



Clubfoot and the Ponseti method: Information for parents

This leaflet is for parents of children diagnosed with clubfoot. It explains about the Ponseti method and what clubfoot is. It also provides information on how to care for your child's cast.

What is clubfoot?

Clubfoot (also known as *talipes equinovarus*) is the most common foot problem at birth. A baby with clubfoot has a stiff foot that points down and is rotated inward. The foot has an unusual appearance because the bones, muscles, and joints of the foot and lower leg developed abnormally. In the UK, approximately one in 500 babies has clubfoot. The condition is three times more common in boys than girls, and both feet are affected in 40% of cases.

The cause of clubfoot is unknown, but it seems to be a developmental problem that occurs during the second trimester of pregnancy. Sometimes, the condition is detected at 20-24 weeks gestation by using prenatal ultrasonography. Clubfoot can be passed on from the parents to the child. If one parent has clubfoot, each child has a 3% to 4% chance of being affected. If both parents have clubfoot, each child has a 15% chance of being affected. However, most babies born with clubfoot have parents who do not have the deformity.

Most children are diagnosed with a type of clubfoot called 'idiopathic clubfoot' and are otherwise normal in their development. In a small percentage of children, the clubfoot is part of a particular condition, such as arthrogryposis or spina bifida. When clubfoot is associated with other conditions, it is sometimes called 'teratologic clubfoot' or 'syndromic clubfoot'. Both types of clubfoot can be treated with the Ponseti method, although success rates are much higher for idiopathic clubfoot.

What is the Ponseti method?

The Ponseti method was devised by Dr. Ignacio Ponseti in Iowa more than 50 years ago. It is a non-operative technique in which the foot is gently manipulated and placed in a cast every week during a 4 to 8 week period. This allows enough time for the ligaments to relax and the bones to grow into the corrected position.

After the foot is overcorrected into full abduction (i.e., a toe-out position), 90% of children will undergo Achilles tenotomy, a minor procedure performed under local anaesthesia in the clinic. During this outpatient procedure, the heel cord is cut so that the foot is able to achieve a toe-up position. The foot is then placed in the final cast, which remains on for 3 weeks. The cast may be changed once in this time to allow for growth of the leg.



Before the Ponseti method



After the Ponseti method

After the final cast is removed, your child will need to wear boots that are connected to a bar to keep their feet turned outward. This is a very important in maintaining the corrected foot position as your child grows to prevent reoccurrence of the deformity. The boots and bar are worn 23 hours of the day for the first three months of treatment. After three months, the boots and bar are worn during sleeping and napping until the child is five years of age.

“If their baby is otherwise normal, when treated by expert hands, their child will have normal looking feet with normal function for all practical purposes. The well-treated clubfoot is no handicap and is fully compatible with a normal, active life.” Dr. Ignacio Ponseti

How many casts will my child need?

Typically, four to eight casts are applied to correct the deformity. When the cast is removed, gentle manipulations are used to correct the foot position. Your child will need to visit the clinic every week to have the cast removed, the clubfoot manipulated, and a new cast applied. Mild cases of clubfoot deformity are corrected faster than severe cases. To achieve a corrected foot position, the cast needs to extend from your baby’s hip to his or her toes.

Are there any surgical alternatives to the Ponseti method?

Posteromedial release surgery is an alternative to the Ponseti method. It is an extensive open surgical procedure that involves cutting many ligaments and tendons. The result is often a stiff and painful foot. Although it used to be the standard treatment, posteromedial release surgery has become less common because of the success of the Ponseti method.

How can I help during treatment?

You can help your baby relax while undergoing treatment. Using a bottle to feed your baby can calm him or her during the manipulation and casting process. If your baby is breastfed, feeding just before the treatment can help to relax your child. The manipulations and casting are not painful and children often fall asleep!

When the cast is applied, take note of where your child’s toes are in relation to the cast. If your child’s toes begin to disappear into the cast, the cast is too loose and might fall off. In this case, the cast needs to be removed as soon as possible. Please contact the physiotherapists, or remove the plaster cast yourself by soaking it in a mixture of warm water and a little vinegar. A synthetic, semi-rigid cast can be removed by finding the end and unwrapping the layers. The cast will need to be reapplied as soon as possible so please contact the clinic for an appointment.

How do I care for the cast?

- Check your baby’s toes during every nappy change to make sure they are pink and warm.
- Check the skin around the edges of the cast for any signs of rubbing or redness.
- Keep the cast clean and dry.
- Change your baby’s nappy frequently to avoid soiling the cast. Disposable nappies with elasticized legs work well. Try to fit the leg of the nappy above the top of the cast to prevent urine from leaking under the cast. If your baby soils the cast, wipe it with a dry cloth. The cast will be all right even if a stain remains.

You MUST contact the hospital if:

- You cannot see your baby's toes.
- Your baby's toes are not pink and warm.
- The plaster crumbles or becomes loose or cracked.
- Your baby is crying more than usual and appears to be in pain. The cast might be rubbing in an area that is not visible.

If you do not follow all these instructions, the treatment might not be successful.

Useful links:

<https://www.stepsworldwide.org/conditions/talipes-clubfoot/>

References:

Staheli L et al, 2009, Clubfoot: Ponseti Management Third edition. Global-HELP.Organization.

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