

OUR TWO FEET

Foot and Ankle Education For The Community

Indiana Podiatry Group

We have been providing central Indiana with advanced and compassionate foot and ankle care since 1993.

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Common Foot and Ankle Problems In Children

Kids can experience foot pain and injuries just like adults. Foot and ankle problems in kids are quite common, and usually should be properly treated to avoid future potential issues later in life. This article will discuss common issues kids have with their feet and ankles, and how these conditions are often treated.

Ingrown Toenails

Ingrown toenails in kids generally occur due to genetic factors that cause the nail to become ingrown from the start during development in the womb, as opposed to many adults who develop ingrown toenails later in life from pressure and damage to the nail that causes the root cells growing nail to deform and grow the nail inward. The ingrown shape of the nail itself is not usually a problem, unless skin next to it becomes inflamed. Once inflamed, the skin is sensitive, and the nail growing into it can cause pain at that point. Bacteria can also become trapped, leading to infection and drainage. Children can irritate the skin next to the nail quite easily through rough play, clumsy object handling, as well as poorly fitting shoes during growth periods.



Because of the shape of the nail, persistent issues of the ingrown nail is to be expected over the years, and it is often not enough to simply treat with antibiotics, soaking, and even partially removing the side of the nail. Permanent removal of the side of the nail by chemically destroying the nail root cells is the best way to get permanent relief. The results are excellent, the procedure is quick and easy to perform in the office, and it is rare for complications to develop.

Heel Pain

Heel pain is one of the most common reasons why children come to see a podiatrist. Heel pain is common in all age groups, but in children, and even adolescents, the cause of the pain is vastly different than that seen in adults. While in adults heel pain is typically caused by inflammation of a ligament in the arch (plantar fasciitis) or in the Achilles tendon depending on the location of the pain, heel pain in kids is usually caused by inflammation in a growth plate in the heel bone.

This is also known as Sever's disease, and it is common during late childhood and early adolescence. It is often seen in athletic children. Those that participate in year-round sports seem to be the most likely to get it. The Achilles tendon is often part of the problem, as it can pull directly on the growth plate in the heel bone. Tightness of the Achilles tendon can worsen this pull, and lead to bone inflammation.



Symptoms typically include pain with sports (running and jumping), while daily activity such as walking are usually not painful in most cases. The pain can be felt anywhere in the heel, but is typically worse on the bottom back of the heel pad. Inflammation and warmth at this site is rare, and may indicate an uncommon but more problematic growth plate injury or even rare tumor.

Treatment usually involves only support, as this condition may come and go until the growth plate fuses, after which the condition resolves. Rest from athletics is important. Support measures often require stretching exercises, possible stretching help with a night splint, anti-inflammatory medications like ibuprofen, icing, and structural support with arch inserts to reduce heel rotation.

Warts

Another very frequent cause of foot pain is the common wart. Caused by multiple strains of

human papilloma virus infection, warts are often painful because the usual place one becomes infected by the virus is through exposure while walking barefoot, leading to most foot warts being located on the bottom of the foot. The callus that results with the wart can cause pain from the pressure of walking on it, although some warts cause no pain. Treatment of these warts involves tricking the immune system into finding and destroying the virus, and not directly destroying the wart itself as many people often assume. The viral is spread further than just where the wart can be seen, and simply 'cutting out' the wart does not lead to a cure. Chemical treatment with a mild skin acid is the most commonly employed technique, and it essentially causes light amount of inflammation in the skin around the wart which eventually stimulates an immune response in the body that results in the formation of immune cells that will directly kill the virus. Freezing treatment can result in the same response, but unfortunately owing to the thickness of the skin on the bottom of the foot direct liquid nitrogen is needed, which can be quite painful for some. Time and patience is needed to achieve the immune response, but once it develops the virus is eliminated no matter where it is present in the body.



Some children also have excessive foot sweating as a contributing cause for easier wart infection, and treatment of this can be helpful in reducing the potential for future infection from a new wart virus.

Flat Feet

Flat feet are a part of childhood, as this is a common foot shape during early development and growth. Medically significant flat feet develop after the initiation of a heel-to-toe walking pattern, usually some time after age 5, as the toddler 'floppy feet' disappear. Flat feet beyond this in and of itself is not a true deformity, as it is a normal variant of human foot shape. However, the presence of flat feet can lead to additional issues. One of the most common direct

symptoms associated with flat feet is arch fatigue with extended activity, as well as pain in the front of the leg at night from muscular overuse. Other



related pain can also occur due to strain in other parts of the foot from the flattening. For example, strain to the inner side of the foot near the ankle from can

result in a type of tendon inflammation, and this can also be compounded by the presence of an extra bone commonly found in some people on this side of the foot. Strain of a ligament in the arch called the plantar fascia, commonly seen in adults, can develop in children as well, although less commonly.

Most cases of flat feet in children are flexible, meaning that the deformity can be corrected with arch support. This is an important consideration, because treatment options highly depend upon this flexibility. Most cases of flexible flat feet respond very well to early initiation of orthotic shoe inserts to provide arch support. For many children, these inserts eliminate the fatigue of flat feet when combined with supportive shoes, and can also slow down the progression of deformities associated with flat feet (see the section below on early foot deformity). Orthotics, like prescription eyewear, cannot reverse or correct the actual deformity, but can improve the quality of a child's activity. However, some children with flexible deformities do not respond to orthotic therapy. For those children, there are a myriad of choices available for surgical correction, including procedures to limit the flattening, as well as bone and ligament/tendon reconstructive procedures. Some of these procedures do not require completion of bone growth, while others do.

Rigid cases of flat feet, in which the foot cannot be physically placed back into a more normal position, generally do not respond at all to orthotic therapy, as there is little to no motion to control. These cases typically require surgical reconstruction.

There are special cases of flat foot deformities that are typically discovered at birth or shortly

thereafter. These include conditions that have severe genetic deformities. Correction involves very early specialized intervention that may include manipulation and weekly casting, and sometimes surgical correction.

Early Foot Deformity

Some children develop foot deformities often assumed to be found only in older adults. The fact is, these very same deformities can develop early in childhood. Some of the more common deformities occurring in this category are bunions and hammertoes.

Bunions are common deformities involving the big toe that typically develop over the course of many years. The big toe pushes towards the toe next to it, and there is an enlargement on the inner side of the foot at the base of the toe. This deformity can appear early on during growth and development, especially if there is excessive mobility of some of the bones in the feet contributing to the bunion. The instability hastens the development of the bunion, and children who have early bunions often have more severe deformities than adults who develop it later on. Bunions can be very painful, and often require surgery for correction. Not all bunions are painful, however, and consideration for surgical correction is usually delayed until the bones have stopped growing, unless there is notable pain and activity limitation as a result of the deformity. Orthotic shoe inserts can be used to limit the excessive mobility, and help reduce the gradual progression of this deformity.



Hammertoes appear likewise in many people gradually through adulthood or early on in childhood. Hammertoes develop due to an imbalance between tendons that flex the toe up and down. This can occur often with flat feet and high arches. In adults, these can be painful from shoe irritation or rubbing in between the toes. Hammertoes are frequently seen but rarely painful in children, unless the toes rotate or cross over one another. Deeper shoes often help with

discomfort. Surgery is reserved for severe cases, or for deformities that interfere with shoe fit. Again, orthotic inserts can be used to reduce the gradual progression of these deformities in adulthood.

Abnormal Walking Patterns

The position of the feet when walking changes during a child's development, but sometimes the feet are in an abnormal position. Abnormal patterns include in-toeing (pigeon toe) and out-toeing. In-toeing is by far more common. This



can be caused by many different things, including abnormal bone rotation in the thigh, leg, or foot, as well as balance issues with the muscles in the thigh. In most cases, in-toeing will correct itself over time over time, or easily lessened with physical therapy and possibly

specialized shoe inserts. If the deformity persists after age 10, a consult with a pediatric orthopedic should be made, as surgery may be needed. If the rotation is in the foot itself and identified at birth, a child may undergo a series of casting to reduce the deformity, followed by using a splint during the first several years to keep the correction. Out-toe walking is caused by the opposite rotations from in-toeing. This pattern is less common, and can lead to knee pain and issues with simple activity. Surgery may also be needed if the rotation does not resolve by age ten.

Another common abnormal walking pattern involving the foot is toe walking. Toe walking looks like tip-toeing, and can have many different causes, including a tight heel cord (Achilles tendon), nerve disease, as well as psychological habit. It has even been linked with autism. Treatment of toe walking and restoration of normal walking depends on the ultimate cause of the condition. Physical treatment can include stretching, night splints, or surgical lengthening of the the Achilles tendon. Physical therapy can help as well.

Trauma

Children experience the same type of injuries that adults experience. These include fractures, stress fractures (especially in active athletes), tendon strains, ankle sprains, and turf toe sprains of the big toe joint. These conditions are treated similarly to adults, with rest, immobilization or bracing, anti-inflammatory medications, and possibly physical therapy.

The exception to this is with bone fractures that involve the part of the bone that is actively growing bone (growth plate). Special attention needs to be made to these fractures to ensure there is no early stoppage of bone growth or deformity. Treatment depends on the fracture pattern, and may involve resetting the bone externally or surgery to keep the fractured piece in place.

Final Note: Uncommon Causes of Foot and Ankle Pain

There are many uncommon conditions that can cause foot and ankle pain in children, far too many to detail in this article. The more serious of these include tumors of bone or tendons and ligaments that present as pain, warmth, and possibly swelling. Early cases of body-wide joint disease can also be seen in the foot and ankle, like juvenile rheumatoid arthritis. Uncorrected significant birth defects, such as clubfoot and other bone deformities, produce pain through the fact that the foot is abnormally shaped, as do deformities associated with neuromuscular disorders like cerebral palsy. Finally, children can experience a type of syndrome that produces pain out of proportion to expected levels following a relatively minor injury. Amplified musculoskeletal pain syndrome can follow a minor injury, and while it may resolve on its own in time, it can returned.

