

# TOE PROBLEMS IN CHILDREN



1



Minor toe variations are common. Parents often think that the unusual shape of a toe is the reason their child is slow or reluctant to walk. This is never the case. Some toe problems are discussed below.

## **OVER-RIDING SECOND TOE**

---

The second toe quite often lies cocked up above the first and third toes in the plump infant foot. As the foot becomes thinner with growth and spreads with weight bearing the toe comes to lie in line with the others. Treatment with strapping has no benefit and is not needed for something that will get better anyway.

## **WEBBED TOES**

---

Webbing between the second and third toes is common. It never causes symptoms even if complete and attempts to separate the toes with surgery can cause major problems with skin healing and infections. The fear that the child will be teased rarely occurs because children seldom go far with bare feet. The webbing is not easy to see in an active child. Webbing often runs in families.

## **CURLY THIRD AND FOURTH TOES**

---

This condition often runs in families. It is due to a minor imbalance of the small muscles in the foot. These toes rarely cause

problems even though they tend to sit under the next toe. Curly toes are never the reason for late walking in a child.

If the toe causes no pain there is no need for treatment. Strapping the toe or toe spacers do not correct the toe shape. If the toe causes pain it will show as redness of the tip or damage to the nail. A simple operation to cut the tendons to the toe will usually sort the problem though it may take some weeks to get better afterwards. If toe shape is the only problem the risks of surgery are probably too high.

## **OVER-RIDING FIFTH TOES**

---

In this condition the fifth toe lies on top of the fourth toe. It looks quite ugly but causes little in the way of complaints. If there are complaints, treatment can be used. Strapping or splints do not work so surgery is needed. There is a very small risk of losing the toe with surgery.

## **BUNIONS**

---

In the adolescent bunions may begin to develop. The most important cause of bunions is inherited but there isn't much you can do about your genes! Shoes are important. Bunions are ten times more common in women than men despite both sexes having the same genes for bunions. Fashion shoes with pointed toes are especially harmful. Don't be conned into thinking that you have to spend a fortune

on shoes. Any shoes that fit, including trainers and sandals, are perfectly OK. There is no treatment, other than wearing shoes that fit and possibly barefoot walking, which can prevent bunions from developing. Surgery may eventually become necessary for severe bunions. Operation is best left till adulthood since the bunions tend to recur rapidly if the foot is still growing.

## **OTHER TOE PROBLEMS**

---

There are several other variations of toes that can cause anxiety. The big toe can be hooked inwards (called metatarsus adductus), curled (called hallux flexus) or pointing upwards (called hallux erectus). Metatarsus adductus has all but disappeared since we stopped lying babies face down in the cot. Some children will actively hook their big toe inwards when standing in bare feet but the toe lies normally in the shoe. They always grow out of it so no treatment is needed. It is the same for hallux flexus and hallux erectus which always disappear in time.

War to see if flat feet should be a reason for refusing entry to the army found that soldiers with flat feet had the least problems, while high arched feet caused serious problems. Soldiers with normal arches were in between.

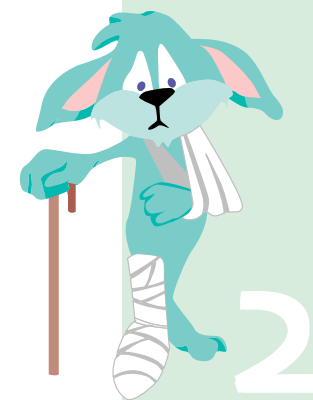
## **WHY DO SOME PEOPLE URGE FOR TREATMENT OF FLAT FEET?**

Research has shown that some adult high class athletes with flat feet can get foot, shin or knee pain when pushing their body to the limit. Many high-class athletes have loose ligaments, which also means that they are more likely to have flat feet that persist as an adult. Arch support insoles worn during training can improve their pain and performance though there is no evidence of benefit for every day activities.

Some professionals believe that flat feet can be eliminated in adults by giving arch supports to children with flat feet. There are studies showing that such treatment does not work.



# FLAT FEET



2

Your child has flat feet. This leaflet will help you to learn more about this normal stage of growth of a child's foot.

## **WHAT ARE FLAT FEET?**

---

A foot is called flat if the arch on the inner border of the foot is not as high as normal. It may also look like the ankle bone on the inside is more obvious or that the whole foot seems tilted out the way.

## **IS IT SERIOUS?**

---

No! Flat feet occur as part of normal development in 97% of children. It is the 3% who do not have flat feet who are abnormal. Some children have looser ligaments, which is why some feet seem flatter than others. Your doctor has examined your child to exclude flat feet caused by abnormal bones in the feet, which produce stiff painful feet rather than flexible normal young feet.

## **SHOULD THEY BE TREATED?**

---

Studies by Professor Staheli in America have shown that insoles or arch supports do not help the arches of the foot to develop. Indeed there was a hint that such devices slowed down the normal arch

development. We know that without treatment 96% of children will have normal arches by age 14. A child who "gets better" with arch supports was going to develop normal arches anyway and did so despite, rather than because, of the treatment.

## **CAN ARCH SUPPORTS CAUSE HARM?**

---

Possibly. Professor Staheli found that children who were prescribed arch supports for flat feet did less well at school and in life when compared to similar children with flat feet who did not have arch supports. He thought this might be because children with arch supports were teased by their friends.

A study in England by Professor Wallace on children with flat feet and early bunions looked to see if arch supports would prevent the bunions getting worse. It showed that it was the children treated with arch supports who developed the worst bunions.

However most trainer shoes have small built in arch supports which are unlikely to do harm or cause a child to be teased.

## **DOES YORKHILL HOSPITAL EVER RECOMMEND ARCH SUPPORTS?**

---

Not for normal children though trainers can be useful for the child who rapidly destroys their shoes. Occasionally if feet are painful they can help. We sometimes use supports for children with severe flat feet caused by an underlying problem such as cerebral palsy or a bony abnormality causing a painful stiff flat foot. In the adult, supports are only of value in athletes and are best custom made for that individual.

## **IS THERE ANYTHING THAT CAN HELP?**

---

Yes. Professor Joseph in India found that children who did not wear shoes before age 6 always developed normal foot arches as the foot matured. Obviously in Scotland it is not possible to go outside without shoes on most occasions but where possible you should encourage your child to run around barefoot and on tip-toe since this will strengthen the muscles which help the arches of the foot to develop.

## **WHAT IF FEET ARE STILL FLAT AGE 14 YEARS?**

---

In most people flat feet cause no complaints and can be ignored. Indeed, a study done just after the Second World

# HEEL PAIN



3



Your child has been referred to the clinic because of heel pain. Examination and X-rays have shown no serious disease. The pain is due to a condition called "Sever's Disease". This leaflet tells you about Sever's Disease.

## **WHAT IS SEVER'S DISEASE?**

---

It is not really a disease at all. It is a type of growing pain, which protects your child's growing skeleton from damage caused by over activity at a time when rapid growth of the heel bone makes the bone weaker than normal.

## **SO WHAT CAUSES THE PAIN?**

---

At the back of a child's heel there is a thin slice of bone that is separated from the rest of the heel bone by a growth plate. A growth plate is made from gristle and is weaker than bone. Attached to one end of this slice of bone is the Achilles' tendon and calf muscle. At the other end is the strong ligament that supports the long arch of the foot. When a child is growing fast the growth plate becomes thicker and even weaker. The thin slice of bone, particularly in a very active child, is pulled so hard between the Achilles' tendon and the arch

ligament that it develops tiny cracks. These cracks are painful but the pain is important. It stops your child from pulling off the tendon, which would leave them disabled. Adults cannot get Sever's disease because we don't have growth plates.

## **HOW IS IT TREATED?**

---

The most important thing is to reduce your child's level of sport to the point where the heel pain is only minor. Rest, ice, elastic bandages and sitting with the foot up can help with flare-ups. Once the bone is no longer being pulled by excessive activity the cracks heal. It is then usually possible to again increase activity. However, because the growth plate remains weak during rapid growth the problem can recur. If it does, you will have to reduce their sport until things once more improve. This usually happens when growth slows again, since growing occurs in spurts.

## **WHY AREN'T THE CRACKS TREATED WITH A PLASTER?**

---

They can be. However plasters are uncomfortable, weaken the bones and make the joints stiff. The crack fractures will heal just as well without a plaster. There is then less risk that the problem will

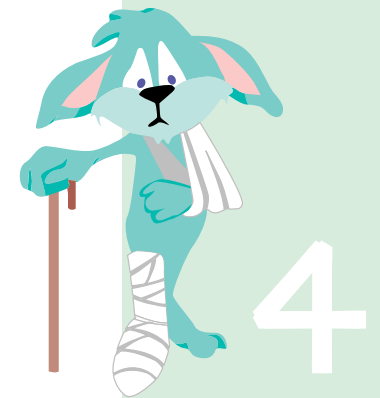
immediately recur because the child thinks the plaster has cured them and again runs around wild.

## **CAN ANYTHING ELSE BE DONE TO HELP?**

---

Yes. Sometimes the calf muscles tighten up because they grow more slowly than the bones. Tight muscles will pull harder on the heel bone through the Achilles' tendon and make the pain worse. Exercises to stretch out the calf muscle may therefore help the pain. Wearing trainers or shoes with a bit of a heel may also help. The reason ladies wear high heels is that the calf muscle works less hard which makes it slimmer (and thus more attractive!). If the muscle pulls less hard, the pain should also be less.

# INTOEING



Your child walks with the feet turned in or intoed. Some call this hen toeing or pigeon toeing. The problem appears to be in the feet but careful examination reveals that the whole leg, not just the foot, is turned in the way. The in-turning is at the hip. Whilst intoers seem rather clumsy and may fall a lot they are quite healthy. Intoers commonly have supple joints and examination shows that the hips can be turned in more than out.

## **IS INTOEING A DISEASE?**

---

Intoeing is too common to be thought of as a disease. One child in six is an intoer. It is more common than blue eyes or being left handed and no one would consider these conditions as a disease.

## **WHAT CAUSES INTOEING?**

---

The supple ligaments mentioned above. The hip is a ball and socket joint. At birth a baby's hips point partly forward in the socket. In toddlers with supple ligaments the hip takes longer to sort itself out and during this time the leg turns further inward during walking.

## **WILL INTOEING GET BETTER ON ITS OWN?**

---

In children under 8 years of age intoeing usually corrects on its own. Some children and their parents will be able to turn the hip further inwards than outwards. Walking intoed is a habit and there is nothing to stop your child walking with their feet pointing forwards if they want to. It just happens to be easier to walk with the foot pointing inwards. Many children improve with time. However, they will tend to intoe when tired, not concentrating or running fast.

## **WHAT ABOUT THE CLUMSINESS?**

---

Many parents worry that their child is tripping and falling. The in-turned foot may add to this but supple joints are also linked with clumsiness. Children are always more clumsy than adults.

As they practice doing things they learn to do them with better co-ordination and become less clumsy.

## **WILL MY CHILD ALWAYS BE CLUMSY?**

---

Most intoers do not remain clumsy. Indeed many intoers become above average sportsmen and women as supple joints are helpful for many sports.

## **CAN PHYSIOTHERAPY OR SPECIAL SHOES HELP?**

---

There has been research to see if physiotherapy or various shoe modifications will help intoeing but none show any benefit beyond the normal improvement occurring anyway with age. The same would apply to surgery.

## **IS THERE ANYTHING WE CAN DO TO HELP?**

---

One thing you can do is to prevent your child from sitting splay-legged in the W shape. Many intoers do this. Sitting cross-legged or with the legs dangling down is preferable.

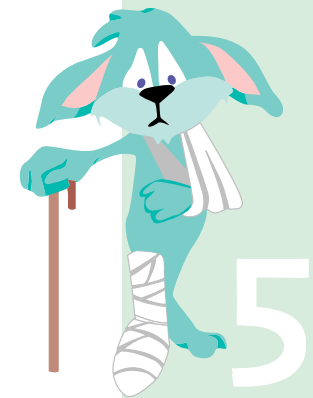
## **IN SUMMARY**

---

Intoeing is a harmless normal variation that may be beneficial to the human race. Treatment cannot cure the intoeing but stopping your child from sitting splay-legged can prevent problems in the future.



# LEG PAINS



5



Leg pains seem to occur in almost all children at some stage during growth. They are often known as growing pains though growth itself is not painful. We call these Benign Leg Pains because the pains do not cause long term problems even if they can be quite distressing at the time. There are two different patterns of leg pains. The first seems to occur in a very active child in the evening after excessive running about. The second occurs in the middle of the night when the child awakes screaming in pain, which they may localise to a foot or knee or hip.

## WHAT CAUSES BENIGN LEG PAINS?

---

No one knows for certain. We do know they are harmless. The pains that occur after exercise are probably the body's way of protecting the growing bones against overuse damage. Unlike adults, children have gristle plates scattered through their bones to provide growth. The body protects itself against overactivity and possible damage to the gristle plates with pain. During growth spurts these plates are weaker so the pain starts sooner. This is why the pains are called growing pains.

The pains that occur in the middle of the night are frightening because they seem so severe but they are just cramp. We all know how painful cramp can be! Cramp occurs when muscles are not getting enough

blood. Your blood pressure is lower during sleep and muscles are covered in a tight sheath. During muscle growth spurts the blood pressure may not be enough to supply the muscle during deep sleep. Alternatively the inflow of blood may be restricted because the child sleeps with their legs folded under themselves.

## WHAT CAN BE DONE ABOUT THE PAIN?

---

There are no magic wands but there is evidence that stretching exercises both morning and evening help. Stand your child facing a wall with their feet about 0.7 metres (2 feet) away. With their heels on the ground they should lean towards the wall with their hands (elbows bent) on the wall to stretch the calf muscles. To stretch the muscles at the back of the thighs your child should sit on the floor with their legs out straight in front of them and lean forward towards their toes keeping the backs of their knees on the floor.

Leg pains caused by over-activity will not occur if the child reduces their level of exercise to minimize the pain. This will vary depending on how fast they are growing. Remember that the pain is nature's way of protecting your child from more serious harm. Painkillers may allow the child to do more damage to themselves.

The night cramps are best managed by rubbing the sore leg and reassurance. The

pain usually settles before a painkiller has time to work since this can take up to half an hour. Giving a painkiller before bed does not help because no painkiller is strong enough for cramp. In any case the pain helps by raising the blood pressure which relieves the cramp more quickly. Going in at your bedtime to untangle folded legs helps to reduce the number of attacks. Eventually the child grows out of the cramps but this may not be until age 9 or 10.

## CAN LEG PAIN BE MORE SERIOUS?

---

Yes. A persistent limp or pain occurring day and night might be investigated further. An X-ray of the hips can exclude rare conditions such as Perthes' disease or a Slipped Upper Capital Epiphysis. These conditions may be suspected if your GP has noted abnormal movement of the hips. Knee pain can come from a hip problem. Localised pain and swelling should always be investigated.

These conditions have been excluded as the cause of your child's leg pains at present but if the pattern changes in the future you may wish to see your GP again.

# POPLITEAL CYSTS



6





## WHAT IS A POPLITEAL CYST?

A popliteal cyst is a benign fluid-filled swelling that appears at the back of the knee in some children. It connects with a cyst that we all have at the back of our knees. This cyst oils the hamstring tendons as they move over the back of the knee so they don't fray through. The cyst has a fancy name - the semi-membranous bursa-but most people find "popliteal cyst" easier to say.

## WHY DOES IT APPEAR?

We don't know. Extra fluid may be made to improve "oiling" of the tendons in supple children who can over-straighten the knee. This does not explain why only one knee is usually affected. Nor does it explain why not all children who can over-straighten their knees get a popliteal cyst. There is still a lot we don't know in medicine.

## WHAT SHOULD BE DONE ABOUT IT?

Nothing! The cyst is totally harmless. In most children it causes no problems. Occasionally after unusual exercise the cyst will get bigger and be uncomfortable. However, a day's rest will settle both the pain and enlargement. The cyst will eventually disappear on its own, though it can take 2 years.

## WHAT ABOUT SURGERY?

Surgery to remove the cyst is possible. We do not think removing the cyst is a good idea for two reasons. Firstly, because the cyst usually goes away itself and secondly, because half of the cysts come back after surgery. It seems unfair for your child to suffer the pain and risks of surgery only to end up with the same swelling and also a scar, especially if the lump is totally harmless and will go away in time on its own. Very rarely the cyst becomes so big and sore that an operation is needed. When this happens we just have to accept the risk of the cyst coming back.

# KNEE-CAP PAIN



## WHAT IS KNEE-CAP PAIN?

---

Knee-cap pain is pain that comes from the knee-cap or patella. It is usually felt at the front of the knee though it sometimes seems to spread around the sides and occasionally to the back of the knee. Many different names have been given to this type of knee pain including anterior knee pain, chondromalacia patellae and patello-femoral pain. Patello-femoral pain is the term used by most doctors.

## WHAT CAUSES THE PAIN?

---

The knee-cap is the most heavily loaded joint in your body. The most common reason for the pain is that your child has been growing or putting on weight. This increases the load the knee-cap has to bear at a time when it is still immature and not able to cope. A sudden increase in activity can also overload the joint. Pain is probably nature's way of protecting the knee-cap from overuse damage.

It is very rare that there is any abnormality of the bones or joint.

## IS KNEE-CAP PAIN COMMON?

---

Yes. A survey of over 1000 schoolchildren found that 21% (1 in 5) of girls and 6% (1 in 16) boys had knee-cap pain. It became less common by the end of their teens.

## CAN ANYTHING BE DONE TO HELP THE PAIN?

---

Nobody can cure the pain. Since the pain is protective, removing it would risk doing serious damage to the knee. However there are several things that your child can do to reduce the pain to a nuisance level. These are listed below:

### **1. Quadriceps exercises.**

The quadriceps are the thigh muscles that hold the knee straight when standing. If the knee is sore the muscles become weak very quickly. Weak muscles ache when asked to work, so they are rested more and become even weaker and more sore with use. Weak muscles are sometimes not able to support your weight, which may cause the knee to give way. This risks injury to the knee. Strong muscles help this pain and improve control of the knee-cap movements. The exercises are simple to do and can be done anywhere and any time without others realising. However, they only work if done regularly. We think they should be done 6 times an hour every day!

### **2. Sit with the knees straight.**

Another name for this condition is "TV knee". Many children sit with their legs folded under them, which puts high loads on the knee-cap. Sitting with the legs straight takes this pressure off the knee-cap and allows the joint fluid to circulate in the knee. This fluid is vital to nourish the shiny gristle lining the joint. It also acts as a shock absorber between the joint surfaces

and to "oil" the surfaces. Sitting with the knee bent for a long time squeezes out this fluid and can make the knee seize up because there is nothing to oil the surfaces.

### **3. Keep active and avoid things that make the knee painful.**

Exercise is vital to make the skeleton develop properly so we are not saying give up all sport. We do suggest reducing the level of activity when the knee is sore. This tends to be more common during a growth spurt when the bones may be slightly weaker.

### **4. Weight reduction where needed.**

The knee-cap carries between 6 and 12 times body weight during normal use. Being overweight or carrying very heavy school bags can greatly increase the load on the knee.

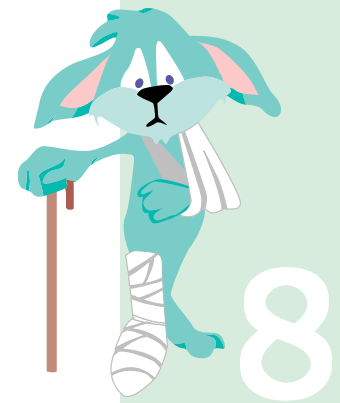
### **5. Shock absorbing footwear.**

Running, jumping and even walking applies jarring forces to the knee. These cannot be avoided, but the use of shock absorbing shoes may reduce these jarring forces. Some types of trainers have been designed for this purpose and are popular with kids. Where possible it is also sensible to walk or run on grass rather than concrete.

### **6. Simple painkillers.**

Even with these measures the knee will sometimes be painful. Simple painkillers, such as Paracetamol, will help the pain. It is best only to give Paracetamol at night to avoid the temptation to do too much without the protective pain.

# BOW-LEGS & KNOCK-KNEES

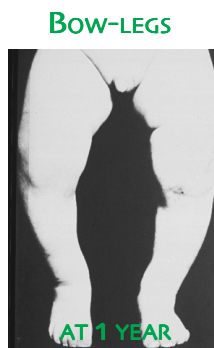


Your child has been sent to the clinic with either bow-legs or knock-knees. This leaflet will try to help you learn more about these knee shape problems. Bow-legs means that there is a gap between the knees when the ankle bones are pressed together. Knock-knees are present when there is a gap between the ankle bones when the knees are pressed together.

## ARE BOW-LEGS OR KNOCK-KNEES ABNORMAL?

Not in most children. A study in 1975 found that all children had bow-legs up until age 2 years. After this they became knock-kneed. The degree of knock-knee is most obvious between age 3 and 4. The legs then slowly straighten to the adult shape by age 10 to 12. Heavy children and children with loose ligaments stretch their knee joints and knee shape appears to be worse. Many babies have big calf muscles, which can make the leg seem quite bent even when the bones are only slightly curved.

We call bow-legs before age 2, and knock-knees between age 2 and 12 years normal because this is how a human is supposed to develop.

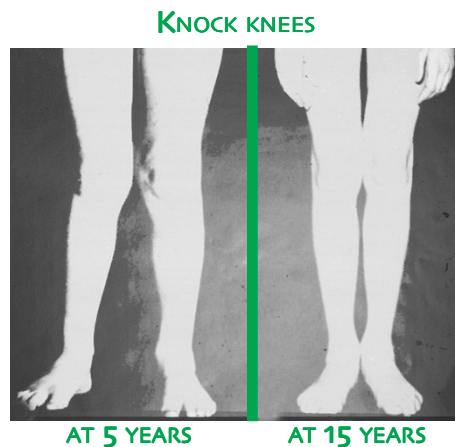


If a child has bow-legs beyond the age of 3, or knock-knees before age 2 or after age 10 to 12, this may be a problem. X-rays may be advised for these children. Even then the child may be normal since there is a wide range of "normal" which can sometimes overlap with the abnormal.

## WHAT ARE ABNORMAL CAUSES OF BOW-LEGS OR KNOCK-KNEES?

There are a number of causes.

Rickets is a cause, both of abnormal bow-legs or knock knees. Rickets results from lack of vitamin D. This occurs either through poor diet, lack of sunlight (which makes vitamin D in the skin) or because some people's bodies can't use vitamin D. A blood test tells the doctor if this is the cause. Rickets is treated with medication. Sometimes surgery is needed if the bone shape does not get better with medication treatment.



The other most common cause of abnormal bow-legs is genetic. If a close relative has bow-legs as an adult this may suggest that your child's bow-legs are genetic if they are still there after age 3. Treatment with splints or even surgery may be needed to sort the problem. Your Orthopaedic doctor would keep an eye on this problem with X-rays.



# IRRITABLE HIP



Your child has been diagnosed as having an irritable hip. This condition is also known as transient synovitis. It is very worrying for a parent if your child suddenly cannot walk or has a marked limp. However it is transient or short-lived and gets better.



## **WHAT IS AN IRRITABLE HIP ?**

When a hip is irritated more fluid is present and the joint becomes a little swollen. Fluid in the hip joint reduces normal movements in the hip. This fluid can be shown by an ultrasound scan of the hip, though examining your child is often enough.

## **WHAT CAUSES AN IRRITABLE HIP?**

A few happen after falls, over-activity or follow a viral upset. Many children have none of these and it just seems to have happened.

## **ARE THERE SERIOUS CAUSES OF AN IRRITABLE HIP?**

An irritable hip seems to be a simple condition and gets better. If the youngster returns to vigorous activities too soon it may come back. After a few weeks this is unusual.

## **HOW IS IRRITABLE HIP TREATED?**

Usually rest until it is better and the hip movements have recovered. The pain normally settles over a few days. The limp can take longer to go, especially if the child starts to run around too soon.

If the hip pain or fever are increasing despite rest and simple painkillers like calpol you should contact your G.P. for advice. Your G.P. may want to refer you to hospital as X-rays and blood tests may be needed. If these are OK your child can be treated at home with rest. When the hip is quite painful or the blood tests are abnormal, your child will be admitted to hospital for observation. Sometimes we have to take fluid off the hip under an anaesthetic to be certain infection is not present. This will help the pain by taking the pressure off the hip and confirms the cause of the limp.