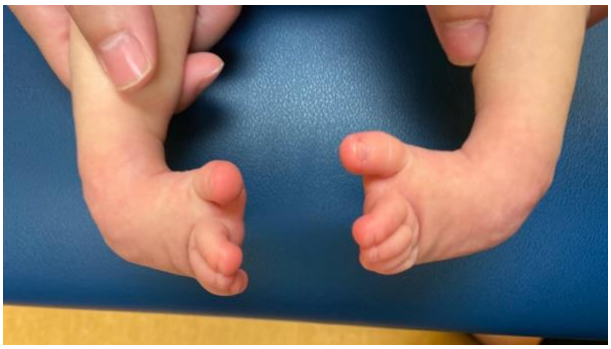


Clubfoot Deformity

What is Clubfoot?

- Most common deformity of the musculoskeletal system in newborns
- Occurs in about 1 in 1000 live births
- Chances of having a second baby with clubfoot is 1 in 30
- Treatment should begin early, and can begin as early as the first few weeks of life

Cause

- Unknown, likely genetic
- It is not caused by anything the parents did during pregnancy

Goals of Treatment:

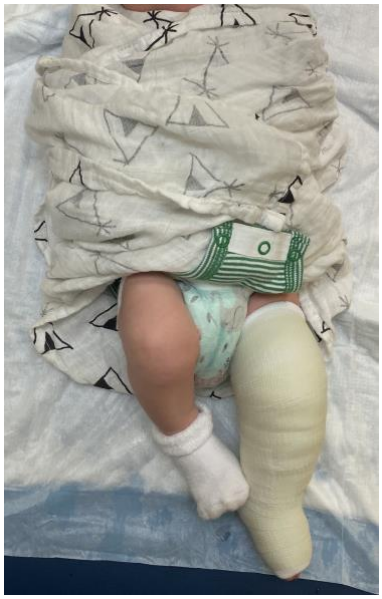
- Have a normal looking foot with normal function
- When treated appropriately children are able to fully function and participate in any activities they want

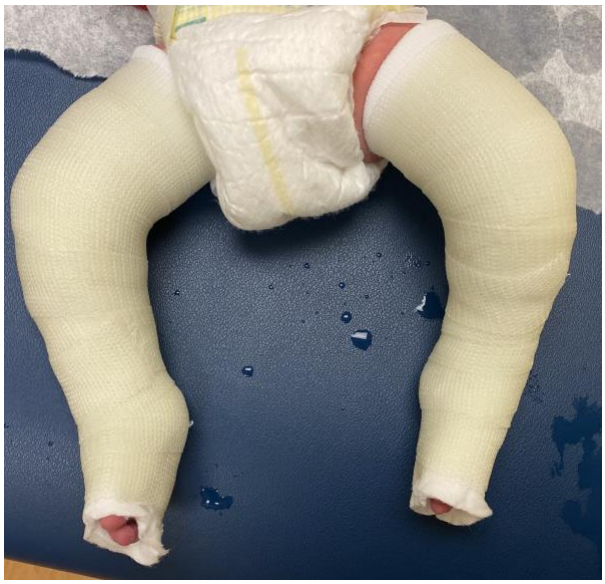
Sequence of Treatment:

- Serial casting
- Achilles tendon tenotomy
- Foot abduction bracing

Ponseti Method:

- The initial treatment is serial Ponseti casts
- The foot is gently stretched and manipulated and then the foot is placed into a molded cast up the thigh
- Each week the tissues in the foot will stretch and the displaced bones and joints are gradually brought to a normal position
- The cast maintains the correction obtained in the office and stretches the tissues for the next cast
- The patient will be seen weekly for serial cast changes
- It takes on average 6-8 casts in order to achieve full correction of the foot





Cast Care:

- The cast is not waterproof, keep clean and dry
- Check for circulation; if you press the toes and watch the pink color return then circulation is good, if the toes are white or purple, the cast may be too tight and should be removed
- Watch for cast slipping, the cast is molded for a certain position and if it slips it can cause a pressure sore elsewhere
- Sponge bathe your child while in the casts
- Keep the cast clean by keeping the upper end of the cast out of the diaper
- If the cast gets wet or soiled, or starts to slip off, unravel the cast and call the office
- **Call the office if the following occur:**
    - You have to remove the cast at home
    - Foul odor or drainage from the cast
    - Sores around the edges of the cast
    - Poor circulation in the toes
    - Cast slipping down over the toes
    - Child running a fever of 101.3°F or higher without any other explainable cause

Casting regimen:

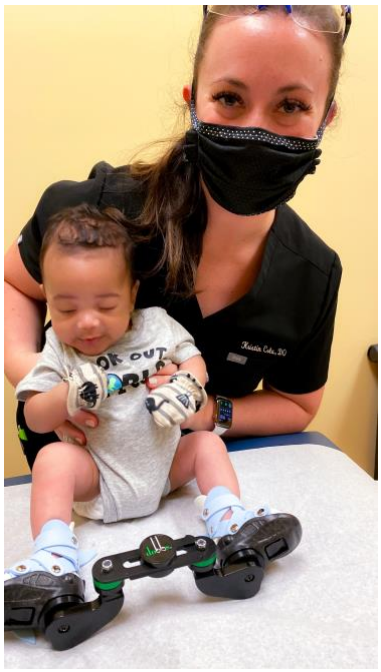
- The cast material used is called **soft roll fiberglass**
- Each week a new soft roll cast will be applied
- The morning of or night before your next appointment peel up the edge of the cast and unravel it, removing all the cast material and cotton padding
- Give your child a good bath once the cast is removed
- A new cast is applied every 7 days

Achilles tenotomy

- 90-95% of patients require an Achilles tendon (heelcord) tenotomy to complete treatment
- Once serial casting is complete, the tenotomy takes place
- It is a minor office procedure done with numbing cream
- Numbing cream is applied to the back of the leg and the tendon is then divided percutaneously with a small scalpel
- After the tenotomy another long leg clubfoot cast is applied, this one for 3 weeks
- The tendon heals and re-strengthens in 3 weeks
- To prevent retightening, stretch the heel cord three times a day

Foot abduction orthosis:

- This is used to maintain the correction achieved from casting, regardless if they had their tendon cut or not
- The brace consists of high top open-toed shoes connected to a bar
- The clubfoot should be outwardly rotated 70° and the unaffected foot to 45°
- The brace is to be worn for **23 hours a day for the first three months**
- After that the brace is worn for **naps and nighttime until 4 years of age**
- The child will take a night or two to get used to the brace – DO NOT REMOVE THE BRACE if the child is fussy, it is important to allow them to get used to the brace so they wear it appropriately
- The brace is essential in preventing clubfoot relapse, and the only proven method of prevention of relapse
- The brace is 95% effective if used consistently as prescribed
- Poor brace compliance almost always leads to recurrence of deformity
- The brace will not delay the child's development with sitting, crawling, or walking



- **Brace Instructions:**
  - Use cotton socks, if the shoes are too big wear two pairs
  - Hold the foot in the shoe and tighten the middle strap first
  - Check that the heel is down in the shoe
  - Stretch the heelcords three times a day to prevent tightening
  - If the deformity or heelcord tightness recurs, the brace will not fit properly and the child will develop sores

- **Helpful tips for the brace:**
  - Expect your child to fuss for the first day or two
  - Make it a routine; put the brace on the child any time they're in their "sleeping spot", that way the child will learn that when they sleep the brace goes on. Your child is less likely to fuss if the brace is part of the daily routine
  - Play with your child in the brace, and show them they can still kick and move their legs in the brace
  - You can pad the bar if they are hitting things with it, bicycle tape works well

Long Term:

- After serial casting, the clinic visits will occur every 3 months until the age of 2, and then every 6 months until the age of 4 or until bracing is complete
- Bracing typically occurs until the age of 4, but it depends on the severity of your clubfoot
- Yearly visits occur to check for possible long term relapse after bracing is complete
- If the deformity relapses, serial casting will be restarted
- Children are followed yearly until around age 12

- In some relapse cases a small operation is needed around the age of 3 years or older to prevent further relapses, it involves transferring the tibialis anterior tendon from the inside of the foot to the outside of the foot.

Severe Clubfoot:

- A small percentage of children are born with severe clubfoot that is resistant to casting
- If this is the case and the foot is not responding to serial stretch casts, surgical correction is necessary

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