

## Clubfoot Education: Tips & Tricks

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### 1. Purple toes are very normal!

- They turn purple for 2 reasons: First, the foot takes a minute to recognize the newly corrected position of the foot. Second, the temperature of the cast. The plaster gets hot as it is curing, which causes vasodilation; this makes the toes look purple and swollen.
- To help with purple toes, make sure you elevate the feet higher than the level of the heart. Keep in mind that the cast is bent at a 90-degree angle and mild elevation will take longer for blood to get back to drain. Elevate for about 10-15 mins, or until toes are no longer purple.
- Once the plaster cures, the plaster will become cold; the cold temperature can also make the toes look purple. The cast will have a normal temperature about 24 hrs. after application (once the water evaporates from the cast). At this point, the toes should return to a normal pink-red color.
- To avoid purple toes, make sure that when holding your baby, you are always supporting his/her legs. Avoid dangling the feet, as this will cause the blood to pool on his/her toes and cause purple, swollen toes. If burping, go ahead and burp in the upright position, but go back to supporting the casts. We recommend to always keep a baby blanket rolled, or a boppy pillow under the casts, to allow the heels to “float.” Avoid pressure on the heels at least for the 1<sup>st</sup> week or so, or until your baby can lift the casts on their own.

2. Diaper changes: It is extremely important not to pull or tug on the casts when doing diaper changes. Instead, pick your baby up by the hips and slide the diaper under. If your baby is too big or heavy to lift by the hips, roll them to the side, wipe, position new diaper and roll your baby back onto the new diaper. Please NO pulling on the casts EVER. Make sure the diaper is snug and tucked to prevent accidents onto/into the casts.

Keeping the cast clean. Frequent diaper changes are key to keeping clean casts. Make sure they are tucked under the cast and not over the cast. Use moleskin around the edges to catch any poop or pee (it gets harder to apply moleskin towards the end of the week as they grow a lot). Cut little strips of moleskin, peel protective layer off, push baby chub down so you can insert moleskin, sticky side up on the cast (never on baby’s skin!), and fold over the cast. If moleskin gets soiled, just peel it off and place new strips. You can also use baby leg warmers over the casts. Baby socks work well too, just cut the foot portion of the sock and use as a cast sleeve, similar to a leg warmer.

3. Bathing & Skin Care. Absolutely no baths. Even when you try to be as careful as possible, the cast can get wet. The material used on these types of casts is not waterproof or water resistant.

It is important to take care of your baby’s skin any chance you get (i.e. once a week at your cast change appointment). Plaster is very drying to the skin, so the more casts they have, the more

sensitive their skin becomes. When possible, make sure to moisturize their skin with a non-alcohol, fragrance free lotion such as Cetaphil, Aquaphor or Eucerin.

4. Slipped casts. A slipped cast is when you cannot see the toes. The correction obtained in clinic is not being maintained, and there is movement of the foot inside the cast. This can cause your baby to be very fussy, cause swelling of the foot and leg, and possibly a pressure sore. It is very important to know when a cast slips, as they need to be removed as soon as possible.

\*\*If this occurs on the weekend, place your baby in a warm bath, change water every 10-15 mins so your baby is not sitting in freezing cold water. You will do this until the plaster becomes soft. It can take up to 4 hours, but it is faster (and sometimes safer) than taking your child to the ER. Once the plaster is soft, find the end of the plaster and start unraveling it. Tear the plaster with your hands, or with scissors, and very carefully cut the plaster.

Once the cast is removed, your baby's legs will be very sensitive, and will likely swell a lot. Make sure you call us as soon as possible, and/or email photos, so we can determine when it is safe to resume casting. Swelling needs to completely go away before we resume casting. Make sure to keep the baby's legs elevated and give Tylenol every 4-6 hours to help with discomfort.

To help prevent cast slippages, remember not to pull or tug on the casts, and follow baby diaper changing instructions.

5. Car Seat. Some car seats are very narrow, and it might be hard to place your baby in it once the casts are applied. If the car seat is very narrow and the casts are pinching the baby's belly, place a folded baby blanket on the deepest part of the car seat to elevate the baby's bum. This will give you more room so the baby can spread their legs better without pinching their belly. Once your baby is in their car seat, move their hips into a "frog" (or abducted) position, which helps to prevent pinching as well.

6. Baby Carriers. We discourage baby carriers during active casting, as they usually keep the baby in an upright position. This causes venous congestion on the toes, resulting in purple toes, swelling, and discomfort.

7. Outgrowing the cast. It is possible for a baby to outgrow the cast before the next appointment. Signs of outgrowing the cast are purple toes (they look like swollen shiny grapes and elevating does not help improve the color), a "muffin top" at the thigh that looks purple, and/or very tight cast on the thigh (can't insert tip of pinky down the cast). Your baby typically is very fussy and inconsolable. PLEASE CALL US! We may need to change or bi-valve (split) the cast.

## **Brace Transition**

### How does the foot and leg look following final cast removal?

- The foot will likely be red and swollen. After being out of the cast for several minutes, it will begin to swell and look bruised. Bruising can look like a purple-blue, then turn more like a yellow-green color, and finally a normal skin color after a week or so. You do not need to do anything for this: as the baby begins to move and kick more, this will go away on its own. This is very normal.
- It is important to understand that the baby is not used to straightening their knees, or moving their feet, immediately following cast removal. Please be gentle moving their knees and feet for the first several days, until your baby seems less irritable.
- The feet look a little “smushed”: the outside of the heel looks like a normal, round, beautiful heel, but the inside of the heel looks a little flat. This is normal, as we have caused this during the casting. It should look normal in 1-2 weeks. Please pay attention to the “flat” inside of the heel, as it will be important once we put the shoes on.
- The outside area of the ankle has creases, which is the “extra” skin that covered the foot when it was curved inward. Your child will lose these creases over time as they grow.

### What is the Ponseti shoe like?

- -The Ponseti shoe was designed to maintain the correction achieved during the casting process. The shoes also help to form a “normal looking foot”.
- -The shoes have a deeper heel-cup, and are created with additional dorsiflexion (past 90 degrees), to help stretch the Achilles tendon.



- -The buckles go on the inside!
- -This is how you can tell the left from the right. There are 3 buckles: middle, upper and lower. There are 2 circled windows on either side of the shoe that will guide you on where the heel is in respect to the shoe.
- -The inner lining is silicone, so it is not very breathable. This is why cotton thin socks are recommended.
- -The tongue was designed to take pressure off the middle strap (but does not always lay where we want it). See below...

### Fitting the shoes

- Once we understand why the foot is so sensitive, and what the purpose of the shoes is, we are ready to start fitting them.
- It is helpful to position the foot before attempting to put the shoes on. To do this, use your middle finger, index finger and thumb to hold your baby’s foot (near the toes),

leaving the heel free. Bend the knee. Hold the foot in a slightly dorsiflexed/bent position, making sure the foot is parallel to the knee in an abducted position. Bring the shoe in from the back; try to get the heel seated as far back and down in the shoe as possible, without letting go of the toes. Look through the inside heel window to guide you. Once the heel is as far back and down as possible, let go of the toes and hold the shoe in place, then bring the tongue over (making sure there are no creases). The tongue must lay flat against the skin. Bring the middle strap over, and buckle as snugly as possible. There is usually always a crease under the tongue so make sure to pull “across and up” to get rid of the crease. It will cause more issues if we don’t smooth down the tongue.

- **Roll** the baby to the side so you can see through the **outside** hole. (Do not turn the knee inwards, as this will be sore!) The heel should be all the way back and down, covering the entire window on the outside. The inside view of the window might look like it is empty or will look like the heel is not down and back. This is normal - remember that our baby has a “smushed” inside of the heel, but this will fill in in the next couple of weeks.
- To make sure we have the right tightness and fit of the shoes, bend the knee and gently pull on the shoe. There should not be any movement. If there is movement, the shoe is too loose, and we must remove and reapply the shoe.
- The upper or bottom strap can go next. Make sure the bottom strap is not too tight. If it’s too tight, it can cause the rivet to press on the bony prominence at the great toe, resulting in redness and/or a pressure sore. The upper strap should also be snug, but not too tight.
- Socks should be changed daily. If your baby is sweating a lot, change the socks twice a day.
- Once the shoes are on, attach the bar. Have your baby try his/her new accessory!

### Skin checks

- In order to prevent skin breakdown in the brace, it is important to check your baby’s skin several times a day. The material of the shoes is very stiff at first, and it takes several days for them to break the shoes in. As you know, we are often unable to wear new shoes for more than 2-3 hours without taking them off. This is because we need to break them in before they are comfortable. Same with babies!
- Skin checks are when you remove the shoes and look for any errors in the shoe placement process: wrinkles or creases in the shoe, the sock, or both!
- Completely take the brace off, including the socks, inspect the skin for any deep redness, pinching, or hotspots. If we have a fold or crease on the shoe or the sock, we should expect to see some kind of skin irritability. If there is no broken skin, just redness, readjust the tightness, get rid of wrinkles and keep watching. Redness should go away after fixing wrinkles. If the skin looks good, apply lotion again using a good moisturizing lotion such as Cetaphil, Aquaphor or Eucerin. Your baby’s skin is very dry, and moisturizing throughout the day will be key to desensitizing it and getting the skin back to normal again.
- If the skin is broken, or there is a visible wound (not just redness), please contact us for guidance! You can send questions and photos to: [toppedsortho@gmail.com](mailto:toppedsortho@gmail.com)

- Skin check schedule: Mornings (as soon as the parent wakes up), 2-3pm and nighttime. I usually encourage bath time to be their 1hr break time, as well as the last skin check of the day.

#### Hands on: In Clinic:

- After 5-10 mins has passed, the material has already stretched a bit.
- Now it's time for mom/dad to do a skin check, to inspect the skin and put shoes back on again. -We want you (as parents) to take the braces off, and put the braces on, during your brace transition appointment. This helps parents feel most comfortable when they are home with their child. Remember: these are JUST shoes. You want your child to be comfortable in them, and you might need to make adjustments to allow them to fit the feet as best as possible!
- We do not usually mark the straps/holes, as this may cause confusion and worry.
- Remember, the suede stretches over the first few days and weeks, so feel free to tighten the straps to help hold the feet in the correct position.

#### Once the braces are in position, and you're heading home:

- Your baby's legs can be elevated while in the brace! Propping the brace on a pillow will take weight off their knees, and help them feel comfortable while their knee soreness goes away. When holding your baby within the first few days after cast removal/brace transition, support the brace - all of the weight is on their feet and pulling on the knees. The brace should not be removed to allow the swelling to go away. Elevate with the brace on please!
- You will notice that your baby will form more of a "skinny ankle", chubby legs and puffy pooch over the toes. This is normal because of the middle strap. It is pushing all the swelling and chubbiness up and forward.
- If your baby is crying, please do a skin check. Your baby should be comfortable in the brace once the shoes are on. If the skin check is normal, make sure baby is fed, the diaper is changed, or find a position or activity to distract them (i.e. a baby swing). If this is still not helping, the brace is likely not to blame; you might need to contact your pediatrician.
- When the bar is removed, the abduction and dorsiflexion is taken away (which helps hold the correction of the feet). If your baby calms down when the bar is off, parents often think it's okay to remove it several times a day. If the bar is always on, your baby will learn to adjust to the continued stretch, and parents should find a way to soothe them with the brace on. After all, your baby was used to being in this position for over 9+ weeks. Keep the bar on with the shoes! They are a necessary pair!

#### Bracing schedule

- Shoes and bar should be on for 23 hours a day.
- The first week will be less because parents will be doing skin checks 3x a day. BUT, after parents are comfortable putting the shoes on, the skin is no longer sensitive, and the material of the shoes are no longer stiff, please limit skin checks to 1x a day or none!
- I also do not encourage breaking the 1-hour break into 2-30 min breaks. My reasoning behind this is because the skin does not get enough time to air out. The shoes are not

breathable, and I feel like allowing your baby to take advantage of their 1 hour of break time during bath time will help heal his/her skin. The warm bath water also helps with the range of motion. Additionally, babies usually have a schedule. If one day you don't have time to give them 30 min at their usual time, they will be fussy and expect their 30 mins off. Let's make this simple for both the baby and parents: 23 hrs a day, 1 hour off. Bath time.

### Ingrown toenails

Do not cut your baby's toenails too short, as these can get ingrown. The 1<sup>st</sup> 3 months of brace wear, shoes are on 23 hours a day. They usually have a "pooch" over their toes and when they "crunch" their toes in the shoe, the nail gets surrounded by all the tissue causing the nail to become ingrown or irritated. A lot of kids already have irregular nails, but to avoid ingrown toenails, let's not cut them too short!