

Mobility and walking impairments are a major concern for people with HD. They may have choreic movement (abnormal involuntary movement caused by brief, irregular muscle contractions) which if present in the upper limbs, trunk and lower limbs may affect their gait pattern and result in decreased balance and coordination skills. They can also be affected by motor symptoms, which cause slow initiation of movements and slow, wide based gait pattern. It is vital that independence and mobility is maintained for as long as possible.

## **KEY RECOMMENDATIONS**

### **FOR ALL AMBULATORY INDIVIDUALS:**

- Focus on balance and safety and do not let involuntary movements from chorea influence your judgement regarding that person's ability to walk.
- Train family/carers to reinforce use of devices or any safety suggestions, such as big steps when turning or keeping hands free for balance.
- Have carers remind the person with HD to avoid dual-tasks if this is an issue for them (i.e., not to carry anything or talk when walking).
- Facilitate access to re-assessment/treatment as mobility/compliance changes.
- Encourage the use of appropriate footwear (see HD Clinical Tips: Footwear and Orthotics, for further recommendations).

### **FOR PEOPLE WHO FALL / AT HIGH FALL RISK:**

- Create a limited, safe area to allow ambulation, especially in those with repeated falls.
- Use protective helmets/hats, elbow pads, knee pads, and hip protectors in people with HD who fall frequently.
- An individual assessment of walking devices by a physiotherapist is recommended. Although canes or walking sticks may be useful early in the disease process, once falls occur, a four-wheeled rollator walker is highly recommended.
- It will be easier for the person with HD to learn to use a walking device earlier in the disease process, thus early introduction is recommended even if the device is only used sporadically.
- Later in the disease, people with HD are often unable to use assistive devices due to cognitive issues, and may do better walking hand in hand with one or two carers.

**WALKING DEVICES**

Types	Considerations
 <p><b>Straight canes or Walking stick/s</b></p>	<ul style="list-style-type: none"> <li>• Supports only small % of body weight and cannot prevent falls, but may improve balance in those with mild balance deficits.</li> <li>• A heavier stick may help with coordination.</li> <li>• Walking sticks are often preferred by people with HD as they allow natural arm movement and do not slow gait.</li> <li>• It is important to consider the problems associated with choreiform movements and whether sticks are appropriate.</li> </ul>
<p><b>Four-wheeled Rollator Walker</b></p> 	<ul style="list-style-type: none"> <li>• It is easier to push walkers/frames rather than lift canes as canes increase stance time (1).</li> <li>• Larger wheels move better on uneven surfaces indoors and out.</li> <li>• Depending on the size, walkers can be cumbersome and difficult to manoeuvre through some areas.</li> </ul> <p><u>Modifications to consider:</u></p> <ul style="list-style-type: none"> <li>• If it has a seat it is only safe with a back support. Otherwise modify it so that either the seat has a tray or a back.</li> <li>• In individuals who fall backwards, use of a heavier framed walker may be beneficial in adding additional stability.</li> </ul> <p><b><u>4-wheeled frames:</u></b></p> <ul style="list-style-type: none"> <li>• The 4-wheeled rollator has been shown to be the safest walking device for people with HD (1).</li> <li>• The 4-wheeled walker produced safer and less variable gait when compared to other devices (1).</li> </ul>

**WALKING DEVICES** *continued*

Types	Considerations
<p data-bbox="134 479 523 555"><b>Four-wheeled Forearm Support Frames</b></p> 	<p data-bbox="580 479 703 510"><u>Function:</u></p> <p data-bbox="580 521 1414 589">To give more support through the forearms, particularly if hand function is impaired.</p> <ul data-bbox="580 607 1433 898" style="list-style-type: none"> <li>• May be cumbersome.</li> <li>• May provide opportunity to maintain or extend mobility and independence.</li> <li>• Supervision or assistance may be required.</li> <li>• Hard surfaces under supports may require padding to prevent self-injury from involuntary movements.</li> </ul> <p data-bbox="580 927 667 958"><u>Types:</u></p> <ul data-bbox="580 981 1075 1122" style="list-style-type: none"> <li>• Gutter frames</li> <li>• Split-level forearm support</li> <li>• Frame with single padded support.</li> </ul>
<p data-bbox="153 1151 504 1263"><b>Frames with Two Front Wheels and Two Rear Feet</b></p> 	<ul data-bbox="580 1167 1458 1541" style="list-style-type: none"> <li>• Difficult to manoeuvre during turns; requires the user to lift while turning, which leads to more stumbles and increases fall risk.</li> <li>• Useful if the 4-wheeled rollator walker tends to 'run away' from the person using the walker, or when brakes cannot be used.</li> <li>• Best used by people who live in purpose built homes where there are no long hallways and no need to make turns.</li> <li>• Difficult to move over carpet pile.</li> </ul>

## **KEY RECOMMENDATIONS**

### **AMBULATION AND GAIT TRAINING**

- People with HD should be encouraged to engage in regular walking throughout all stages of the disease.
- Gait training should be functional and patient-specific.
- Falls should not prevent walking (see Policy for Falls Management in Huntington's Disease).
- Footwear should enhance, not hinder walking.
- Other factors other than HD-related symptoms need to be considered when implementing gait re-training (e.g., musculoskeletal, cardiovascular systems).

### **WALKING AIDS**

- Walking aids should enhance walking, and not just prevent falls.
- Level of support required by people with HD can be variable day to day or week to week.
- 4-wheeled walker is the walking aid of choice.

#### **References:**

1. Kloos et al 2012 *The impact of different types of assistive devices on gait measures and safety in Huntington's disease. PLoS ONE* 7(2): 1-7.

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