
Paediatric Orthopaedics

Talipes (clubfoot) and the Ponseti Technique

What is talipes (clubfoot)?

Talipes (clubfoot) is a condition present from birth in which one or both feet are twisted out of the normal position. The cause of this is unknown, although there can occasionally be a family history of similar problems. The affected foot is smaller and the leg thinner than normal. This may not be obvious if both feet are affected.

What is the Ponseti technique?

The treatment offered for children with talipes is the Ponseti technique. This aims to correct the child's foot so that the foot is functional, looks as normal as possible and is pain free. There are several stages of treatment.

The first stage involves a series of gentle repositioning of the foot or feet and application of a plaster cast in this new position. For the next stage, many children will need to have a tenotomy operation, followed by a further period in cast. The final stage will involve your child wearing boots attached to a bar until he or she is about five years old to maintain the corrected position of the foot.

What does the first stage involve?

The first stage of the Ponseti technique will normally start within a few weeks of your baby being born. It involves a series of manipulations, during which the bones of the foot are gently rotated and the soft tissues stretched. Babies do not find this painful. During this time, the foot is held in place with a plaster cast, which is applied from the toes to the groin. This is done on a weekly basis over the course of approximately six weeks. The cast is left on for approximately seven days which allows enough time for the muscles and ligaments to relax and for the bones to grow into the corrected position.

What happens next?

Your child will need to attend the casting clinic weekly so that the plaster casts can be replaced in the next position.

How many times does the plaster need to be reapplied?

The plaster will be applied between six and eight times. Each cast holds the foot in a new position.

When can I attend the clinic to have the plaster replaced?

The Casting Clinic is held every Monday morning. We try to accommodate each family individually where possible within the constraints of our time slots.

How can parents help during treatment and plaster sessions?

It is very helpful if you can encourage your baby to relax during any treatment or plaster sessions. Please bring normal feeds for your child, which can be given during the process of applying the casts.

How to care for your child's plaster cast

When the plaster cast is first applied, it will take several hours for the plaster to dry fully. During this time, please take extra care not to disturb the plaster in any way. It is important to follow all of the instructions below carefully, to ensure your baby is happy and safe, and the treatment is successful. Any of the staff involved in your baby's care are happy to answer any queries you have.

Please:

- Check your baby's toes are pink and warm at every nappy change.
- Check your baby's skin around the edges of the plaster for any signs of the plaster rubbing, for example redness or soreness.
- Keep the plaster dry – your child is not allowed baths during this time.
- Change your baby's nappy frequently to avoid soiling the plaster.

It is important to contact the hospital if:

- You cannot see your baby's toes.
- Your baby's toes are not pink and warm.
- The plaster becomes loose, cracked or crumbly.
- Your baby is crying more than usual and appears to be in pain.

Will surgery also be needed?

The majority of babies born with talipes have a tight achilles tendon (heel cord). To achieve a good result, this tendon requires lengthening with a small operation called a tenotomy. This is usually planned at around week six of the casting. Any children that do not require surgery may instead begin the boots and bar stage of treatment.

What does the tenotomy operation involve?

The operation will be performed under a general anaesthetic and involves a small cut in the heel. The surgery is usually done as a day case. During the operation, a plaster cast is applied to maintain the position of the foot and this cast will remain on for three weeks.

The boots and bar stage of the Ponseti technique

The final stage of the Ponseti technique involves fitting your child with boots attached to a metal bar. At this time, your child's final plaster cast will have been removed. His/her feet and legs might initially look quite swollen but this will settle down once the plaster has been off for a few days.

Babies can become upset when they are first put in the boots and bar, which can make it the most distressing part of the treatment for parents. It is very important, however, to persevere at this stage. If your child doesn't wear the boots and bar they might need to have further plaster casts or a repeat of the tenotomy surgery.

Why are the boots and bar important?

The boots and bar hold the feet in the position needed to stop the muscles and ligaments becoming tight again. The boots position the feet and the length of the bar maintains the correction.

How long will the boots and bar need to be worn?

The boots and bar **MUST** be worn for 23 hours per day, for approximately three months. They can only be removed while your child is bathing and dressing (maximum one hour per day). After three months, the boots are just worn at night (10-12 hours are recommended) and during routine naps. Throughout the day, your child can walk in bare feet or wear well-fitting shoes. These boots will need to be worn nightly until your child is up to five years old.

Will my child need any other special equipment or clothing?

Your child can use a normal pram, car seat or high chair. You may choose to use a model with a detachable strap so that it can be threaded between your child's bar and legs.

During the first three months of the boots and bar stage, if your child is wearing trousers he or she will need to have poppers or buttons between the legs so that the clothing can be fastened while the bar is in place.

Who fits and adjusts the boots and bar?

A member of the team does the first fitting of the boots and bar. You will be shown how to fit them yourself, so that you can continue at home. The boots are set to a specific angle, which must not be altered by anyone other than a member of the team. They can do this at your regular check ups.

How should the boots be fitted?

The boots should be detached from the bar before attempting to apply them. With the heel firmly placed at the back of the shoe, the middle strap, followed by the top one and then the bottom should be tightened. It is important that these straps are

securely and firmly fitted. Using the holes at the back of each shoe to look through, check to make sure that the heels are still in the correct position. Once both shoes are on, the bar can be clipped into place.

It is often advisable for your child to wear socks or tights with the boots - this will prevent the feet getting sore.

Will the boots be comfortable?

Your child will probably be upset when the boots are first fitted. From our experience, it is very rare that this is because she/he is in pain. In the majority of children, it is due to the frustration of having both feet attached to the bar, and they settle into them quite quickly.

How can I encourage my child to accept the boots and bar?

You can help your child accept the boots and bar by introducing playful exercises that teach your child to bend both knees at the same time. We will suggest some that seem to work. The more time that your child spends wearing the boots the sooner she/he will get used to moving both legs together.

In order to establish a regime, it is important to ensure the boots are used every day without any gaps. In our experience, children take longer to adapt to the boots when they are used intermittently.

If you notice that your child is crying more than usual, please check that the boots are fitted correctly and also check for rubbing or blisters. If you find any blisters, please make an appointment to be seen in the clinic. Blisters can mean the boots are getting too small or that the bar needs to be lengthened.

It is important to contact the hospital if:

- You have difficulty in fitting the boots and/or bar yourself.
- You are concerned that your child's skin looks sore.
- You think the boots and bar are becoming too small or are damaged.
- You are concerned about any other aspect of your child's feet.

It is important to follow all of the above instructions carefully to ensure the treatment is successful. Staff involved in your baby's care are happy to answer any queries you have.

Useful contact numbers:

- The consultant surgeon's secretary: **Tel: 01223 216101 (or ext 2101)**
- The plaster room: **Tel: 01223 217772 (or ext 3772)**
- The physiotherapists: **Tel: 01223 216633 (or ext 2633)**

If you have any problems outside normal working hours, please take your child to your local Emergency Department and contact one of the Addenbrooke's team as soon as possible.

National support group

STEPS - The National Association for Children with Lower Limb Abnormalities, **Lymm Court, 11 Eagle Brow, Lymm, Cheshire, WA13 0LP; Website: www.steps-charity.org.uk**



We are currently working towards a smoke-free site. Smoking is only permitted in the designated smoking areas.

For advice and support in quitting, contact your GP or the free NHS Stop Smoking helpline on 0800 169 0 169

Help with this leaflet:



If you would like this information in another language, large print or audio format, please ask the department to contact Patient Information: 01223 216032 or

patient.information@addenbrookes.nhs.uk



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