**Biothotic Orthotic Instruction Guide**

**Video Tutorial:** [**https://www.youtube.com/watch?v=1VHLSTnX-gc&t=2s**](https://www.youtube.com/watch?v=1VHLSTnX-gc&t=2s)

General Considerations

1. **Types of Biothotic Devices**-Four different types of Biothotic devices are available:
	1. The **Profuction Biothotic** is a thin semi-rigid orthotic, designed for men’s dress shoes and women’s casual shoes.
	2. The **Sport Biothotic** is a semi-rigid orthotic, which includes a 1/8” EVA top cover for additional cushioning. Designed for shoes with removable inserts or shoes with extra room.
	3. The **Soft Biothotic** is covered with Duraplast, a soft moldable top cover similar in its characteristics to Plastazote, but far superior in its durability. It is ideal for Diabetic, Rheumatoid Arthritic, and Geriatric patients.
	4. The **High Heel Biothotic** is a very thin and flexible orthotic for women’s narrow flats and High Heels, specially designed to eliminate the common problem of slipping out of the shoe.
2. **Full and Half Length Devices**

The Biothotic comes in full length but can be trimmed to three-quarters of half length. The full-length orthotics are recommended for shoes with removable inserts or shoes with extra room. Half length orthotics are used in tight dress shoes. They can be attained by trimming a full length orthotic to the metatarsal heads. For the Half Length orthotic, do not use the sport and soft design.

NOTE: Be careful not to trim the orthotic in the area where the resin is encapsulated.

1. **Sizes**

The Biothotic devices are available in full sizes only (6, 7, 8 etc…) Men’s sizes 7 to 13 and Women’s sizes 5 to 10. For half sizes: select the next larger size, when using a full length orthotic, and the next smaller size, when a half-length orthotic is required.

1. **The Expanding Resin**

The resin encapsulated in the Biothotic is sensitive to moisture. Therefore, the molding process should take place within 10 minutes after opening the sealed pouch. If the orthotic is left unsealed for a longer period of time, the resin might harden and not expand properly.

1. **The Injected Water**

Use luke-warm water to activate the foam. (The temperature of the “cold” tap water is usually too low). Cold water will not activate the resin. The warmer the water, the more expansion the foam is attained. A small quantity of water normally leaks from the bottom of the orthotic and slightly wets the shoe.

1. **Storage**

Store the inactivated orthotic flat or on the side, with the lateral side facing up. The orthotics should be at room temperature before starting the molding process.

The Molding Process, Step By Step

It is recommended to prepare one orthotic at a time. This will avoid the asymmetrical effect of activating one orthotic prior to the other. Have the patient wear the shoe on the other foot, with the orthotic (or similar thickness device) during the molding process, for balance.

1. Open the pouch at the notches. Insert the orthotic into the shoe and make sure it fits properly. Trim the toe portion (length and/or width) if necessary.
2. Make sure the patient can comfortably wear the shoe with the orthotics.
3. Fill the syringes with the amount of water indicated on the package.
4. Gently lift the medical side of the vinyl cover on the bottom of the orthotic. Peel off the tape which covers the injecting hole and stick it on the anterior part of the orthotic for later use.
5. Hold the orthotic upside down (bottom facing up) and grab it with the fingers across the orthotic, touching the medical wall. Do not touch the top cover, as it may push out the syringe or the water.
6. Insert the syringe into the hole, pushing it all the way down, until the tip is fully inserted inside the orthotic and the syringe’s neck is in contact with the bottom of the orthotic.
7. Inject the water firmly while the orthotic is upside down and level. Leave the syringe inside the hole to keep the hole sealed. \*Some water might leak out. This should not affect the activation of the polymer, since the quantity injected includes extra water.
8. While the syringe is still inside the orthotic, shake the orthotic 3 to 4 times.
9. Remove the syringe slowly without pressing the water out. Cover the hole with the tape and replace the vinyl cover.
10. Place the orthotics on a flat firm surface (top cover facing up). Using the roller, knead vigorously for 10seconds the entire area where the resin is contained (primarily the medical side of the orthotic).
11. Quickly insert the orthotic into the shoe. Have the patient immediately put the shoe on tie or buckle it and walk or continue to seat, as described in the following paragraph.

Aligning The Foot During The Molding Process

1. **For Patients With Excessive Pronation**
	1. For patients with mild pronation: Have the patient walk on the orthotic for 30 seconds and then, stand for an additional 3 minutes, while the foot is kept in Neutral Position.
	2. For Patients with severe pronation: Mold the orthotic while the patient is sitting with the foot in Neutral Position, for 3 minutes.
2. **For Patients With Excessive Supination**

Before the molding process, add a wedge to the lateral aspect of the shoe, under the metatarsal heads area to prevent the foot from over supinating during the molding process. Than activate the orthotic following the regular molding technique and have the patient walk on the orthotic for 3 minutes.

1. **Accommodative Orthotic**

Have the patient walk on the orthotic for 3 minutes. In this case the orthotic is formed dynamically to the shape of the foot.

After The Molding Foam Has Set (3 Minutes)

1. Check the orthotic after 3 minutes. If you notice an air bubble, or the patient complains about an excessive pressure under the arch, puncture the orthotic with a push pin through the medical wall and knead vigorously to remove the air bubble. Have the patient walk on the orthotic for at least an additional 2 minutes.
2. The basic molding process is now completed. However, it’s possible that a small amount of the resin is still not fully set. Therefore, it is important that the patient continues to wear the orthotics in the shoe for at least an additional hour after the molding process during his/her normal activities. If necessary, add extrinsic posts or pads, as explained, in the next paragraph.
3. Before the patient leaves the office, remove the Vinyl cover and the tape, covering the injecting hole, from the bottom of the orthotic.

Extrinsic Posts

Extrinsic posts can be added to the bottom of the orthotic to fine tune the alignment of the foot. The posts are available in 3, 4 and 5 degrees and comprise self-adhesive strips for temporary application. \*Before attaching the posts, remove the Vinyl and the tape from the bottom of the orthotic.

Extrinsic posts For Patients With Excessive Pronation

**Rearfoot Post**

When additional correction to the alignment of the foot is needed or the patient complains about excessive pressure on the arch, add first a medical Rearfoot post under the heel. This will supinate the foot and reduce pressure from the arch area. Cut a 3 inch long piece from the appropriate posting strip. Position it on the heel portion of the orthotic, with the adhesive stripes facing the orthotic and with the post covering the entire heel area. Trace the contours of the curved mark, peel off the liner and attach the post to the orthotic.

 **Forefoot Post**

If an additional support is needed in the anterior part of the arch, add a forefoot post. Trim a 1 inch wide piece from the posting strip and place it on the orthotic 1/8” behind the metatarsal heads. Trim according to the shape of the orthotic, peel off the paper liners of the self-adhesive tape, and position in place

**Additional Support Under The Arch**

If more support is needed under the middle of the arch you may use a felt arch pad that comes with adhesive tape. The thickness of the pad can be reduced by peeling off layers of the pad.

**Extended Medical Post**

When both the rearfoot and forefoot have to be posted, or additional medical support is needed, you may use a wedge that covers the heel and extends to one eighth of an inch behind the metatarsal heads.

Extrinsic Posts For Patients With Excessive Supination

If the excessive Supination is mild, use a lateral post, cut obliquely at the heel area. The wedge should extend from the distal part of the heel to one eighth of an inch behind the 5th metatarsal head.

In severe cases of Supination, the post may extend to the tip of the orthotic, or cover the entire lateral aspect of the orthotic.

**Permanent Bonding**

To bond the posts permanently you may use contact cement or a Black Nylon Tape supplied by Orthofeet. The tape should be attached across the posts, securing them to the bottom shell.

**Adjustments**

The bottom of the orthotic can be easily ground to eliminate any pressure point or excessive support. The heel portion of the orthotic may be also ground if the heel is lifted out of the shoe. You may also shave the bottom shell of the orthotic, using a utility knife, to reduce support or extra thickness at the arch or heel area.

**For Metatarsal Pain**

If the basic orthotic device does not eliminate the pain you may attach a pad behind the painful area, to relieve pressure from the metatarsal heads. The Felt Arch Pads with the self adhesive are recommended. If needed, the thickness of the pad can be reduced by peeling off layers from the pad. Another option-grind or cut the bottom of the forefoot extension under the painful area.

**Heel Lifts**

Heel lifts, which are available in 1/8” or a ¼” may be added to the bottom of the orthotic, to balance out cases of leg-length discrepancies, for Equinus feet and for patients with Achilles pain.

**Heel Spur**

To reduce the pressure under a spur, a ¾” round pad, a ¼” thick, can be attached to the bottom of the foot, directly under the sensitive spot, prior to the molding process. By allowing more foam to construct around the pad, an indentation will be created under the sensitive spot, by cutting just the bottom shell, of about one inch in diameter, can be created under the sensitive spot, by cutting just the bottom shell material, using a sharp knife or a scalpel.