

## Clubfoot Overview

### Introduction

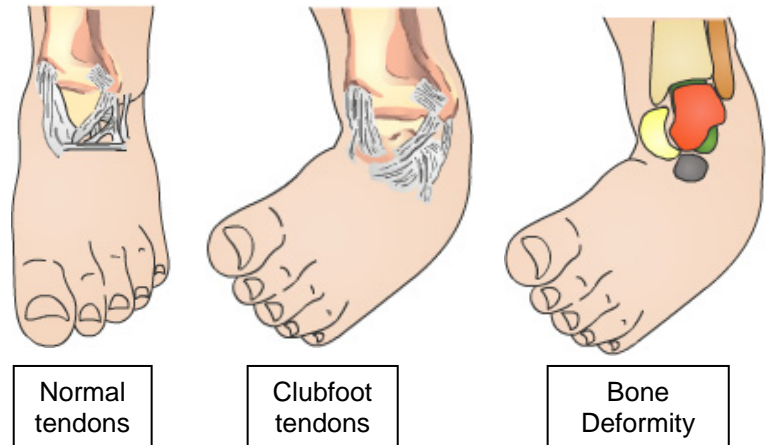
Clubfoot is a common birth defect that affects one in 1000 babies. The term clubfoot is used when a baby is born with one or both feet twisted inward and pointing down. Clubfoot is not painful and early treatment can correct almost all cases of clubfoot.

This reference summary explains what clubfoot is, its causes, complications, treatment options, and relapse prevention.

### Anatomy

Tendons are tissues that connect the muscles to the bones. They help hold the foot in place.

In a person with clubfoot, the tendons in the leg and foot are shorter than normal. They pull the foot into an abnormal position, which results in bone deformity. This deformity is reversible with early treatment.



In a normal foot, the ankle rests at a 90 degree angle and the sole of the foot faces downward.

In a person with clubfoot, the foot is turned down and inward, like the shape of a golf club head.



Clubfoot can be mild or severe. In some cases, it may even seem as if the foot is upside down.

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Clubfoot can affect both feet, known as bilateral. It can also only affect one, known as unilateral.

Even after treatment the leg with clubfoot may have smaller calf muscles and the foot may be slightly smaller than the normal one. But the leg will still work normally.

## Causes

Doctors do not know exactly what causes clubfoot. Sometimes clubfoot occurs along with other congenital problems. Congenital means present at birth. But, most of the time the cause is not known.

Clubfoot is not caused by the positioning of the fetus in the womb.

There are some factors that doctors do know place a baby at an increased risk of getting clubfoot. These include:

- Sex. Boys are twice as likely as girls to have clubfoot.
- Family History. If a parent or another child had clubfoot, then the risk of having clubfoot increases.
- Environment. Clubfoot has been loosely connected to pregnancies that were complicated by an infection, drugs or smoking cigarettes.

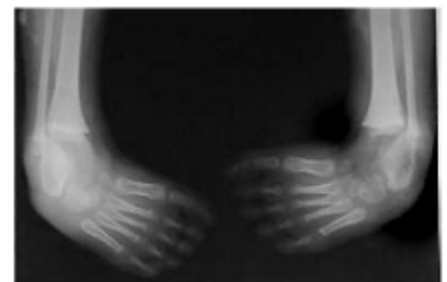


Clubfoot is not caused by something the mother did or did not do during pregnancy.

## Diagnosis

Clubfoot is easily diagnosed with a simple physical exam. Sometimes doctors may do additional tests like x-rays.

Clubfoot can sometimes be seen on an ultrasound before birth. Even though it cannot be treated before the baby is born, this kind of early diagnosis can help parents prepare and plan for treatment.



X-ray of clubfoot

## Untreated Clubfoot

Clubfoot is not painful or even a problem until a child begins to walk. If a child with clubfoot is not treated, the foot will stay twisted. Untreated clubfoot leads to problems with walking and can cause the child to have severely limited mobility, leading to

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lifelong disability. For people with untreated clubfoot, wearing normal shoes is impossible.

Children who manage to walk with clubfoot may walk on the outsides of their feet. This can lead to thick calluses, infection in the feet, and chronic pain.

Luckily, most cases of clubfoot can be treated easily.

## Treatment Options

Treatment for clubfoot is usually started in infancy. The Ponseti method is the most common treatment option and is usually started in a baby's first two weeks of life.

Though best if started in infancy, doctors are now achieving good results using the Ponseti method in patients up to 20 years of age.

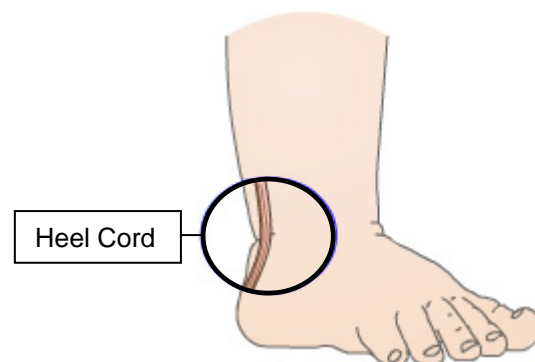
The affected feet are gently stretched and manipulated towards a more correct foot position using the Ponseti method. The position is held in place by a long leg plaster cast that is applied from the toes to the groin.



The cast stays on for 4-7 days. The cast is then removed. The affected feet are stretched and manipulated again. Another cast is applied. The process of stretching and casting is usually repeated 5-8 times.

In most cases, once the tendons and ligaments are stretched enough to allow the bones of the foot to move into the correct position, a minor procedure and final casting is needed.

Most times, before the last cast of the treatment process is applied, the heel cord is snipped. The heel cord is the tendon that connects the heel to the calf muscles. This is done usually under local anesthesia.



When the final cast is removed, the heel cord has healed and regenerated to the correct length. Whether or not the heel cord was cut, the last cast must be left on for 2-3 weeks. Stretching, taping, and splinting, known as the French method, is an

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alternative treatment. Using this method, the affected feet are manipulated daily into a more correct position. Adhesive tape and splints are used to hold the feet in place until the next day's manipulation. After a few months of daily manipulations, the sessions are decreased to a few times a week until full correction is achieved. Splints and exercises are used afterwards to prevent relapses.

Rarely, a child's tendons and ligaments may be too stiff to correct with the Ponseti method or other non-surgical methods . If these methods are not successful, the child may need surgery.

### **Relapse Prevention**

Clubfoot tends to relapse without proper care after the stretching and casting process. In order to prevent the foot from moving back to the incorrect position, the child must wear a brace.

Initially, the brace is worn 23 hours a day for 3 months. After that, the brace only needs to be worn at nap time and at night. It is important for parents to follow their healthcare provider's directions in order to prevent clubfoot from relapsing.



### **Summary**

Clubfoot is a common birth defect of a baby's foot. It is when one or both feet are twisted inward and pointing downwards.

Left untreated, clubfoot can lead to inability to walk, infection, and chronic pain. Thanks to advances in medicine, most cases of clubfoot are easily treatable without surgery.

The most common treatment is called the Ponseti method. The Ponseti method is a process of repeated gentle stretching and immobilization with a cast. When performed by a properly trained healthcare provider, it is very successful in treating clubfoot.

With early treatment and consistent use of a brace for a few years after the stretching and casting, most cases of clubfoot can be corrected so that the foot is functionally normal.



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