

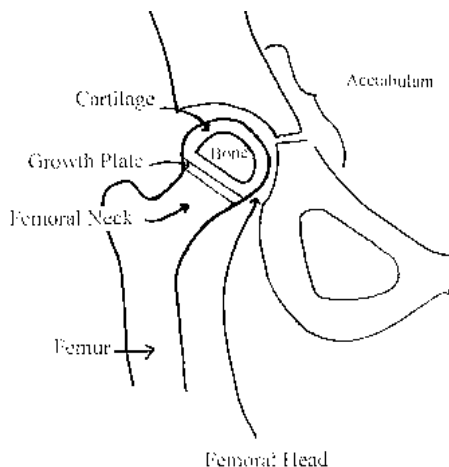
# Perthes Disease



## *What is Perthes Disease?*

- Perthes Disease is a self-limiting childhood disease of the hip.
- Initially there is a temporary loss of blood supply to the femoral head causing it to become soft and then collapse.
- As the disease progresses the collapsed bone is reabsorbed and replaced by new bone formation. This process can take anywhere from one to four years.
- Once healing is complete the femoral head may or may not be deformed. The aim of treatment is to prevent deformity.
- The cause of Perthes Disease is unknown.

**Diagram A: The Position of the Femoral Head**



## *The Symptoms of Perthes Disease*

In the early stages, a child may complain of pain in the hip, groin or knee. The pain is worse with activity and usually gets better with rest. Some children walk with a limp, with or without pain, or

complain of a 'stiff hip'. The symptoms are often inconsistent and the child may have difficulty describing them.

## *Treatments for Perthes Disease*

The goal of treatment is to keep the femoral head in the correct position in the pelvic socket so that it can remodel in a rounded shape, therefore alleviating stiffness; pain; abnormal leg length; and osteoarthritis.

Treatments include: rest, including non weight-bearing activities; 'slings and springs'; broomstick plasters and/or bracing; and surgery.

## *Rest/Activity Restrictions/Medications*

A child with Perthes Disease can be involved in low impact activities at school that do not put pressure on the affected joint. Physical activities such as swimming are encouraged. If a child with Perthes Disease experiences discomfort or pain at any time, he or she needs to rest so as not to aggravate his or her symptoms. Some children may require the use of a wheelchair and/or crutches throughout the day to alleviate these symptoms and allow for minimal impact on the affected joint.

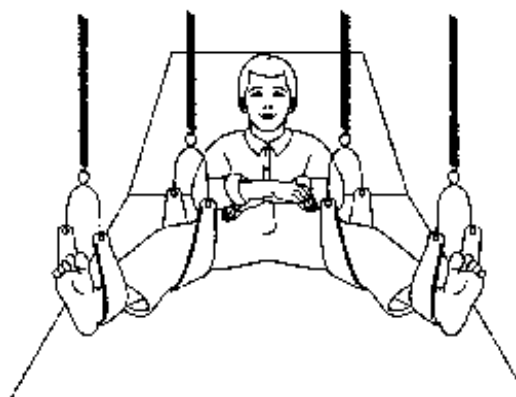
## *Slings and Springs'*

Some children need to be hospitalised for 'slings and springs' treatment or have night-time treatment at home. 'Slings and springs' are used to suspend both the legs above the bed. This allows the affected leg to relax and move more freely out to the side. The aim is to



increase the amount of abduction (sideways movement) of the affected hip and therefore, position the femoral head adequately in the hip socket.

### **Diagram B: The Use of 'Slings and Springs' for Perthes Disease**

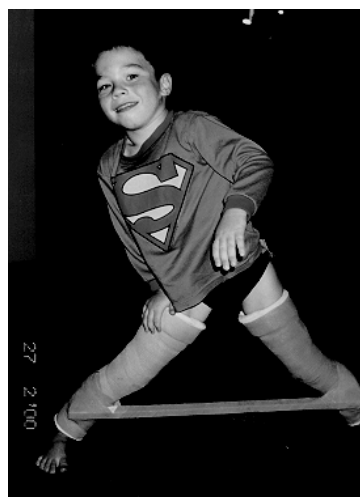


If the child requires this treatment in hospital, he or she will be admitted to the Orthopaedic Unit for several days. If the child is receiving this treatment at home, he/she will be required to stay in 'slings and springs' for as much time as possible out of school hours. (This will include sleeping in them.) It is not unusual for children to experience disturbed sleep during this treatment, and they may be tired and grumpy during their school day. During this time of treatment, low impact activities during the day are recommended as tolerated.

### ***Broomstick Plasters***

Broomstick plasters are long leg plasters from groin to ankle held in an 'A' shape position by a broomstick.

### **Diagram C: Broomstick Plasters**



During this treatment, the child will be in a wheelchair for the majority of time. With adult supervision, they are able to stand and walk short distances. For older children, crutches can also be used, depending on the capability of the individual.

The following considerations may assist education professionals with children with Perthes Disease at school.

#### Supervision/assistance:

For all aspects of mobility during a school day, the child will need supervision/assistance. A volunteer, parent or Inclusion/Integration Assistant (School Support Officer) can assist with this. After discussion with parents, a 'Buddy' could assist.

#### Wheelchair access:

Ramps will need to be in place where the child requires access. Portable ramps may be hired but they only cover three steps.

#### Disabled toilet:

Easy access to a disabled toilet is required so the child is able to move through the doorway, pivot around to sit down and get up from the toilet.



### Classroom environment:

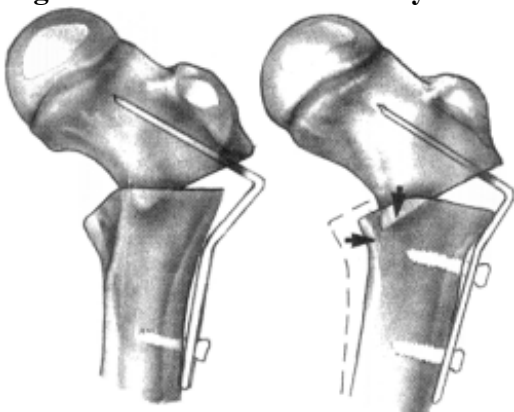
The set-up of the classroom (tables and chairs) may need to be adjusted to allow the child to move around and access classroom materials. As this stage of treatment is quite restrictive for an extended period of time, an adjustable table and chair may need to be borrowed or purchased if the funds are available in order for the child to be more comfortable.

### ***Surgery***

Children with Perthes Disease may have one of three types of surgery to treat their condition. These include a pelvic osteotomy, a femoral osteotomy or the application of an external fixator or a frame. The type of surgery will depend on the orthopaedic surgeon's choice and results of clinical examination and x-rays.

**Pelvic/Femoral Osteotomy.** An Osteotomy refers to a 'cut' in the bone. The aim of this treatment is to reposition the femoral head in the pelvic socket to allow it to remould in a rounded shape. The osteotomy can be in either the thighbone or the pelvis, depending on the positioning required. The femur is held in place by a metal plate and screws.

### **Diagram D: Femoral Osteotomy**



### ***External Fixator or Frame***

Another type of surgery is the application of an external fixator or a frame. This involves the application of an external device to the upper thigh. Two groups of steel pins are inserted through the skin and muscle into the bone of the thigh and the pelvis. At the time of operation a slight 'pull' is applied to the thighbone to pull the round head of the femur away from the cup of the pelvis. The frame is then locked into position. This is done to improve the blood supply to the hip joint. It is anticipated that this device would be in place for up to six months. However, many children have it removed earlier. The child initially uses a wheelchair. However, most children are soon mobile on crutches and many are walking independently after this.

The following considerations may assist education professionals after surgery. Post surgery, the child will not be able to stand or bear weight on the operated leg for six to eight weeks. They will return to school either in a wheelchair or using crutches. The use of crutches depends on their age and capabilities.

### Supervision/assistance.

If the child is unable to use crutches and requires a wheelchair, he/she will require assistance and supervision for all aspects of mobility. Older and more capable children using crutches will require a little more consideration than their peers, but should be able to attend to their own mobility needs. The needs and capabilities of a child following this surgery should be discussed with the parents.



### Wheelchair access.

Ramps will need to be in place if the child requires a wheelchair for a period of six to eight weeks. Portable ramps may be hired but these type of ramps only cover three steps.

### Disabled toilet.

Regardless of capability, it is advised that children returning to school after surgery use disabled toilets. This will make it easier for them to move around, as it is always awkward when one foot must stay off the ground.

### Classroom environment.

The layout of the classroom (tables and chairs) needs to be adjusted for the child to move around and access classroom materials. As this stage of treatment is quite restrictive for an extended period of time, an adjustable table and chair may need to be borrowed or purchased for the child to be more comfortable.

### Wound/dressing.

The child will have a fairly long suture line on the affected hip. Whilst this is healing it should be covered by a dressing. The dressing will be checked and attended by the local General Practitioner, visiting nurses or parents.

### External fixator or frame.

If they have had an external fixator or frame applied, they will need to either visit the hospital or be visited by a district nurse on a weekly basis for pin-site dressings.

### Special consideration.

Children undergoing surgery for Perthes Disease will probably tire more easily. It is not unusual for them to have significant blood loss during surgery, and it can take the body up to two months to build up red blood cells to the pre-operative level.

The child may also continue to experience pain intermittently and may require analgesia at times of discomfort. Each individual's pain requirements should be discussed with the child's parents.

It is also not unusual for children to experience frustration during the recovery period.

## ***Educational Considerations***

### **The Role of the Education Advisor at the Royal Children's Hospital.**

If a hospital admission is required, the child is referred to the Royal Children's Hospital Education Institute. On acceptance of the referral, the child is allocated an Education Advisor. The role of the Education Advisor is to support the continuity of educational opportunities for the child. This is achieved by maintaining connections with the school of origin through the establishment of a link with a key contact person at the school. Communication via phone, e-mail, fax and the use of innovative information and communication technologies is established to ensure the child is well connected with their teachers and peers.

The Education Advisor may contribute to and/or facilitate:

- the establishment of a school based support group;
- school based professional development training by the hospital's multi-disciplinary team;
- development of school based strategies for inclusion;



- provision of resource information packages sheets; and
- the establishment of links between the child and equipment resource locations.

### ***Outpatient Clinic***

Children with Perthes Disease are required to attend an outpatient clinic at varying intervals for review by the orthopaedic surgeons. The child's progress is assessed via medical review and x-rays. During this clinic, an Education Advisor is available to discuss schooling issues with the child and his or her family. These issues may include difficulty in keeping up with school work, readiness to return to school, need for supervision of an adult, peer or 'buddy', supervision/support of work load, peer issues, absenteeism and vocational guidance.

### ***Re-entry to School***

It is important to discuss with the family the best way to communicate information about the child's illness to school staff and peers while respecting issues of confidentiality.

When a child with Perthes Disease is at school, they may:

- not perform at optimal level and therefore need consideration for completion of tasks;
- experience increased rates of absenteeism due to follow up outpatients
- visits and treatment. have changed perceptions in self-esteem and body image;

- be anxious when returning to school after a period of absence and may require a gradual increase in daily activity;
- experience lack of concentration;
- lack confidence and need support;
- feel uncomfortable with other children and teachers asking questions about their condition and stage of treatment.
- fatigue more easily at school so may need a graduated return to school; and
- require medication to ease pain - this will need to be discussed with the family and school staff.

Remember to maintain communication channels with the family e.g. newsletter collection, school photo schedules and special days;

### ***Emotional Support***

Children with Perthes Disease are otherwise healthy but due to activity restrictions, they may feel frustrated and anxious about not being able to lead the same active lifestyle as their peers. Recovery is a long and slow process so understanding, reassurance and support is required for them to overcome these feelings.

### ***Useful Contact Numbers***

4 North Orthopaedic Ward      9345 5303  
Dept of Physiotherapy      9345 5411

Dept of Occupational Therapy      9345 5402  
RCH Education Institute      9322 5100