

Information brochure

CLUBFOOT

Clubfoot (Congenital Talipes Equino Varus – CTEV) is the commonest limb deformity in children that is seen at birth, with a reported worldwide incidence of 1 per 1000 live births (higher incidence in India). The term clubfoot refers to the physical appearance of an affected foot, wherein the heel is drawn up and sole of the foot is turned inwards. The exact cause for the deformity is unknown and efforts are currently underway to identify a genetic link. It is commoner in boys than girls. In the majority of cases, the deformity is a random occurrence with no previous family history of any limb deformities.

Frequently asked questions

When is the diagnosis made ?

Clubfoot is most often diagnosed at birth or occasionally by antenatal ultrasound scan during pregnancy.

Will there be anything else wrong with the baby ?

In most cases, clubfoot is an isolated problem. Occasionally it can be associated with other musculoskeletal or systemic problems. Your Paediatric Orthopaedic Surgeon will be able to advise you on further investigations if necessary, after the initial assessment.

What is the current mode of treatment ?

Serial corrective plaster casting is the accepted modality of treatment for clubfoot in the newborn. By this method, the aim is to stretch the soft tissues of the foot and gradually bring the foot into a fully corrected position. Although plaster casting has been prevalent for several decades, the Ponseti regimen of treatment has revolutionised plaster treatment with consistently reproducible good to excellent results.

What is the Ponseti regimen ?

Ignacio Ponseti was a Paediatric Orthopaedic surgeon in Iowa, US who had developed a strict protocol for the management of clubfoot, with emphasis on the correct sequence of correction and technique of application of casts. It was originally developed more than 40 years ago and it is now the initial treatment programme for most practitioners who routinely deal with clubfeet.

As per the Ponseti regimen, plaster casts are applied at weekly intervals in a defined sequence, with each cast change performed in the outpatient clinic setting. Once a certain degree of correction is achieved, the child may need a percutaneous tendon release (through a 0.5 cm skin cut). The plaster casts are followed by a period of bracing (Foot Abduction Brace). The Ponseti regimen has significantly reduced the need for major surgical procedures and long term results have shown that the corrected feet are strong, flexible and pain free.

When does the treatment start ?

It is ideal to start the treatment as soon as possible in order to take maximum advantage of the suppleness and elasticity of the soft tissues in the newborn. In our practice, plaster treatment is commenced in most cases by around 2 weeks after birth.

What is the duration of treatment ?

Following an initial assessment by the Paediatric Orthopaedic Surgeon, the treatment protocol and duration will be explained to the family. In the vast majority of cases, correction is achieved after 6 to 8 plaster casts. At the end of this phase, the foot is reassessed to determine whether further plaster casts are needed or whether the child can move into the next phase of treatment.

What are the phases of treatment ?

Initial serial plaster casts at weekly intervals

Full time bracing for first 3 months (23 hours a day)

Night and nap time bracing up to the age of 3 or 4 years

What are the key milestones to look for during the course of treatment ?

The achievement of a plantigrade foot (foot at 90 degrees to the leg) is a key landmark which is usually achieved after 6 to 8 plaster casts.

The ideal position is a slightly overcorrected foot, and the decision will be made by your surgeon after the first phase, whether further casting or a tendon release is needed to achieve this.

Will the child need regular follow up and / or further surgery after successful plaster cast treatment ?

The child will need a clinical review at all key stages of the treatment regimen. Once the child reaches the 'night and nap time' brace wearing stage, the clinical review is phased out to once every 3 or 6 months. About a third of children may need a tendon transfer around the age of 3 or 4 years, if there is a mild residual deformity.

What is the final expected appearance and function of the foot ? Will the child have any long term functional limitations or problems ?

A successful outcome following treatment results in a foot which is not deformed, not scarred and not stiff. In the case of unilateral deformity, there will still be a slight difference in size of the foot and the calf compared to the unaffected side, which is part of the condition.

How do I look after a small child with plaster casts ?

The family will be provided advice as to how look after the plaster casts. The casting professional will be available to provide telephonic advice during the daytime in the event of any parental concerns.

Are there any complications associated with plaster treatment ?

The parents and the family will be advised about looking after a child in plaster casts. The common complications are irritation to the skin, plaster reaction and slipping of plaster casts.

Are there other treatment modalities for clubfoot ?

In addition to serial plaster casts, surgical release of the soft tissues, corrective bony surgery and gradual correction with an external fixator are the other treatment options. These modalities of treatment are indicated only in the older child whose foot deformity has been neglected, inadequately treated or relapsed.

My child has had plaster treatment before and has now been told that he / she needs surgery. What do I do now?

Serial casting as per the Ponseti regimen can be undertaken even if the child has had previous plaster casts (partially or inadequately treated). There is evidence to show that Ponseti regimen can achieve good results even after previous surgical release. Your Paediatric Orthopaedic Surgeon will be able to advise you on the appropriate modality of treatment after careful assessment of the foot and the child.