

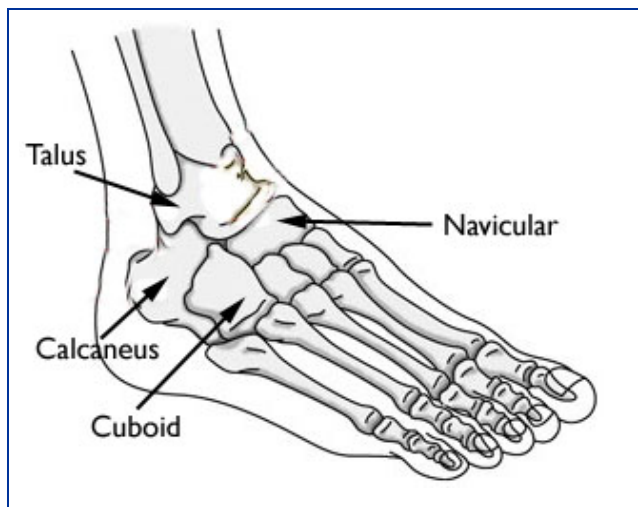
## Vertical Talus

Vertical talus is a rare deformity of the foot which is diagnosed at the time of birth. Because babies are born with the condition, it is also known as congenital vertical talus. It is one of the causes of a flatfoot in the newborn. One foot, or both feet, may be affected.

Although it is not painful for the newborn or even the toddler, if it is left untreated, vertical talus can lead to serious disability and discomfort later in life.

### Anatomy

The talus (TAY-lus) is a small bone that sits between the heel bone (calcaneus) and the two bones of the lower leg (tibia and fibula). The tibia and fibula sit on top and around the sides of the talus to form the ankle joint. The talus is an important connector between the foot and the leg, helping to transfer weight across the ankle joint.



### Description

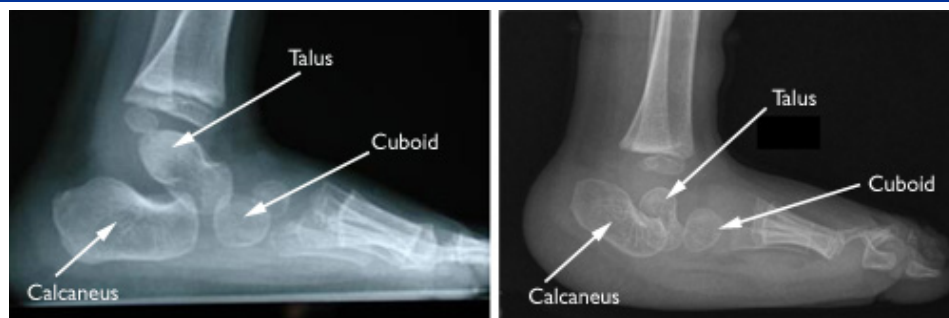
In vertical talus, the talus bone has formed in the wrong position and other foot bones to the front of the talus have shifted on top of it. As a result, the front of the foot points up and may even rest against the front of the shin. The bottom of the foot is stiff and has no arch — in fact, it usually curves out — and is often described as "rocker bottom."



This 9-month-old infant has vertical talus in both feet.

*Reproduced from Kasser JR, ed: Orthopaedic Knowledge Update, ed 5. Rosemont, IL, American Academy of Orthopaedic Surgeons, 1996, p 507.*

Vertical talus is usually diagnosed at birth (perhaps even before birth if an ultrasound is performed during the pregnancy). Other foot deformities in the newborn are more common and vertical talus is often initially misdiagnosed as some other type of newborn flatfoot, or even as a clubfoot.



**(Left)** An x-ray of an infant's foot showing normal bone position. In this xray, the talus is pointing toward the toes. **(Right)** An x-ray of an infant's foot with vertical talus. In this x-ray, the talus is pointing straight down.

*(Left) Courtesy of Texas Scottish Rite Hospital for Children (Right) Courtesy of Campbell Clinic Orthopedics*

## Cause

The exact cause of vertical talus is not known. Many cases of vertical talus, however, are associated with a neuromuscular disease or other disorder, such as arthrogryposis, spina bifida, neurofibromatosis, and numerous syndromes. Your doctor may decide to perform additional tests to discover whether your infant has any of these other conditions.

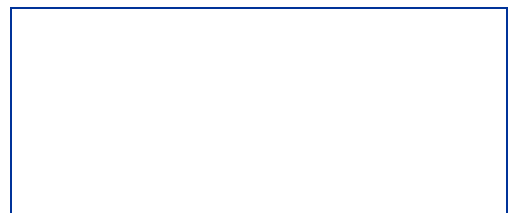
## Treatment

The goal of treatment for vertical talus is to provide your child with a functional, stable, and pain-free foot.

It is important for vertical talus to be treated early. If the deformity is allowed to progress and your child learns to walk on an abnormal foot, calluses and painful skin problems will develop. It becomes hard to find shoes that fit properly and your child will not be able to walk normally.

### **Nonsurgical Treatment**

Although the most common treatment for vertical talus is surgery, your doctor may recommend a trial of nonsurgical treatment. This includes a series of stretching and casting designed to increase the flexibility of the foot and even in some cases correct the deformity all together.



Some doctors also recommend continued physical therapy exercises to stretch the foot and improve flexibility.

(Note: with any casting, bracing, or a stretching program, you should watch for changes in the temperature and color of your child's foot. These may indicate a problem with circulation.)

### **Surgical Treatment**

If this conservative treatment is not successful in correcting the problem, your doctor may recommend surgery at approximately 9 to 12 months of age.

**Procedure.** Surgery is designed to correct all aspects of the deformity, including problems with the foot bones, as well as the ligaments and tendons that support the bones.

During the operation, your surgeon will put the bones in the correct position and apply pins to keep them in place. Tendons and ligaments that may have shortened as a result of the deformity will be lengthened.

**Surgical recovery.** After the operation, your surgeon will apply a cast to keep your child's foot in the corrected position. Your child will most likely stay in the hospital for at least one night after surgery to help control pain, and for your surgeon to monitor any swelling in the foot.

After 4 to 6 weeks, the cast will be removed. A brace or special shoe may be required to help prevent the deformity from returning.



A toddler with congenital vertical talus. Note the severe flatfoot.

*Courtesy of Texas Scottish Rite Hospital for Children.*

## Outcome

Without treatment, you child's vertical talus will most likely result in future pain and disability.

With treatment, you can expect a stable and functional foot that should serve your child well throughout life. If you child has no other conditions that limit function and development, you can expect your child to run and play without pain, and to wear normal shoes.

Your doctor will likely recommend repeat clinic visits over the years to observe the growth and development of your child's foot.

Last reviewed: August 2011



Reviewed by members of POSNA (Pediatric Orthopaedic Society of North America)

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