves as 'slightly deaf' and four participants said they were 'going deaf'.

6. What people said about their eyesight

Appendix 2, illustrates in chart form what participants said about their eyesight.

6.1 Reason for falls

Only four participants mentioned that their eyesight might have contributed in some way to their fall/s:

'I miss my step as I can't see well enough.'

'I'm not sure why I fall, I get dizzy but my eyesight doesn't help.'

'I can't see well enough so I tend to trip on things.'

'My eyesight is failing and it is very hard to judge steps and things.'

However, when the participants were asked to describe what their eyesight was like, sixteen of the twenty-four participants (67%) said they were experiencing significant problems:

'My sight is terrible. I have no sight in my left eye and I only see a little from my right eye.'

'My left eye is really smudgy and I see double with my right eye.'

'It always seems like my glasses are dirty and my sight is getting worse all the time. I have a lot of floaters as well which doesn't help.'

'My eyes are awful now; things are very distorted and wavy.'

These sixteen participants, who described themselves as experiencing significant problems with their eyesight, were asked if they had been told they had a problem with their eyesight. Eight participants said they had cataracts, three said macular degeneration, two said they were unsure of the name of the eye condition, one said glaucoma, one said a problem with their tear duct and another said their sight loss was related to their stroke:

Sight problem	Number of participants affected
Cataracts	8
Macular degeneration	3
Unsure of name	2
Glaucoma	1
Tear duct problem	1
Stroke related sight loss	1

Although the remaining eight participants described their eyesight as 'ok' or 'not too bad' it was clear they were experiencing some problems with their vision:

'I can see ok, but my sight is deteriorating.'

'My eyes are ok, but I get lots of floaters which are a problem.'

'My eyesight is ok, but my right eye is much worse than my left.'

6.2 Registration status

Three participants were registered blind and three were registered partially sighted:

Age	Registered blind	Registered partially sighted
Aged 85 & over	1	2
Aged 75 – 84	0	1
Aged 65 – 74	1	0
Aged 55 - 64	1	0
Aged 54 & under	0	0

6.3 Wearing glasses

Six participants wear bifocals, two wear varifocals, six wear reading glasses and six use both distance and reading glasses. Three participants said glasses are of no use to them now and one participant said they needed new glasses.

Three participants mentioned that they used to wear bifocals but changed either to varifocal lenses or separate reading and distance glasses, as they found judging steps difficult when wearing bifocals. Of

the participants who are registered blind, one wears bifocals, one uses separate reading and distance glasses and the other participant said they need new glasses. Of the participants who are registered partially sighted, one wears reading glasses while the other two participants said glasses are of no use now.

Older people are usually prescribed separate single-lens glasses for distance and near vision or, for convenience, a single pair of bifocal or varifocal glasses. Varifocals are a more modern version of a bifocal with a seamless blend between the distance part of the lens and the reading part. Bifocal or varifocal glasses have benefits for specific tasks that require changes in focal length, including everyday activities like shopping and cooking. However, these glasses have disadvantages because the lower lenses blur floor-level objects at critical distances for detecting environmental hazards.¹⁸ Many older people prefer the convenience of having one pair of glasses and those who are advised to change to two pairs, often don't change their glasses for different tasks, or revert back to wearing their old glasses.

6.4 Magnifier use

Fourteen participants (58%) mentioned that they were in possession of at least one hand-held or stand magnifier. Three participants commented that their magnifier doesn't help, so they don't use it. Of the eleven participants who described their magnifier/s as 'useful', two participants said they rely on their magnifier for everything. Most participants weren't sure where they had got their magnifier/s from. Some participants did mention the hospital Low Vision Aid Clinic or their optician, although many thought they had purchased their magnifier/s from 'The Pound Shop' or 'Betterware' catalogue.

6.5 Contact with optician

Nineteen of the twenty-four participants (79%) said they regularly attend the optician to have their eyes tested; eight annually and eleven every two years. Five participants currently do not attend an optician. Three of these participants commented that they don't see the point in attending an optician, as their local hospital eye department have said nothing can be done to help their eyesight. One participant mentioned that they hadn't seen an optician in over ten years as they thought their eyesight was fine. Another mentioned they hadn't attended an optician for years as they currently attend a hospital eye department.

Some people may have been wearing the same glasses for years, but this doesn't mean the lenses are right for them now. Old, scratched lenses for example can increase the problem of glare and reduce clear vision. Occasionally, a person may receive new glasses from their optician but if they feel they are not as good as their old pair, or are having difficulty adjusting to them, they may return to wearing their old glasses, ignoring the need for an improved prescription.

One participant mentioned that their optician told them two years ago they had bilateral cataracts, while another mentioned they were recently told, by their optician, that they have the start of bilateral cataracts. Neither participant has been referred to their GP or hospital eye department.

6.6 Contact with hospital eye department

Four participants are currently being seen as hospital eye outpatients, seven have been discharged within the last two years and one participant is currently on the waiting list to be seen as an eye outpatient.

Of the participants who are registered blind, two are currently being seen as eye-outpatients and one was discharged two years ago. Of the participants who are registered partially sighted, one is currently being seen as an eye-outpatient, one has recently been discharged and the other is unsure if they have been discharged or not.

6.7 The impact of sight loss

The impact of impaired vision cannot be underestimated. All participants were asked if their eyesight makes particular tasks difficult:

Impact of sight loss	Number of participants
Difficulty with/unable to read small print e.g. medicine labels, cooking instructions, bills, prices on things	17
Difficulty with/can't see television	16
Things appear faint	13
Difficulty with/unable to see numbers on telephone	13
Difficulty making meals	13
Difficulty with/unable to see time on watch	12
Things seem blurred	11
Difficulty pouring drinks (can't see level, hard to judge)	10
Difficulty with/can't tell money apart	10
Difficulty with/can't see faces clearly	10
Difficulty with/can't see photographs clearly	9
Difficulty with/can't see things that are off to the side	7

Seventy-one percent of participants said they had difficulty with, or were unable to read, small print e.g. medicine labels, cooking instructions, bills, prices on things:

'I can't see prices on things at all now. I bought expensive organic bacon the other day by accident.'

'Even with my glasses on and in a good light I can hardly read the cooking instructions on microwave meals.'

'I worry about telling my medicines apart as I can't read any of the labels now.'

Sixty-seven percent of participants said they had difficulty with, or are unable to recognise detail on their television:

'I have to follow Coronation Street by the voices as I can't make out their faces.'

'I can't see the numbers or letters on Countdown and I don't see much detail on the TV at all. I don't watch much now, it's too hard to see.'

Fifty-four percent of participants mentioned experiencing difficulties in the kitchen or when making meals. Some participants mentioned that they rely on someone to prepare food for them:

'Very seldom do I make anything to eat; I can't see my microwave well enough. I hardly eat now so my family bring in food for me.'

'It's hard to see my cooker. I can't even see to spread brown sauce on my slice sausage. I try to use the light from the window to help but I can't make soup now as I can't see to cut up veg or peel potatoes.'

'I burnt my hand when I picked up my teapot by the spout instead of the handle. I couldn't see the difference.'

6.7.1 Footcare

Eight participants mentioned that they can't see well enough to cut their toenails. Five participants said their chiropodist currently cuts their toenails but were concerned to be told recently this will stop due to the redesign of footcare services and the changing role of the chiropodist. The role of the chiropodist in falls prevention is not well recognised, however, foot problems and ill fitting, or inappropriate footwear, could contribute to a fall. Chiropodists, like other health professionals working with older people, are in a position to identify and refer those at risk of a fall to appropriate services.

6.8 Lighting

Lighting at home is a crucial issue for older people. Compared with the amount of light a healthy eye needs at twenty years of age, twice as much is usually required at age forty and three times as much at age sixty. Most older people, as well as many visually impaired people, benefit from increased light levels. One participant said:

'I use the standing lamp when I want to read small print now as the light from the main lamp isn't bright enough.'

While it is generally agreed that, in many cases, increased light levels may allow some visually impaired people better vision, there are also some people for whom their eye condition means that even normal levels of light can be uncomfortable. One of the effects that growing older has on vision is that, on average, less light falls on the retina, and there is less tolerance to glare. Macular degeneration or cataracts can

result in problems or discomfort with glare and bright lights. One participant said,

'I see better when it's quite dark in the house. I have to keep the blinds closed on sunny days.'

Another effect of some types of visual impairment is the need for longer adaptation times for the eye to adjust to different light levels.

Many of the participants homes were poorly lit with a single light source in the centre of the room. Tinnetti & Speechley (1989) found that lighting is a contributory factor in the occurrence of falls and therefore it is important to highlight the importance of lighting levels within the home.¹⁹ Good lighting is particularly important on stairs. The largest proportion of falls are due to falls from stairs or steps with over 60% of deaths resulting from accidents on stairs.²⁰

Impaired vision may make tripping while stepping down more likely because small errors in locating the step could mean 'catching' the edge of the stairs or step with the foot or placing the foot in an unsafe position.²¹ Eighty-three percent of participants said they experience difficulties with stairs, steps or curbs:

'Stairs are terrible. I miss my footing and misjudge distances as I just can't see well enough.'

'I find stairs very hard. I try to find my way by using my walking stick and I am glad when I get the first step.'

Cullinan et al (1979) reported that as many as 60% of people attending an eye clinic see better there than at home. They concluded that this may be due to a difference in testing conditions between the home and clinic and believed lighting levels were the key.²²

7. What people said about their falls

Appendix 3, illustrates what participants said about their falls.

7.1 Frequency of falls

Twenty-three of the twenty-four participants had experienced more than one fall. Some participants were unable to say exactly how many falls they had experienced, but said they had fallen regularly, or on numerous occasions. One participant described having ‘twelve falls in the last year’, while others described themselves as falling less frequently e.g. five falls in the last two years.

Many falls assessment tools only take cognisance of falls that have occurred in the last twelve months. Although an older person may not have fallen in the last year they may have experienced a number of falls over a previous number of years. Two participants mentioned that they hadn’t fallen in the last year:

‘I had numerous falls three years ago but I haven’t fallen in the last year.’

Many participants said they would fall more if they didn’t manage to ‘stop themselves’ falling by holding onto the furniture or walls at home:

‘If I think I’m going to fall, I make sure I hang onto the back of the settee or the bed. I can’t do that outside though, so I don’t like going out on my own, or to new places’.

7.2 Location of falls

Twenty-one percent of participants had fallen at home, with 8% falling outside. Seventy-one percent of participants had fallen, both in their own home and outside, with two participants also falling whilst in hospital. The location in which a fall occurs can be significant. If a person falls when trying to step on or off a bus, they may lose confidence and decide not to use public transport again. This may lead an individual to restrict their daily activities and become more isolated.

7.3 Injuries sustained due to falls

Only one participant said they hadn't received any injuries as a result of their falls. Fifty-four percent of participants had sustained at least one fracture as a result of a fall.

7.4 Medical contact due to falls

Only one participant said they hadn't had any medical contact due to their falls. This participant said:

'I fell off the ladder when I was washing the tiles in my bathroom and then I fell off the ladder again when I was putting curtains up. I also fell going for a bus recently but I only ever end up with bruises so there's no point running to the GP. Unless I have a serious fall no one will know.'

Seventy-one percent of participants said their GP knew about their falls:

'I used to fall a lot, at home, outside and even when I was in hospital. I fell recently and hit my head on the fire. I told my GP and he gave me some tablets. I don't seem to fall as much now.'

'I've talked to my GP about my falls but he didn't suggest anything to help.'

Many older people view falls as an inevitable part of aging and some participants mentioned that, when visiting their GP after a fall, they had been told to expect to fall as they get older and told nothing can be done to help. One participant said:

'I've had lots of falls, but I'm now going down like nobody's business. It's been like this for years and my GP says there is nothing that can be done to help, I'm getting older.'

Seventy-one percent of patients had attended an accident and emergency department at least once after a fall:

'In the last two years I've had four falls and have broken my hip, pelvis and shoulder. I've been taken to casualty every time, but they didn't ask me anything about my falls.'

'I've had about six falls in the last five years. I've broken my shoulder and wrist and cut all my face. I go to the same hospital every time, but no one asks me about the other falls I've had.'

'When I ended up in hospital after my last fall, I told them that I was falling and tripping a lot, but they didn't seem interested. I am terrified I'll have a fall which will finish me off.'

7.5 Future contact for falls

Participants were asked who they would contact, should they have another fall. Twenty-nine percent said they would only contact someone if their fall was serious, 29% said they would phone a relative or friend, 26% said they would use their pendant alarm to summon help, 8% said they would phone an ambulance, 4% said they would phone their GP and 4% said they wait for their home help to arrive.

8. Perceptions of sight loss

Although visual impairment can occur at any time in life, it is primarily an impairment of old age. However, like the rest of the population, there is a great diversity in the needs and wants of individuals with sight loss. Workers in health and social care services may perceive visual impairment as inevitable in older people and therefore non-urgent. As visual impairment is not life threatening and often not immediately obvious, it is frequently overlooked or not addressed.

A visual impairment is generally defined as an eyesight problem that cannot be corrected by wearing glasses, medication or surgery. The main causes of visual impairment are cataracts, diabetic retinopathy, glaucoma and macular degeneration. Every day in the UK over one hundred people start to lose their sight. The public perception of someone with sight loss is of a stereotypical 'blind' person who sees nothing, wears dark glasses, reads Braille and either uses a white stick or has a guide dog. The majority of people who are visually impaired have some degree of useful vision with only 4% seeing nothing at all. Only 3% of blind and partially sighted people read Braille with many people wearing glasses and/or using a magnifier to read large print e.g. font sizes 16-22. Nearly two million people in the UK have a visual impairment but there are only around 5000 guide dog owners. Visually impaired people may be registered blind or partially sighted but there are many people with low vision who are not registered either because they

are not eligible for registration, chose not to be registered or because registration has never been discussed with them. An individual with sight loss who does not fit in to the stereotyped image of a 'blind' person, may be overlooked and not identified as a person who is visually impaired.

It can be difficult for health and social care staff to know if their clients/patients have problems with their functional vision. The spectrum of visual impairment is very wide, covering individuals starting to notice a problem with their sight, to individuals who have little, or no vision. It is important to ask a person what their eyesight is like and to understand how this may affect them in their everyday life e.g. pouring a cup of tea, making a sandwich, completing a crossword, reading bills etc.

9. Identification of visual problems

Older people are major users of health and social care services. Ninety-six percent of participants in this study had seen either their GP or practice nurse within the last three months with the majority of participants having had contact within the last few weeks. Sixty-seven percent of participants had also received a visit from a member of staff from their local social work department within the last three years. Three participants had received a visit from a member of West Dunbartonshire Council's Sensory Impairment team while another participant asked the researcher to refer them into this specialist team.

Older people's use of certain forms of health and social care services has increased substantially over recent years. Increasing numbers of older people are requiring emergency hospital inpatient care and even people who would not normally participate in health care services are likely, in an emergency, to attend an accident and emergency department. Professionals working with older people may be unaware of sight problems in their clients/patients and it is possible that the impact of these visual problems may be overlooked.

It is well recognised that conventional tests of vision often greatly underestimate the actual level of visual impairment in older adults. Visual acuity as a single measure of visual impairment may not be enough to identify older people at risk of falls, as other measures of visual impairment e.g. contrast sensitivity and depth perception are important. West et al (2002) reported that if more sophisticated tests of visual function such as contrast sensitivity, glare recovery, and dark acuity

tests were used, up to 60% of older subjects tested would fail, compared to only 20% of the same group who failed standard visual acuity tests e.g. Snellen.²³

9.1 The hospital setting

Hospital based health professionals have a vital role in detecting sight loss in their patients. Ang & Dhillon (2002) examined hospital junior house officer (JHO) practice of visual acuity testing and ophthalmoscopy (using an ophthalmoscope to examine the inside of the eye) in clerking patients. They found that the majority of JHOs failed to test visual acuity or perform ophthalmoscopy.²⁴ Eye examination skills are taught at medical school and during the pre-registration year, JHOs have the opportunity to practise and consolidate ophthalmic examination skills, detect correctable visual acuity deficit, screen patients for eye disease and check for ophthalmic manifestations of systemic disease such as diabetes. McMurdo & Baines (1988) used a range of visual tests on fifty patients attending a geriatric day hospital. Severe, unexpected visual problems were found in 32%, more than half of which were remediable by cataract extraction. Most of the patients were under the direct care of several medical practitioners, yet undetected visual problems were prevalent.²⁵ Squirrell (2005) examined the prevalence of visual impairment in patients who sustained hip fracture after a fall. Thirty-three percent of patients were classified as visually impaired and 58% had a distance visual acuity of 6/18 or worse in at least one eye. A telephone survey of seventeen units in four local health authorities who care for patients after hip fracture, found that none perform a routine, objective assessment of their patients' visual status. Squirrell concluded that, currently, very little provision is made to assess vision in elderly patients with a history of falls.²⁶

Staff working in accident and emergency departments are under tremendous pressure, aiming to assess and admit, transfer or discharge patients within the Government's four hour target. The focus for doctors and nurses is to treat people and discharge them after an emergency situation has occurred. It can often take longer to gather information from an older person and it is possible that when a person can identify what caused their injury e.g. they fell stepping off a pavement, they may not receive any further questioning about their fall. If a patient mentions their eyesight is deteriorating, combined with the fact that they have had several falls, their visual acuity may be assessed, or the doctor, or nurse,

may suggest the patient contacts their optician. Staff working in emergency medicine are likely to feel that there is little they can do, from a medical point of view, to rectify a person's visual problem.

9.2 The general practitioner

Screening by general medical practitioners has the potential to reach the vast majority of older people. If GP's were still able to offer an annual health check to older people, including at least verbal questioning about visual health would be extremely beneficial.

9.3 The optician

The majority of adults in the UK who attend the optician have their eyes tested every two years. However, more frequent checks are advised from around the age of fifty years, when the lens of the eye begins to deteriorate. Opticians services are widely publicised and advertised, although the emphasis is often on products e.g. glasses, contact lenses and prescription sunglasses rather than care. This may be counterproductive in the case of older people where it may be more beneficial to publicise the optometric eye examination as an essential yearly health check.

It should be remembered however, that traditional vision tests may not adequately predict older peoples' vision when they are engaged in common everyday activities. Reading letters off a chart in a well lit optician's examination room may not be a good predictor of an older person's ability to read cooking instructions on a packet in a dimly lit kitchen. It is important to ask the patient about their functional vision and the tasks that may have become difficult for them. Opticians can also advise their older patients, for example, on the importance of appropriate lighting at home and the benefits of wearing single vision glasses in place of bifocals or varifocals.

9.4 Falls assessment tools

Many factors contribute to the causes of falls and various combinations of these factors have been incorporated into falls assessment tools. Falls assessment tools vary in degree of intensity and time required for completion but to date no single tool has been adopted universally for use in Scotland or the UK.

Although standard six of the National Service Framework for Older People specifically highlights visual impairment as a risk factor for falls, no specific reference is made to screening for visual problems. The NICE guidelines on the assessment and prevention of falls in older people recommend that older people, who present for medical attention because of a fall, or report recurrent falls, should be offered a falls risk assessment. This assessment may include assessment of visual impairment. Some falls assessment tools acknowledge the importance of vision examination. It is logical that people who do not see well are more likely to fall, therefore, all older people undergoing a falls assessment should be screened for visual deterioration.

9.4.1 Clydebank Community Older People's Team

The Community Older People's Team (COPT) is a joint venture between Clydebank Local Health Care Co-operative and West Dunbartonshire Council Social Work department. Staff are co-located, working closely together to minimise duplication of services with structured links to secondary care. The team offers assessment and intervention to people aged 65 years and over, living in the Clydebank and Old Kilpatrick area. Following assessment through a single point of access, a range of services may be provided, including home care, care management nursing, rehabilitation, podiatry, dietetics, small aids, nursing aids, day hospital and day care. The team offers falls risk assessment and falls prevention advice.

The Community Older People's Team have recently completed a falls audit. The recommendations from this work have enabled the team to revise the way in which visual problems are identified in their falls assessment tool. Visual acuity as a single measure of visual impairment may not be enough to identify older people at risk of falls, as other measures of visual impairment e.g. contrast sensitivity and depth perception are important. However, the COPT falls assessment tool has to be user friendly and a manageable size. To get a sense of someone's level of functional vision it is important to ask the correct questions. COPT were aware they should be asking questions but felt they could benefit from input from this project to help define those which are key.

From the findings of this project, the following questions have been suggested to the Community Older People's Team for inclusion in their falls assessment tool. It is suggested they are asked to anyone who mentions their eyesight is causing them problems or to anyone the team

suspect may have problems with their vision. Clients/patients should answer the questions in terms of how they see when wearing their glasses (if worn):

1. Are you able to read small print e.g. medicine labels, cooking instructions, bills?
2. Can you see the detail on your TV & on your watch?
3. Do you overfill cups/glasses when pouring?
4. Because of your eyesight, do you have difficulty judging steps, stairs or kerbs?

The Community Older People's Team are currently revising the questions and guidelines for the assessment of visual problems in their clients who are falling.

9.5 Preventing falls

There is a wide body of research that has investigated preventative interventions to reduce the risk of falling. Simple intervention strategies such as regular eye examinations, keeping the lenses of glasses clean, the use of single-lens glasses and the removal of tripping hazards in the home and public places have the potential to prevent falls in older people.

Research recently commissioned by Help the Aged has looked at why older people often reject advice on preventing falls and what advice they would find acceptable. The research found the best way to motivate older people to engage in falls prevention activity, is to focus on positive activities such as exercise, rather than providing advice on hazard reduction, which older people see as patronising and oppressive. Of those older people who enter falls prevention programmes, most do so only after they have fallen. Among those who are given the opportunity to take part in a falls prevention programme, the proportion who decide not to participate is often over 50%.²⁷

10. Conclusion

Not every fall can be prevented. Preventing falls in older people depends on identifying those most at risk for falling. It is not one factor that places an older person at risk for falls, but rather the cumulative effect of several risk factors e.g. visual impairment, polypharmacy and postural hypotension.

Visual impairment affects about 10% of people aged 65-75 and 20% of those aged 75 and older. Although, only four participants in this project commented that their eyesight might have contributed, in some way, to their falls, 67% of participants said they were experiencing significant problems with their eyesight. Seventy-one percent of participants said they had difficulty with, or were unable to read, small print e.g. medicine labels, cooking instructions, bills, prices on things. The daily impact of impaired vision cannot be underestimated, although it can be easily overlooked. The medical perception of sight loss may be similar to the stereotypical image of a 'blind' person and therefore a person with little sight, will automatically be thought of as 'at risk' for a fall. However, there are likely to be many older people, not fitting the stereotype, for whom undetected eyesight problems are putting them at risk of a fall, although this may not be immediately obvious.

Increasingly, people are expected to be proactive with their health care. Older people, however, are less likely than younger patients to make demands of those working in health and social care and may not follow up issues which arise for them. Many older people fall who do not require medical attention and therefore their fall goes unreported. Health and social care professionals have a key role in identifying those who may be at risk of falling. Ninety-six percent of participants in this study had seen, either their GP, or practice nurse, within the last three months, with the majority of participants having had contact within the last few weeks. Sixty-seven percent of participants also mentioned they had received a visit from a member of staff from their local social work department within the last three years. Older people in contact with health and social care professionals should not only be asked routinely whether they have fallen but if they are experiencing any difficulties with their eyesight.

Many older people cope with deteriorating vision by adapting their lifestyle and reducing mobility. For example they may walk slowly, or with less confidence, avoid cooking or leave mail unopened. Those working with older people have a potentially key role in identifying clients with failing vision and advising them to seek help. Simple verbal questioning about visual health would be a beneficial starting point. They can also promote the importance of regular eye examinations to ensure early detection of eye disease and access to treatment and make referrals to the local social work sensory impairment team.

11. Recommendations

It is recommended that:

1. older people attending primary care and/or an accident & emergency department after a fall are routinely questioned on their vision.
2. older people in contact with health or social care professionals should be asked routinely about falls.
3. older people are encouraged to attend an optician for an annual eye examination.
4. a standardised falls assessment tool, which includes a meaningful assessment of vision, is developed and adopted for use by health and social care professionals.
5. older people should be routinely questioned by health and social care professionals to identify signs of deteriorating vision and referred where appropriate to an optician, social work sensory impairment team or local voluntary organisation.
6. older people are encouraged to participate in falls prevention programmes and receive information in an appropriate format. The importance of deteriorating vision as a risk factor for falls should be highlighted.
7. home falls prevention teams should be in place and a central coordinating point for advice, information and onward referral should be established.
8. visual impairment awareness training should be an integral part of continued professional development for those working in primary care, emergency medicine and social work services to enable them to recognise people with visual impairment.
9. falls prevention awareness training should include reference to the role of visual impairment and be an integral part of continued professional development for those working with older people.
10. awareness campaigns should be implemented jointly across the statutory and voluntary sectors to challenge the stereotypes surrounding visual impairment and blindness.

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Appendix 1 – Interview Schedule

Participant number

Source of referral

Date of visit

Sex

Date of birth

Lives (if alone, how long)

Visitors (family, neighbours, home help)

Getting out

Health (rating & details of conditions)

Medication

Mood (anxiety, insomnia, appetite)

One off or regular falls

Fall/s details (where, time of day, what happened)

Who they've had contact with

Injuries e.g. cuts, fractures

Do you know why you fell

Who knows about your falls

If you fell tomorrow, what would you do

Worry about falling

Stopped doing anything

Home (pendant) alarm

Moving around

Balance, steady, dizzy

Problem with hearing

Vision in general

Both eyes, one eye

Glasses, magnifier, what for, what type e.g. bifocals

Ophthalmic referral

Registered

Last visit to optician

Eyes seemed blurred

Reading numbers on buses, street signs, shop names

Eye/s getting tired

Signing things e.g. pension book

Reading medicine labels, cooking instructions, prices on things

Making meals

Using kettle, cooker, iron

Recognising faces

Reading newspaper & mail

Reading/seeing things that are faint

Feel need a brighter light

Trip on things on the floor or ground

Recognising detail on TV

Seeing things that are off to the side

Moving from dark to light etc

Looking at photographs

Preference for bright or dark

Sight at night

Stairs, steps & curbs

Pouring drinks

Reaching for things

Escalators

Crossing the road

Shopping

Using public transport

Using money

Using telephone

Seeing colours

Bumping into things

Knocking things over

Telling time

Writing cards

Threading a needle

Cutting nails

Last time:

Anyone asked about eyes

Registered to health centre, last visit & why

Saw GP or Nurse

Saw chiropodist

Contact with social work

SI Team

Anyone else, regular contact

Anything else

Appendix 2 – Vision Profile

	Description of Vision	Eye Condition/ Problem	Registered	Glasses	Magnifier	Contact with Optician	Contact with Hospital Eye Department
1	Terrible, no sight in left eye, sees a little from right eye.	Glaucoma.	Blind.	Wears bifocals.	None.	Eyes tested annually.	Currently being seen as eye outpatient.
2	Terrible, no sight in left eye, right eye getting worse.	Cataracts.	Partially Sighted.	Wears reading glasses.	Uses magnifier.	Hasn't been to Optician for a few years as hospital look after eyes.	Currently being seen as eye outpatient.
3	Eyes very sensitive to light & constant cloudiness.	Cataracts.	Partially Sighted.	No use.	Uses an old magnifier as new magnifier from the LVA Clinic doesn't help.	Nothing can be done to help so no point in visiting Optician.	Recently discharged.
4	Tiny bit of remaining sight.	Unsure.	Blind.	Needs new glasses.	Bought a magnifier but felt it didn't help.	Hasn't been for over 2 years but will make appointment.	Discharged 2 years ago.
5	Left eye smudgy & sees double with right eye.	Unsure.	No.	Just got new reading & distance glasses.	Bought a magnifier & uses it.	Eyes tested every 2 years.	Discharged 2 years ago.
6	Good, bilateral cataracts removed. Eyes water a lot.	None.	No.	Has new bifocals.	No.	Eyes tested every 2 years.	Discharged 2 years ago.
7	Eyesight has deteriorated with age.	None.	No.	Bifocals & Varifocals.	No.	Eyes tested a year ago.	No.
8	Left eye particularly bad.	Cataracts.	No.	New varifocals, tripping with bifocals.	No.	Was recently told by Optician has start of bilateral cataracts. Eyes tested annually.	No.
9	Seems like glasses are always dirty & sight is getting worse. Eyes water a lot. Has a lot of floaters.	Cataracts.	No.	Bifocals.	Bought magnifier from Optician.	Told 2 weeks ago by Optician has bilateral cataracts. Eyes tested every 2 years.	No.
10	OK.	No.	No.	Reading glasses.	No.	Eyes tested every 2 years.	No.
11	Good, one eye better	Cataracts.	No.	Used to wear	Relies on 2	Told 2 years ago by	No.

	than the other.			bifocals but now has distance & reading glasses.	magnifiers.	Optician has bilateral cataracts. Due back for eye test and will make appointment.	
12	Short sighted & gets lots of floaters.	No.	No.	Varifocals.	No.	Optician knows about floaters. Eyes tested every 2 years.	No.
13	OK, but hasn't had eyes tested for 10 years.	No.	No.	Reading glasses.	No.	Hasn't had eyes tested for 10 years.	No.
14	No sight in left eye, right eye getting worse. Floaters.	Cataracts.	Blind.	Reading & distance glasses.	Relies on magnifier.	Goes every year. Has told Optician about floaters.	Cataract removed last year but eye has been getting worse. Currently being seen as eye out-patient.
15	Getting worse.	Cataracts.	No.	Bifocals.	Uses magnifier.	Optician has made ophthalmic referral due to presence of cataract. Eyes tested every 2 years.	Currently on waiting list.
16	Poor vision in right eye, strong lights are painful. Floaters. Sees a film over eyes.	No.	No.	Tinted glasses for reading & outside.	Bought magnifier & uses it.	Eyes tested annually.	No.
17	OK.	Cataract.	No.	Distance & reading glasses.	Has a magnifier but doesn't use it.	Eyes tested every 2 years.	Discharged last year ago as Cataract is not getting any bigger.
18	Not too good, especially in one eye.	Macular Degeneration.	No.	Reading glasses.	No.	Eyes tested every year.	No.
19	Not too bad.	No.	No.	Reading glasses.	No.	Eyes tested every 2 years.	No.
20	Eyes water a lot. Sight better in one eye than the other.	Tear Duct problem.	No.	Distance & new reading glasses.	Has a magnifier but doesn't find it useful.	Eyes tested every 2 years.	GP has given new drops to try but if constant watering continues a referral will be made.

21	Right eye worse than left.	No.	No.	Distance & reading glasses. Used to wear bifocals but worried about falling.	No.	Eyes tested annually.	No.
22	Terrible.	Macular Degeneration.	Partially Sighted.	Has 5 pairs of glasses but none help.	Bought 2 magnifiers & uses both.	Optician made referral to hospital eye department. No point in going back to Optician as nothing can be done to help.	Was being seen but unsure if has been discharged.
23	Left eye not good.	Stroke & Cataract-like problem.	No.	Glasses don't help now.	Has 2 magnifiers & uses them both.	Hasn't been to Optician for 4 years and sees no point as nothing can be done to help.	Discharged last year.
24	Things are very distorted and wavy.	Macular Degeneration.	No.	Wears bifocals out of habit but don't help eyesight.	Uses a magnifier.	Optician sent straight to eye casualty as saw bleeding at back of eye. Will continue to have eyes tested every year.	Discharged now.

Appendix 3 - Falls Profile

	Frequency of Falls	Location of Fall/s	Most Recent Fall	Injuries Sustained due to Fall/s	Medical Contact due to Fall/s	Reason for Fall/s
1	Regular. Couple of bad falls in last few weeks.	Home & outside.	Missed pavement.	Bruising to hands & stomach.	GP.	Misses her step as can't see well enough.
2	Used to fall a lot & recently fell.	Home, outside & in hospital.	Hit head on fire at home.	Broken wrist, damaged shoulder, bruises & bumps.	GP, Western Infirmary, Gartnavel Hospital.	Not sure, gets dizzy but her eyesight doesn't help.
3	One fall in last 2 years.	Home.	Fainted at home.	Broken arm.	Western Infirmary.	Fainting.
4	2 falls in last 3 years.	Home.	Slipped off chair at home.	Damaged knees & bruises.	Western Infirmary, Gartnavel Hospital.	Unsure.
5	12 falls in last year.	Mostly outside but has fallen at home.	Fell coming out of opticians.	Fractured wrist (twice), cut knees, bruises to head.	GP, Western Infirmary.	Outside: trips on slabs & kerbs. Home: sole of slipper gets stuck on carpet.
6	Quite a few, especially following stroke.	Home, outside & in hospital.	Fell in hall at home.	Cuts & bruises.	Practice Nurse, GP, Western Infirmary, Drumchapel Hospital.	Not sure, might be due to stroke.
7	3 falls in last year.	At home & outside.	Fell off ladder putting curtains up at home.	Bruising.	None.	Misses footing & loses balance.
8	5 falls in last 3 years.	Outside.	Fell stepping off pavement.	Fractured knee, fractured wrist, black eye, cut face & bruises.	GP, Western Infirmary.	Off balance.
9	Numerous falls in last year.	At home & outside.	Fell trying to step up onto the bus.	Cuts & bruises to head, cut knees, split eyebrow, cut hand, sprained ankle.	GP.	Power goes out of legs & gets lightheaded.
10	Hasn't had a fall for 2 years.	At home.	Tripped on rug when switching TV off.	Broken wrist, broken hip & broken thumb.	GP, Western Infirmary.	Carelessness.
11	4 falls in last 2 years.	At home.	Missed bottom step on stairs.	Fractured hip, broken shoulder, fractured pelvis, broken ankle, cuts & bruises.	GP, Western Infirmary, Drumchapel Hospital.	Gets overtired.

12	6 falls in 5 years.	At home & outside.	Fell going into shopping centre.	Broken shoulder, broken wrist, cut face.	GP, Western Infirmary.	Loses balance or trips & feels lightheaded.
13	Fell 6 & 3 years ago.	At home.	Fell over own feet at home.	Broken wrist, broken hip.	GP, Western Infirmary.	Falls over own feet.
14	3 falls in last 3 years.	At home & outside.	Slipped on black ice.	Fractured shoulder.	Royal Alexandra Hospital.	Can't see well enough.
15	2 falls in last 2 years.	At home & outside.	Was making tea at home & felt was going to fall.	Cuts & bruises.	GP, Western Infirmary.	Unsure.
16	5 falls in last 3 years.	At home & outside.	Tripped walking to toilet during the night.	Bruises.	GP.	Dizziness.
17	3 falls in last 2 years.	At home & outside.	Fell at bottom of stairs at home.	No injuries.	GP.	Legs give way.
18	5 falls in last few years.	Outside.	Fell in shopping centre.	Broken kneecap, cut elbow, sprained wrist.	Practice Nurse, GP, Western Infirmary.	Doesn't know why.
19	5 falls in last 2 years.	At home & outside.	Fell outside the pub.	Fractured shoulder.	GP, Western Infirmary.	Too much to drink.
20	3 falls in 4 years.	At home & outside.	Lost balance reaching into a low cupboard in kitchen.	Fractured wrist, fractured heel bone, bruises.	Western Infirmary.	Loses balance.
21	4 falls in 7 years.	At home & outside.	Fell crossing the road.	Black eyes, crushed shoulder.	GP.	Toe catches on everything.
22	4 falls in last 2 years.	At home & outside.	Fell at back step of house.	Damaged shoulder.	GP.	Trips on things.
23	Numerous falls 3 years ago but hasn't fallen in last year.	At home & outside.	Missed step outside.	Broken ribs, fractured hip.	Western Infirmary.	Misses step, in too much of a hurry.
24	5 falls in last 2 years.	At home & outside.	Fell crossing the road.	Bruising, sprained wrist, put teeth through lip, cut knees.	Western Infirmary.	Failing eyesight .Very hard to judge steps etc.