

Managing Challenging Neurological Presentations



Therapeutic Bracing with Precise Dynamic Stimulus and
Proper Posturing *only from...*


Patient Inspired Solutions

Precise Biomechanical Control and Stimulus of Targeted Muscles

Address Posture, Muscle Length and Strength,
Improve Function, Increase Independence

Treatment Specialties	Age Groups
Spasticity	
Cerebral Palsy	Pediatric, Adolescent/Adult
Traumatic Brain Injury (TBI)	Pediatric, Adolescent/Adult
CVA - Stroke	Pediatric, Adolescent/Adult
Spinal Cord Injury	Pediatric, Adolescent/Adult
Spina Bifida	Pediatric, Adolescent/Adult
Multiple Sclerosis	Adult
Other Neuro	
Brachial Plexus Injury	Pediatric, Adolescent/Adult

Biomechanical Rationale

Ultraflex neurological components and custom braces provide postural support and therapeutic assist to lengthen and strengthen muscles and improve passive range of motion. Ultraflex can also be used to control musculoskeletal alignment and assist movement for weak musculature.

Ultraflex orthoses provide precise external torque to the involved limb segment(s) to stimulate muscle growth and improve posture and function. The combination dynamic/static orthoses have integrated controls that are used to ease donning and posture the limbs for maximum therapeutic stimulus below the stretch reflex.

Ultraflex dynamic stimulus technology is based on low-load, prolonged stress (LLPS) set precisely for maximum compliance. This allows for consistent low level tension over an extended period of time. Precise LLPS technology positively affects limb range, posture, and function.

Common Treatment Goals

- Conservatively maintain and increase muscle length
- Maintain muscle length during growth
- Improve posture, muscle balance
- Improve function: lower extremity - gait; upper extremity - grasp, pinch and release
- Extend treatment to ADLs
- Delay time between more involved treatments
- Simplify and reduce daytime/functional bracing

To learn more:

Call: 800-220-6670

Visit: www.ultraflexsystems.com

What Do Clinicians Report Concerning the Efficacy of Ultraflex?

Lower extremity interventions have reportedly allowed individuals to be managed by less aggressive and lower profile daytime bracing. Clinically, patients have demonstrated improved gait characteristics such as increased cadence and decreased scissoring after being treated with Ultraflex bracing.¹

Research shows that electrical stimulation and Ultraflex bracing dramatically decreases spasticity of the upper extremity in young patients with cerebral palsy.²

Among the subjects who wore the Ultraflex brace according to the outlined protocol, improvements were seen at the 10-month assessment in passive range of motion at either the elbow or wrist or in both joints in five of the seven limbs examined.³

Compliance

Ultraflex orthoses should be worn for as many hours as tolerated during rest, sleep, or quiet activity. Research shows a positive correlation between brace wear and range of motion, therefore 5-10 hours of wear time in a 24 hour period is recommended for maximum benefit.

Patients may need to gradually work into wearing their orthosis and should follow the specific instructions given to them by their orthotist

(Adjustments or modifications may be necessary to the orthosis. Patients should report any discomfort, irritation, or rubbing caused by the orthosis to the orthotist.)

Delivering Patient Inspired Solutions

For Support	Call 800-220-6670, Monday - Friday, 7:00am - 6:00pm (EST)
Clinical	brace selection/design, measurement, casting, fitting, wear schedule guidelines
Reimbursement	pricing, coding, and prior authorization recommendations
Fabrication	assistance with fabrication or for custom fabrication through Ultraflex
Ultraflex's Patient Assistance Program	uninsured or patients with financial need

Our FDA Class I braces are available only through a physician's prescription and are fitted and billed by certified orthotists. Ultraflex braces and components are covered by most insurance providers.

Set up your own in-service training session
800-220-6670

References

1. KM Smith. A New Design For the Management of the Cerebral Palsy Hip. *The Academy Today*. July 2005.

2. LR Sheker, SP Cheshier, S Ramirez. Neuromuscular Electrical Stimulation and Dynamic Bracing as a Treatment for Upper-Extremity Spasticity in Children with Cerebral Palsy. *Journal of Hand Surgery (British and European Volume)*. 1999) 24B 2: 226-232.

3. A Yasukawa, J Lulinski, L Thornton, P Jaudes. Improving Elbow and Wrist Range of Motion Using a Dynamic and Static Combination Orthosis. *Journal of Prosthetics and Orthotics*. Volume 20 No. 2 April 2008.

What Do Patients Say About Ultraflex?



“Wearing my brace makes my legs feel better.”
“I wear my brace after school while I’m playing.”

“Now I can keep up with my friends.”

Ultraflex Exclusive Component Technology*





Component	Description	Features
	Elbow, Wrist, Knee, and Ankle Orthosis Platform and Power Unit	<ul style="list-style-type: none"> • Available in extension, flexion, or bi-directional assist • Low - 45in. lbs., medium - 60in. lbs., high - 90 in. lbs., torque outputs • Don/doff lock • Any flexion or extension range can be locked out with platform
	Knee, Wrist, or Elbow Range of Motion Dial Lock	<ul style="list-style-type: none"> • Pediatric Knee and Elbow range 0° to 115°, Adult Knee and elbow range: -15° to 130° (with stop in place) • Wrist range: -75° to 75° (with stop in place) • Any sector can be locked out within available range to provide for protected motion
	Ankle Pediatric Range of Motion Dial Lock	<ul style="list-style-type: none"> • Range: -50° to 50° • Short center section – bends closely from joint to shell • Any sector can be locked out within available range to provide for protected motion
	Lively Ankle Design Stirrup Kit	<ul style="list-style-type: none"> • Allows sub-talar motion • Set screw available for sub-talar lock positioning (5 lock positions)
	Dynamic Finger Pan	<ul style="list-style-type: none"> • Custom molded per patient cast • Spring design used to exercise the intrinsic musculature of the hand complex • Finger pan can be mounted either volar or dorsal • Standard with FirstFlex system
	Lightweight Wrist Extension Assist OR Flexion Assist	<ul style="list-style-type: none"> • Range: -55° to 55° • Short center section – bends closely from joint to shell • No ROM stop – may use laterally with wrist ROM dial lock (WHO ROM) medially

*Components come with a limited lifetime warranty.



“My legs don’t get tired before I am done riding anymore.”

General Guidelines for Ultraflex LE Bracing



Clinical Problem	Clinical Goals	Ultraflex Solution/Rx	Indications
Soleus spasticity *Soleus test R1 value <15°	<ul style="list-style-type: none"> Conservatively maintain and increase length of soleus muscle Delay heel cord lengthening surgery Complement multi-level Botulinum Toxin Type A and serial casting Maintain status or approach normal R1 value for soleus test 	 <p>Rx: Ultraflex AFO CM</p>	<ul style="list-style-type: none"> Cerebral Palsy Stroke/CVA Traumatic Brain Injury Spinal Cord Injury Multiple Sclerosis Spina Bifida
Gastroc-soleus spasticity *Gastroc test R1 value ≤5°	<ul style="list-style-type: none"> Conservatively maintain and increase muscle length gastroc-soleus (and hamstrings) Delay heel cord lengthening surgery Complement multi-level Botulinum Toxin Type A and serial casting Maintain status or approach normal R1 value for gastroc test 	 <p>Rx: Ultraflex KAFO CM with Dynamic Ankle and Static/Solid Knee</p>	<ul style="list-style-type: none"> Cerebral Palsy Stroke/CVA Traumatic Brain Injury Spina Bifida
Hamstring spasticity *Popliteal test R1 value >30°	<ul style="list-style-type: none"> Conservatively maintain and increase muscle length of hamstrings (and gastroc-soleus) Delay hamstring lengthening surgery Complement multi-level Botulinum Toxin Type A and serial casting Maintain status or approach normal R1 value for popliteal test 	 <p>Rx: Ultraflex KAFO CM with Dynamic Knee and Static/Solid Ankle</p>	<ul style="list-style-type: none"> Cerebral Palsy Stroke/CVA Traumatic Brain Injury Spina Bifida
Hamstring, gastroc-soleus spasticity *Popliteal test R1 value >30°, gastroc test R1 value ≤ 5°, soleus test R1 value <15°	<ul style="list-style-type: none"> Conservatively maintain and increase muscle length of hamstrings (and gastroc-soleus) Delay hamstring lengthening surgery Complement multi-level Botulinum Toxin Type A and serial casting Maintain status or approach normal R1 value for popliteal test, gastroc test, and soleus test 	 <p>Rx: Ultraflex KAFO CM with either Dynamic Knee or Ankle and Static/Solid Knee or Ankle**</p>	<ul style="list-style-type: none"> Cerebral Palsy Stroke/CVA Traumatic Brain Injury Spina Bifida

R1 Values for Lower Extremity (also known as “first catch”)

*Assessment Test	Popliteal Test	Gastroc Test	Soleus Test	Abductor Test
Normal R1 Value	25°	10°	20°	45°

**Ultraflex does not recommend using two dynamic joints on an orthosis. When an orthosis will cross two joints, Ultraflex recommends selecting the dynamic joint for the most involved joint (knee or ankle OR elbow or wrist).

General Guidelines for Ultraflex LE Bracing

Clinical Problem	Clinical Goals	Ultraflex Solution	Indications
<p>Multi-level lower extremity spasticity, adductors, hamstrings, gastroc-soleus</p> <p>*Abductor angle from mid-sagittal <40°</p>	<ul style="list-style-type: none"> Conservatively maintain and increase muscle length of adductors, hamstring, and gastroc-soleus (early intervention for children 2-5 years of age) Delay multi-level Botulinum Toxin Type A and serial casting Maintain status or approach normal R1 value for hip abduction 	 <p>Rx: Ultraflex Custom Molded Hip Orthosis (HOPE1)</p>	<ul style="list-style-type: none"> Cerebral Palsy (quadriplegia, diplegia)
<p>Gastroc-soleus and intrinsic foot muscle spasticity; Equino-varus deformity that cannot be corrected to subtalar neutral with ankle in maximal plantar flexion</p> <p>*Soleus test R1 value <15°</p>	<ul style="list-style-type: none"> Restore subtalar neutral Conservatively maintain and increase muscle length of gastroc-soleus and intrinsic foot musculature Complement multi-level Botulinum Toxin Type A and serial casting Maintain status or approach normal R1 value for soleus test Stop progression of equinovarus deformity Begin correction to more dorsiflexion 	 <p>Rx: Ultraflex Custom Molded AFO Lively</p>	<ul style="list-style-type: none"> Stroke/CVA Multiple Sclerosis Traumatic Brain Injury

R1 Values for Lower Extremity (also known as “first catch”)

*Assessment Test	Popliteal Test	Gastroc Test	Soleus Test	Abductor Test
Normal R1 Value	25°	10°	20°	45°

Easily convert a KAFO to an AFO with a quick release feature**



- Allows for maximum treatment options in one orthosis
- Ideal for patients with changing physiology

**Available as single component or with custom fabricated orthosis

General Guidelines for Ultraflex UE Bracing

Clinical Problem	Clinical Goals	Ultraflex Solution	Indications
<p>Spasticity Upper extremity flexor-pronator</p> <p>*Elbow extension test R1 value >10°, forearm supination test R1 value <80°, wrist R1 value <60°</p> <p>Other Neuro Brachial Plexus Injury causing muscle imbalance leading to flexor-pronator posture and loss of active supination</p>	<p>Spasticity</p> <ul style="list-style-type: none"> Conservatively maintain and increase length of flexor-pronator muscles Complement multi-level Botulinum Toxin Type A <p>Other Neuro</p> <ul style="list-style-type: none"> Restore full active and passive forearm supination and elbow extension 	 <p>Rx: Ultraflex Custom Molded EWHO Rotation</p>	<p>Spasticity</p> <ul style="list-style-type: none"> Cerebral Palsy Stroke/CVA Traumatic Brain Injury Spinal Cord Injury Multiple Sclerosis <p>Other Neuro</p> <ul style="list-style-type: none"> Brachial Plexus Injury
<p>Spasticity, good passive range but lacking reach, grasp, pinch, and release due to muscle imbalance</p> <p>*Elbow extension test R1 value <10°, forearm supination test R1 value >80°, wrist R1 value >60°</p>	<ul style="list-style-type: none"> At home training program for improving reach, grasp, pinch, and release 	 <p>Rx: Ultraflex Custom Molded EWHO FF (FirstFlex)</p>	<ul style="list-style-type: none"> Cerebral Palsy Stroke/CVA Traumatic Brain Injury
<p>Spastic wrist flexors (Carpi Radialis, Carpi Ulnaris, Palmaris Longus) and intrinsic wrist and finger flexors/extensors</p> <p>*Elbow extension <10°, wrist extension <60°</p>	<ul style="list-style-type: none"> Conservatively maintain and increase length of wrist flexors Complement Botulinum Toxin Type A and serial casting Stop progression of deformity Achieve correction toward an intrinsic plus wrist/hand/finger position 	 <p>Rx: Ultraflex Custom Molded WHO</p>	<ul style="list-style-type: none"> Cerebral Palsy Stroke/CVA Traumatic Brain Injury
<p>Spastic elbow flexors (biceps brachii, brachialis, and brachioradialis)</p> <p>*Elbow extension >10°</p>	<ul style="list-style-type: none"> Conservatively maintain and increase length of elbow flexors Complement Botulinum Toxin Type A and serial casting Promote elbow extension 	 <p>Rx: Ultraflex Custom Molded EO</p>	<ul style="list-style-type: none"> Cerebral Palsy Stroke/CVA Traumatic Brain Injury Spinal Cord Injury Multiple Sclerosis

R1 Values for Upper Extremity (also known as “first catch”)

*Assessment Test	Elbow Extension	Forearm Supination	Wrist Extension
Normal R1 Value	0°	90°	70°