

Hip

Flexion

Assist

Device



[Introduction]

- The Hip Flexion Assist Device (HFAD) is a new product for individuals with Multiple Sclerosis (MS) who are experiencing hip flexor weakness.
- The HFAD is designed to improve gait performance by assisting hip flexion, as well as knee flexion and ankle dorsiflexion.

[Design Rationale]

- It is common for patients with MS to experience a disrupted gait due to hip flexor, knee flexor, and ankle dorsiflexor weakness.
- Typically, this results in difficulty achieving sufficient foot clearance during gait.
- A disrupted gait can impair a patient's ability to perform the routines of their daily life.

[Design Rationale]

- In MS, the Ankle Foot Orthosis (AFO) is the most commonly used lower-extremity orthosis, partly because it is lighter than an orthosis that extends above the knee.
- The AFO can help compensate for ankle dorsiflexor weakness, however, it is unable to compensate for hip or knee flexor weakness.
- Therefore, oftentimes an AFO fails to restore sufficient foot clearance.

[HFAD Features]

- The HFAD overcomes these difficulties
- It is lightweight and able to compensate for hip flexor, knee flexor, and ankle dorsiflexor weakness, thus resulting in improved gait

[Validation]

- A recent study¹ conducted at the Cleveland Clinic Foundation examined the efficacy and safety of the HFAD in ambulatory MS patients
- This study was funded by the National MS Society and published in the Archives of Physical Medicine and Rehabilitation

1. Sutliff, Matthew H., PT; Jonathan M. Naft, CPO; Darlene K. Stough, RN; Jar Chi Lee, MS; Susana S. Arrigain, MA; and Francois A. Bethoux, MD. "Efficacy and Safety of a Hip Flexion Assist Orthosis in Ambulatory Multiple Sclerosis Patients." Archives of Physical Medicine and Rehabilitation 89 (2008): 1611-1617.

[Validation – Results]

The results of the study indicated that use of the HFAD:

- Significantly improved gait performance
- Improved strength in the limb fitted with the HFAD
- Increased daily activity level

[Validation – Results]

After eight weeks of HFAD use:

- Average of 27% improvement in the time needed to walk 25 feet (7.62 m)
- Average of 24% improvement in the distance walked in six minutes
- Average level of user satisfaction with the HFAD rated a 39 out of 45

[Customer Feedback]

- HFAD customer feedback has been very positive
- One HFAD user who nicknamed the HFAD the “slingshot” says:

“I've been enjoying the new slingshot tremendously. It is sturdy and streamlined. One word -- FABULOUS!!! I particularly like the belt.”

- Beth

[The HFAD]

**Dynamic
Tension
Bands**



**Comfortable
Waist Band**

[HFAD – Waist Band]

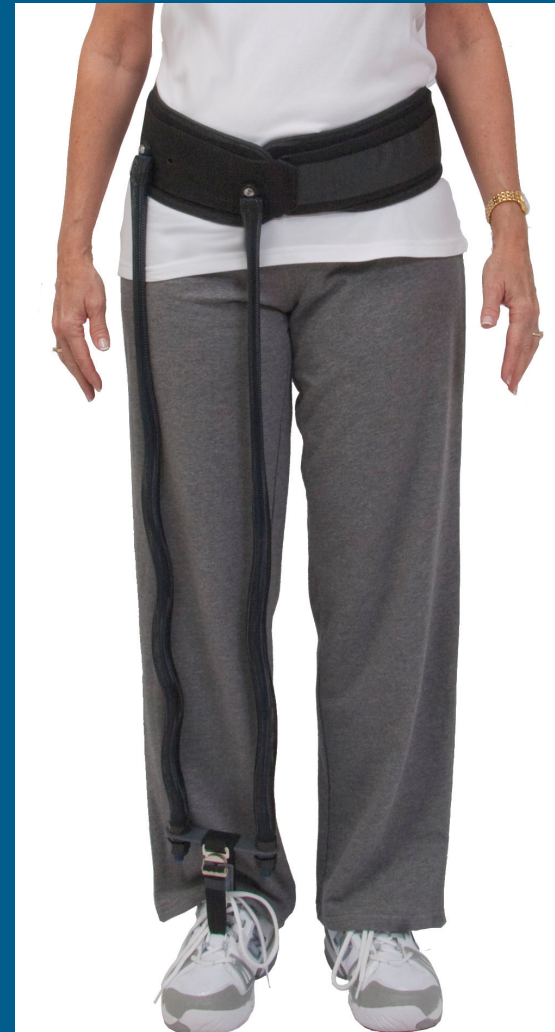


**Durable
Heavy Duty
Webbing with
Hook & Loop
Closure**

**Soft
Comfortable
Neoprene
Lining**

[HFAD – Tension Bands]

- Assist hip flexion, knee flexion and ankle dorsiflexion
- Consist of elastic cores covered with mesh sleeves
- Run along the inner and outer sides of the weaker leg



[HFAD – Tension Bands]

**Width of
Tension
Bands can be
adjusted on
the Waist
Band to suit
the wearer**



[HFAD – Popliteal Strap]

- Optional item that attaches to the tension bands & rests behind the knee
- Helps initiate knee flexion during the swing phase of gait



- Can help reduce knee hyperextension
- Can be helpful for patients with stiffness in the leg due to extensor spasticity, a condition that can make it more difficult to bend the knee

[HFAD – Attachment]

The HFAD:

- Attaches to shoes that lace up
- Requires no special footwear



[HFAD – Assist Adjustment]



The amount of assist is easily adjustable via the:

- Grips
- Adjustment Strap

[HFAD – Wear Options]

The HFAD may be worn:



Over
Clothing

OR

Under
Clothing



[Indications]

The HFAD may be beneficial for individuals with MS who:

- Have hip flexor, knee flexor, or ankle dorsiflexor weakness
- Fatigue when walking, resulting in limited endurance
- Drag the weaker leg with compensatory movements (such as hip hiking, circumduction of the effected leg, or vaulting off of the contralateral foot)
- Have tried to use an AFO to compensate for foot drop, but still struggle to walk due to hip and knee flexor weakness

[Contraindications]

The HFAD should not be used by individuals who have:

- Back pain of 4/10 or higher (on a numeric pain rating scale)
- Open wounds in the waist region
- Feeding tubes
- Valgus deformities
- Upper extremity weakness (that may impair proper donning and doffing of the device)
- Impaired coordination (that may impair proper donning and doffing of the device)
- Significantly impaired cognition (that may impair proper donning and doffing or safe use of the device)

[HFAD Features]

- Lightweight
- Comfortable
- Easily adjustable
- Easy to put on and take off
- May be worn over or under clothing
- Requires no special footwear
- Manufactured from durable materials

[Ordering Information]

The HFAD is available in stock sizes:

SIZE	WAIST CIRCUMFERENCE	
	(in)	(cm)
Small	24 - 32	61 - 82
Medium	33 - 40	83 - 102
Large	41 - 48	103 - 122

Please specify Right, Left or Bi-lateral and Regular Length or Extra Long [height over 5'10" (1.78m)] when ordering.

[Contact Information – U.S.]

Customers within the U.S. please contact:

BTM Customer Service

888-344-0450

248-588-8959

Fax: 248-588-5351

For more information please visit:

MSHFAD.com



[Contact Information - International]

International Customers please contact:

Becker Orthopedic International Customer Service

800-521-2192

248-588-7480

Fax: 248-588-9511

