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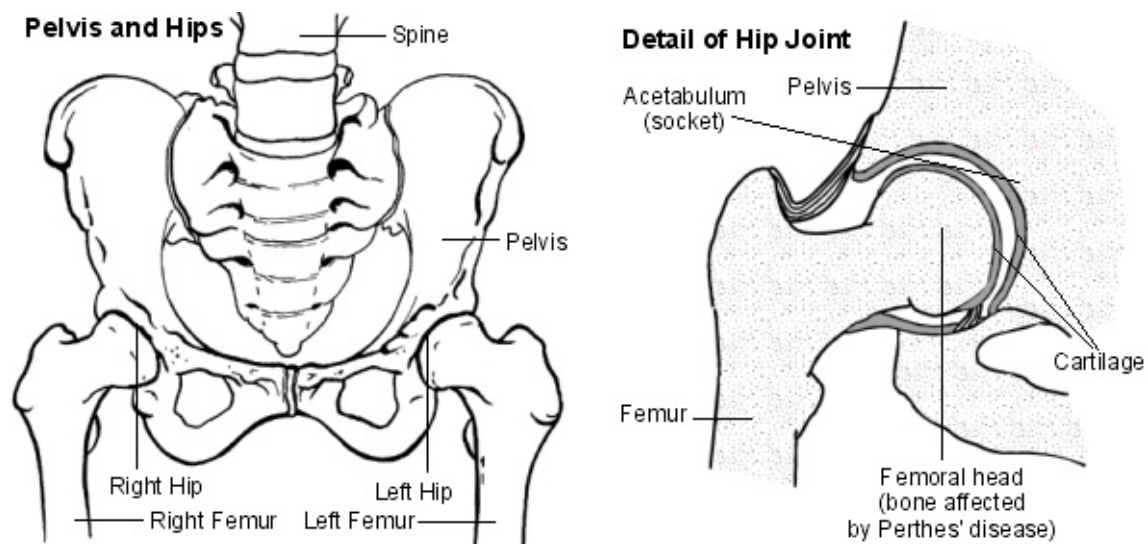
## Perthes' Disease

Perthes' disease is a condition where the top of the thigh bone in the hip joint (the femoral head) softens and breaks down. It occurs in some children and causes a limp and other symptoms. The bone gradually heals and reforms as the child grows. The aim of treatment is to make sure the femoral head reforms back into its normal shape so that the hip joint can work well.

### What is Perthes' disease?

Perthes' disease is a condition of the hip which occurs in some children. It was first described in 1910 by three separate doctors and so it is sometimes called Calvé-Legg-Perthes disease after each of these doctors.

### What happens in Perthes' disease?



Perthes' disease occurs in a part of the hip joint called the femoral head. This is the rounded top of the thigh bone (femur) which sits inside the hip socket (acetabulum). Something happens to the small blood vessels which supply the femoral head with blood. So, parts of the femoral head lose their blood supply. As a result, the bone cells in the affected area die, the bone softens, and the bone can fracture or become distorted. The severity of the condition can vary.

Over several months the blood vessels regrow, and the blood supply returns to the bone tissue. New bone tissue is laid down, and so the femoral head reforms and regrows. This is similar to how bone reforms and regrows after any normal fracture or break to a bone. But, with Perthes' disease, it takes longer (up to several years). The main concern with regrowth of the femoral head is to ensure that it forms a good rounded (spherical) shape. This helps it to fit well into the hip joint socket. If the femoral head is less rounded, hip movements may be affected and there may be more wear and tear on the hip joint.

The exact cause of the blood vessel problem that occurs in the first place is not known. A child with Perthes' disease is usually otherwise well.

Perthes' disease usually only affects one hip, but in about 1 in 6 cases it affects both hips (usually at separate times).

## Who gets Perthes' disease?

In the UK, about 1 in 1,200 children will get Perthes' disease. It occurs most commonly between the ages of 4 and 8 years. About four boys are affected for every one girl.

## What are the symptoms of Perthes' disease?

Symptoms tend to develop gradually and can include:

- A limp. This may gradually become worse over a few weeks.
- Pain in the hip and groin area. Sometimes pain is felt just in the knee or the thigh instead of in the hip - this is called referred pain.
- Stiffness and a reduced range of movement of the affected hip.
- In time, the affected leg may become slightly thinner (wasted) because the thigh muscles become thinner as they are not used as much as those in the other leg.
- The affected leg may look shorter than the good leg.
- Both hips may be affected but this is uncommon.

## How is Perthes' disease diagnosed?

The diagnosis can usually be made by a doctor's examination of the hip, plus an **X-ray**. (This is usually an X-ray of both hips so that the two sides can be compared.) Sometimes other tests may be suggested if the diagnosis is not clear or if a more detailed picture of the hip joint is needed. Possible tests may include:

- An **MRI scan**
- A **bone scan**
- An X-ray where dye is injected into the space within a joint (an arthrogram)

Also, blood tests, or a sample of fluid from the hip joint, may be needed to rule out other problems such as infection.

## What is the treatment for Perthes' disease?

The aim of treatment is to:

- Promote the healing process; and
- To ensure that the top of the thigh bone in the hip joint (the femoral head) remains well seated in the hip socket as it heals and regrows.

Which is the best treatment can depend on the age of the child and the severity of the condition. Treatments may include observation, bed rest and/or crutches, a plaster cast or special leg brace, or surgery. Your doctor will advise on the best treatment for your child.

### Observation and physiotherapy

In younger children (under 6 years old) and those with mild disease, Perthes' disease will usually heal well without any specific treatment. These children are treated by observation, often with physiotherapy or home exercises. The home exercises help to keep the hip joint mobile and in a good position in the hip socket. Advice may also include:

- To encourage swimming (to keep the hip joint active in the full range of movements); but
- To avoid activities that can lead to heavy impact on the hip joint, such as those involving trampolines and bouncy castles.

However, any advice will be tailored to your child's needs. Your child will also need regular follow-up with their specialist to check how their femoral head is healing. Regular X-rays of their hips are usually suggested.

Painkillers may also be useful to help relieve pain. Common painkillers suggested are ibuprofen and paracetamol.

### **Bed rest and/or crutches**

This may be needed by some children for a short time if their symptoms are bad.

### **Surgery**

An operation may be considered in some cases, particularly in older children or those more severely affected. Surgery can help to keep the femoral head well positioned whilst it heals, or can improve the shape and function of the femoral head if it has not healed well. There are various options, depending on each child's individual situation. If surgery is being considered, you should discuss the options fully with your child's surgeon.

## **What is the outcome (prognosis)?**

In many cases, the top of the thigh bone in the hip joint (the femoral head) regrows and remodels back to normal, or near-normal. The hip joint then returns to normal and is able to work as usual. However, it can take two or more years after the condition first starts.

The main concern is that the femoral head does not re-form properly. Flattening of the femoral head can occur in some cases and this can lead to a permanent change in the hip joint. This may cause stiffness of the hip joint. It can also cause arthritis of the hip joint at an earlier age than usual - for example, at around age 40. Sometimes, a hip replacement is needed as treatment for arthritis.

Things which may affect outcome include:

- **Age.** The younger the child is when Perthes' disease develops, the better the chance of a good outcome. This is because there is longer time for the hip to remodel before the child finishes growing. Children who develop Perthes' disease after about the age of 8-9 have the highest risk of permanent hip joint problems, such as stiffness and arthritis; there is less time for the hip to remodel before they finish growing.
- **Gender.** For any given age when the condition develops, boys have a better chance of a good outcome than girls. This may be because girls tend to finish growing a bit earlier than boys.
- **Severity.** The more severe the condition (which can be judged by the X-ray pictures of the hip), the greater the risk of permanent problems with the hip joint.

## **Further help & information**

### **Perthes Association**

PO Box 773, Guildford, Surrey, GU1 1XN

Tel: (Helpline) 01483 306637, (Admin) 01483 447122

Web: [www.perthes.org.uk](http://www.perthes.org.uk)

## **Further reading & references**

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