

# Ponseti Sandals and Abduction Bar

## Clubfoot Bar and Shoes

Most parents are very excited to be done with the casting portion of their child's clubfoot treatment. However, it is important to remember that to maintain the correction that was achieved through casting, continued treatment is necessary.

In this next phase of treatment, your child will be wearing Ponseti shoes which are attached to a foot abduction bar.

## Why is the bar and shoes important for clubfoot correction?

The same abnormal development of tissues in the leg that initially causes a clubfoot continues through early childhood. Without following a post-casting brace protocol, the likelihood of recurrent clubfoot deformity developing in your child is very high. Early discontinuation of use of the bar and shoes is associated with high relapse rates. We routinely recommend using the sandals and abduction bar until your child is 4 years old.

Relapses occur more quickly in younger children, and more slowly in older children as their soft tissue development becomes more adult-like. Nearly all clubfeet will relapse if bar and shoes are discontinued before 1 year of age, and greater than 50% will relapse if bar and shoe are discontinued before age two. After age 4, there is little risk of relapse if the foot has maintained its corrected position throughout treatment.

Wearing the bar and shoe brace is an integral part of the Ponseti treatment method. If followed closely, it can prevent most of the recurrence in idiopathic clubfeet. The shoes are attached in a fixed position to a rigid bar, with the settings holding the feet and ankles at an outwardly rotated and slightly flexed position. This fixed position maintains a stretch on the feet, maintaining correction of both the Achilles tendon and ankle flexibility, and the tight structures on the inner part of the foot. There is no proven single-leg brace option that can provide this same amount of foot correction.

## Bar and Shoes Fitting and Use

The typical bracing protocol for infants with clubfeet is 23 hours per day use for 3 months following Achilles lengthening and completion of the last cast. If your child is older, after casting, we may tailor brace recommendations to fit the needs of your child in the initial 3 months. Following these initial three months of full-time wear, we recommend decreasing wear to 12-14 hours per day until your child is 4 years of age. Early on, the 12 hours is often a combination of use during nights and naps. As children get older, it is typically used for 12 hours overnight.

Your child will be fitted with shoes and bar in the clinic on the day of their final cast removal. Our orthotics team will show you how to apply and tighten the sandals, and how to attach and detach them to and from the bar. The bar is set at an appropriate width for your child, and the attachments for the shoes are set at an appropriate amount of abduction (turn out) to maintain correction of your child's now corrected foot position. Bilateral clubfeet will have both feet turned out about 60 degrees, unilateral clubfeet will have the affected side turned out 60-70 degrees and the non-affected foot turned out only 30 degrees.

If your child has a stiffer/atypical or syndromic clubfoot, we will often use bar and shoes but we may change to amount of rotation of the feet on the bar and adjust the wear schedule to appropriately treat your child's unique foot position and flexibility.

We do not routinely recommend the use of a unilateral brace. There are no good studies in our orthopaedic literature to support unilateral braces for clubfoot and opens up the possibility of harm in some types of braces.

## **Wearing the Bar and Shoes**

When applying the shoes, we recommend tall, thin socks under the shoes. First, make sure there are no wrinkles in your child's socks, and that the toe seam is not pressed too tightly against the toes. After this, you can apply the first shoe. It helps to bend your child's knee (this relaxes the calf muscle) and then place the foot as far back in the sandal as possible. Often securing the middle strap first will help. After this, you can tighten the top and bottom straps, and then revisit and retighten the middle strap as this holds the foot locked in position the best.

You can mark the leather at the buckles once tightened but remember that the leather will stretch with use. You may need to tighten past that initial leather mark as you use the shoes more. The heel should always be visible in the back window of the sandal. If the toes slide back and forth or the heel is not visible, then the shoe is not tight enough. Re-position the foot in the shoe and tighten again until the foot cannot move and the heel is visible. Finally, run your fingers under your child's toes to make sure they are not bent underneath and stuck. Then apply the second sandal.

After the shoes are tightened, they can clip onto the bar. If you need to remove the bar to place your child in a highchair or car seat, you can leave the shoes in place and just clip the shoes off and then back onto the bar. The bar and shoes often fit well with typical infantile car seats. You can change diapers without removal the bar and shoes.

We recommend starting with a standard Mitchell bar, which is a solid bar with the footplates fixed at an appropriate degree of outward rotation. We will widen the bar as your child grows so it remains appropriate. If your child shows poor tolerance of the fixed bar, we may consider trying a hinged bar (Dobbs bar) which allows more active motion between the legs and can sometimes assist with your child's tolerance of the bar. The feet are still set at a fixed degree of outward rotation and ankle flexion which will maintain correction of the foot position.

## **Helping Your Child Adjust to the Bar and Shoes**

The best way to get long-term compliance with bar and shoe use is to initiate strict use early on. Children are very quick learners, and if they learn that crying/fighting will result in parental removal of shoes and bar, they will quickly develop this habit which can make long-term use even more difficult. The first 1 to 2 weeks can be difficult as you and your child get into a new routine, but after this period, the bar and shoes are often tolerated very well.

Making the bar and shoes a regular part of the bedtime routine (like putting on pajamas and brushing teeth) helps get your child used to the bar and shoes. You can play with your child in the brace and teach them that they can still kick their legs in the brace. We will give you a pad to put over the middle section of the bar when your child is fitted with their first brace. This can help to protect furniture, you and your child from the hard metal bar.

## **Watch for Irritation**

In the first few weeks of bar and shoe wear, you may notice some mild irritation of the feet as they get used to the new pressures and position of the shoes (which is very different than when in the casts). Watch the heel area very closely both on the clubfoot and non-clubfoot side, as sores can develop that limit ability to proceed with bar and shoes. If you notice small red areas on the skin, you can apply a blister Band-Aid or moleskin. If the area remains red or a sore develops, contact us and we will evaluate your child's feet.

We can often adjust the bar and shoes, help with padding, or change some of the straps that hold the feet. If there is a significant sore which precludes ongoing use of the bar and shoes, we will recommend placing the clubfoot in a holding cast until the skin heals and transition to bar and shoes can occur again. We do not recommend going without either cast or bar and shoes for more than a day or so, as the risk of rapid recurrence is very high. This is especially true in the first year of life. Please take your child's bar and shoes on any trips that you may go on and use them per your usual routine while away from your home.

Sometimes, a child might learn to remove the shoes. If that happens, we recommend:

- Tightening the shoes more
- Bringing the shoes to Gillette - we can apply eyelets to the holes to make removal more difficult
- Removing of the tongue of the shoes to get a tighter fit around the foot
- Putting a sleep sack over the feet so feet are not accessible
- Trying a Dobbs bar

If the child is very resistant, please contact us as your child may have some early recurrence causing foot tightness and this can make bar and shoe wear more uncomfortable. This often responds to a week or two of stretching casts and then replacement of bar and shoes.

If your child or has an extended period of illness or hospitalization and is unable to wear their bar and shoes, the transition back in can be difficult. Be persistent, but also know that we are happy to see your child and assess the foot to ensure that it is not recurrent tightness causing the poor tolerance of shoes. If so, we can apply a new cast for 1 to 2 weeks to stretch the foot back out and then transition back into the shoes.

If you use social media, you may also reach out to other families for tips and support. Many families are very happy to share what they have learned and ways that have made bracing successful for their children. Your care team is also happy to answer any questions or concerns you have during the casting or bracing process.

**[Appointment: 651-290-8707](#) [Refer a Patient: 651-325-2200](#) [Pediatric Expert Consult](#) [More Ways to Contact Us](#)**

This information is for educational purposes only. It is not intended to replace the advice of your health care providers. If you have any questions, talk with your doctor or others on your health care team.

If you are a Gillette patient with urgent questions or concerns, please contact Telehealth Nursing at [651-229-3890](#).