

PROTECTIVE AND ADAPTIVE CLOTHING

Protective clothing for people prone to falls

Falls are a growing problem for older adults, as they are a leading cause of injury-related hospitalizations and over 90% of hip fractures (Norton et al., 2015). When compared to those who do not fall, those who do experience a larger decline in functional abilities and greater risk of subsequent institutionalization (Kiel et al., 1991; Tinetti et al., 1993). The risk of injury during a fall depends on the characteristics of the fall (for example, falling sideways onto the hip), as well as the soft tissue strength and bone density in resisting trauma (Cummings et al., 1994; Tinetti et al., 1995). Certain strategies are well known for potentially reducing the risk of falls, such as decluttering the environment of trip hazards, physical rehabilitation to improve muscle strength and balance, lighting a dark hallway, etc. However, not all falls are preventable and not all the aforementioned strategies are effective, especially if the individual has other medical issues, such as fainting or cognitive changes, that prevent them from adopting the strategies (Fuller, 2000).

In recent years, protective clothing has emerged as a tool to reduce the risk of injury from falls and may be especially beneficial for those who are not able to prevent or reduce their falls (Korall et al., 2019). There is various protective clothing available, such as helmets, elbow pads, hip protectors, and knee pads, with hip protectors being the most commonly used. There is no specific brand that is deemed to be superior to others. Therefore, decisions should be made based on personal circumstances, finances, and best judgement.

It is important to note that protective clothing alone will not necessarily prevent injuries. However, when used in conjunction with medications and exercise, overall function may be optimized. For information on where protective clothing can be purchased, please contact Parkinson Society BC at 1-800-668-3330 or email info@parkinson.bc.ca.

Common types of protective clothing

Helmets:

Although medical helmets are traditionally used for seizures, they can also be worn to protect the head from injuries in the event of a fall caused by balance issues or fainting. These can be either hard or soft shelled, and come in a variety of forms to make helmets worn on a daily basis appear as discreet as possible, such as baseball cap and toque styles. Regular biking helmets can also be worn if discretion is not of particular importance to the wearer.

The main difference between a hard-shelled helmet and a soft-shelled one is the materials the helmet is made of. Hard-shelled helmets have both a hard outer layer, as well as a soft inner layer. The hard outer layer is meant to spread the force of the impact more broadly, while the soft inner

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layer absorbs the energy of the impact so your head does not. On the other hand, soft-shelled helmets use materials that can both spread the impact and absorb its energy.

Both types of helmets are equally effective at preventing head injuries and the decision of which to wear is a personal one. Hard-shelled helmets are more resistant to penetrations from objects and more durable long term, but they are heavier, less discrete, and have higher force impact, which causes any minor force sustained to feel like an abrupt stop. Soft-shelled helmets are lighter, more comfortable, and tend to sit better on the head, so readjustment is typically not needed throughout the day. As protective helmets tend to be worn for more hours than a sports helmet, most people opt for a soft-shelled helmet for comfort reasons.

Elbow and knee pads:

Elbow and knee pads can help lessen fall-related injuries on the joints, such as bruises, skin tears, and fractures (Park et al., 2019). These protective pads do not need to be specifically designed for medical needs, as general protective sportswear, such as volleyball elbow and knee pads, will achieve the same effect at a lower cost. Like protective helmets, elbow and knee pads can be both hard or soft shelled. Both are equally effective; the decision of which to use is personal and depends on one's lifestyle.

Hip protectors:

A hip protector is a type of pants or underwear that has padding embedded into its sides to prevent hip fractures following a fall. There are a variety of styles produced by many companies (Fraser Health, n.d.). Hip protectors are usually worn as underwear underneath trousers. They work to absorb the impact of a fall and protect the hip bone, especially for those who land on the side of their hip instead of on their bottom. As hip protectors were designed to specifically target populations with chronic health conditions that may cause falls, they tend to be more expensive than the average pair of shorts or pants. For a more affordable option, users have found that padded bike shorts are just as effective, although the buyer will need to ensure the garment has padding on the outside of the hip area rather than just on the bottom. Amazon sells affordable hip protector options, though it is advisable to carefully read reviews and verify the legitimacy of the seller.

Adaptive clothing for mobility challenges

Adaptive clothing is specifically designed to help make dressing easier for those with mobility issues. Having adaptive clothing can make a positive difference in a person's life by helping them to maintain their independence, while also improving the ease at which caregivers can assist them in getting dressed if needed.

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Who is adaptive clothing for?

Anyone can benefit from adaptive clothing. It is most ideal for those who have dexterity and/or mobility issues, or those living with chronic conditions that make dressing difficult on a day-to-day basis. Adaptive clothing can also help to accommodate medical devices, such as catheters, more comfortably than traditional clothing.

How is adaptive clothing different from other types of clothing?

One of the main differences between adaptive clothing and other types of clothing is that adaptive clothing comes with easy-to-use closures, such as Velcro or snaps instead of zips or buttons, lessening the impact of dexterity issues on dressing. Adaptive clothing materials are usually stretchier, with elastic waistbands to help fabrics hold up better throughout the day while maintaining comfort. Seams also tend to be flat to lessen friction while dressing, as well as long to accommodate incontinence pads and other medical devices/materials that may need to be changed throughout the day. The main importance of adaptive clothing is to be functional while also maintaining a discreet appearance, so that the clothing looks consistent with traditional fashion.

What to look for when choosing adaptive clothing:

- **Easier seam closures:** Opt for Velcro, snap buttons, or magnetic buttons instead of traditional zippers and buttons.
- **Higher backs on pants, as well as elastic waistbands:** These provide more coverage if pants tend to fall down, and are easy to pull down quickly. Elastic waistbands also help to accommodate fluctuations in weight better.
- **Shirts or pants that open on the sides or back:** Such openings facilitate an easier dressing experience.
- **Wider necklines:** Wider necklines and armholes allow for more movement and mobility while dressing.
- **Location and number of seams:** Consider this aspect depending on need. For example, if the user is incontinent and needs frequent changing, having more than one seam on the pants will help make this easier. Equally, pants that open from both sides are more accessible than pants with seams only at the front.
- **Anti-slip grips:** These grips can be found on both socks and shoes, and can help prevent slips, especially on non-carpeted floors.
- **Material of the adaptive clothing:** Ideally, materials should be lightweight and breathable, such as cotton, nylon, polyester, rayon, linen, or silk, to prevent skin issues. Having a more slippery-textured fabric, such as silk, can also help with mobility in bed if the user has difficulty rolling or turning. However, it is important to note that some fabrics absorb moisture better than others and may not be ideal for those who sweat more. This is especially true of cotton, linen, and silk.

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Remember that the main purpose of adaptive clothing is to make dressing and undressing easier, with the added bonus of having a discrete design to look like everyday clothing. There are no right or wrong types of clothing, as long as it is accessible and serves the purpose of maintaining independence in activities of daily living. Consult an occupational therapist if you are not sure what types of adaptive clothing would be appropriate for your needs.

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