

# Modifying the environment to reduce the risk of falls

The environment can have a significant role in reducing the risk of falls in elderly people, says Saskia Poller, specialist occupational therapist and education and training lead for The Royal Wolverhampton NHS Trust Falls Prevention Service

Research from the Dementia Services Development Centre at the University of Stirling shows that falls can be reduced by up to 70 per cent by considering dementia friendly design. As an occupational therapist, I would argue that dementia friendly design is actually inclusive design and benefits the majority of residents regardless of their diagnoses and abilities.

Traditionally, falls prevention has incorporated specific, tailored exercises aimed at improving strength, balance and mobility as a substantial part of an individual's treatment. However, where residents are unable or unwilling to follow an exercise programme, it is necessary to look at the environment in order to reduce their risk of falling. An inclusive environment should consider elements such as colour contrast and lighting, signage, fixtures and fittings, the height of furniture, orientation and flooring.<sup>1</sup>

As we get older our ability to see deteriorates. According to the Thomas Pocklington Trust, one in five people aged 75 years and one in two aged 90 years or over, are visually impaired. Older people lose their ability to see low contrast and detail and to judge distances and depth. It also states that a 60 year old needs three times as much light as a 20 year old and a 75 year old needs four times as much light. Improving lighting on its own can reduce the risk of falls by up to 40 per cent.

Colour contrast should be used to highlight grab rails, toilet seats, toilet and bedroom doors, chairs and beds. If a room is decorated in the same colours, it will be difficult for an individual to distinguish the bed, chair and toilet from the background and they are more likely to fall when transferring as a result.

Coloured bedroom doors can also help individuals to find their own rooms, while painting all the toilet doors in a



**If a floor is shiny, it may appear to be wet or slippery**

specific colour, whether they are communal or en-suite, can help residents maintain their independence. Alternatively, doors that you do not want a resident to use, such as the door to a cleaning cupboard, should be painted in the same colour as the walls, which will deter them from opening it. The ageing eye is able to see shades of yellow and red more easily than blue, green and pastel colours

## Appearances count

Some care homes have a more clinical appearance than others. However, it is important to remember that a care home is home to the residents and

people generally do not want to live in a clinical environment. Not only does having all the décor and furnishings in one colour lead to an increased risk of falls, it often results in an increase in agitation and disorientation as residents (particularly those with dementia) do not recognise the environment as home.

Effective signage is also important because if people know where they are going, they are less likely to fall trying to get there. The more prompts a sign provides, the easier it will be to follow and traditional pictures as well as text should be incorporated in a large, clear font that is easy to read.

People recognise words by their shape,

## I Falls prevention

so using capital letters can make this more difficult not just for those with dementia but also for people with dyslexia or those who have had a stroke. Black writing on a yellow background stands out the best. Signs should be fitted about 1.2 metres from the ground because as we age, we become less able to lift our heads and signs that are displayed higher up may therefore be missed.

Furniture should be at the correct height to enable an individual to transfer easily. Often communal rooms have identical seating, with no allowance made for the fact that we are all different heights. For a chair or bed to be the correct height, a person's ankles, knees and hips should be at a 90 degree angle. If a chair or bed is too low for someone, they will struggle to get up from it and if it is too high they are more likely to slide out



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of it. It is therefore important to assess an individual for the correct height chair, both in their room and in communal areas. Chairs should also be in a colour that contrasts with that of the flooring.

### Floor coverings

Special consideration should be given to the type of flooring chosen. Recently there has been a move in care homes to replace carpet with laminate flooring as it is easier to keep clean and can therefore help reduce the risk of infection. However, it is also important to consider that carpet may reduce the risk of injury in the event of a fall as it can provide a softer landing.

A reduction in the use of soft furnishings including carpet can increase noise levels, which can in turn make a room uncomfortable to be in, resulting in an increase in agitation and confusion in some residents. There are now carpets available that have been developed to reduce the risk of infection and some vinyl flooring has shock absorbing acoustic qualities. The layout of a room and the introduction of sound absorbing materials such as acoustic tiles to reduce noise levels should also be considered.

It is also important to consider colour, pattern and flooring material. If a floor is shiny, it may appear wet or slippery, while shadows or dark areas may look like holes. Threshold strips in a contrasting colour are likely to cause hesitation or result in people trying to step over them. Changes in flooring colour may be perceived as a change in level, again resulting in hesitation or unsteadiness, while busy and bold patterns can be confusing and stripes are particularly difficult for people with dementia to navigate.

Using traditional fixtures and fittings can help maintain independence. If someone can recognise a piece of furniture they are less likely to fall. This can be particularly beneficial in bathrooms. For example, residents are likely to find it easier to recognise a lever toilet flush than a push button and individual, cross head taps are more recognisable than mixer taps or sensor taps.

A familiar item that is visible from the bed may help to orientate a resident. They are more likely to feel 'at home' in

### Mnemonic to remind staff to consider falls risk and what can be done about it

**Normal** – What is normal for that individual? If their behaviour has changed, consider infection, transient ischemic attack (TIA), medication, the environment and delirium

**Osteoporosis** – Consider bone health; if someone has osteoporosis, the consequences of a fall are more severe

**Shoes and slippers** – Is footwear fit for purpose? It should be comfortable and supportive. If someone has painful feet, ask a GP to consider a referral to chiropody / podiatry

**Toilet** - Do they know where it is and how to get there? If they are getting up more than three times in the night to go to the toilet/experiencing urgency or frequency of urine/experiencing bowel problems, ask a GP to consider referral to continence services

**Urine** - Are there any signs/risks of urine infection or dehydration? What is the fluid target? Consider alternative methods of increasing intake

**Medication, medical condition and mobility** - Some medicines that may increase falls risk include analgesia, sedatives, blood pressure tablets and diabetes medication. Have they had an annual medication review? Are their medical conditions being managed as well as they could be? Are walking aids within reach and fit for purpose? Are wheelchairs serviced regularly and used appropriately?

**Beds, bells and blood pressure** - Consider a high/low bed. Is a buzzer within reach? Do they recognise it? Do they experience postural hypotension or other problems with dizziness/balance? If yes, ask a GP to consider referral to falls clinic/vestibular clinic/physiotherapy

**Lighting** – Ensure there is good lighting throughout the home; daylight helps with orientation. Is there access to the outdoors as vitamin D absorption supports bone health

**Eyesight, exercise and environment** – Have they had an annual eye check? Are they wearing the correct glasses and are they clean? Balance and strength exercises three times per week are required to maintain mobility. Make use of clear signage and colour contrast. Ensure correct height of furniture. Minimise trip hazards

**Support and supervision** - What level of supervision is required? Consider sensor alarms. If someone is mobile then they are at risk of falling. Consider and document all options

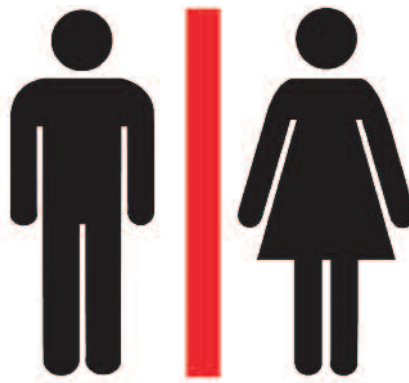
The NO STUMBLES mnemonic was developed by Saskia Poller and Tracie Wilson, quality improvement nurse, to raise awareness of falls risk factors. The poster received a 'highly commended' in the Adoption of Innovation category at the Meridian Celebration of Innovation Awards in July 2019

a room if it feels familiar. This may also reduce agitation and the need to walk a lot. Having a row of ornaments or photographs on the window ledge is often insufficient as they are too small and too far away to be easily recognised. Access into and around rooms should be kept clear of trip hazards. Encouraging an individual to decorate and personalise their walking aids may result in them being used more appropriately and more often.

Research has shown that getting the environment right can have important benefits for the individual. There is an evidence base that shows that environments that have been adapted for supporting cognition can reduce the likelihood of falls, agitation, distress and the use of antipsychotic medication. It can also support way finding, activity, nutritional intake, sleeping patterns, communication, a better quality of life, independence and wellbeing.<sup>3</sup>

### Conclusion

In addition to the environment, we should also consider purposeful activity. According to Alzheimer’s Australia: “Engagement in activities that are purposeful is essential for our wellbeing. It encourages us to feel good about ourselves, brings meaning to our lives,



**TOILET**

People recognise words by their shape, so using capital letters can make this more difficult

helps us to feel a sense of belonging, provides opportunities for using our skills and generally supports our wellbeing”. This applies to all of us, but elderly people in particular are likely to lose their sense of self worth once they enter a care home, particularly if they are living with dementia. This can lead to agitation and distress and may result in the increased use of medication.

In order for an individual to maintain their mobility they need to exercise three times per week. For someone to improve their mobility, this needs to increase to five times per week. Residents should therefore be encouraged to maintain their mobility through a variety of activities including exercise, dance and walking.

While there is still room for more evidence supporting environmental adaptation, the evidence suggests that when we adapt the environment to support cognitive impairment and when those who work within such an environment practice person centred support, it enables people with dementia to live and function better. **TCHE**

### References

1. Thomas Pockington Trust. (2013) *Research Discussion Paper 12. Falls in Older People with Sight Loss: A review of emerging research and key action points.*
2. The Dementia Services Development Centre (DSDC). *The Importance of Lighting.* [dementia.stir.ac.uk/design/virtual-environments/importance-design/importance-lighting].
3. Bowes A, Dawson A et al. Designing environments for people with dementia: a structured literature review. *Br J Visual Impairment* 2016; 34(3).



### Saskia Poller

Saskia Poller is a specialist occupational therapist and education and training lead for The Royal Wolverhampton NHS Trust Falls Prevention Service. Prior to taking on this role, she was the falls prevention service co-ordinator working with people who have fallen or are at risk of falling. She has developed a training package for all levels of care home staff in Wolverhampton focusing on falls prevention and the environment.

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