What is developmental dysplasia of the hips (ddh) or congenital dislocation of the hip (cdh)?

The normal hip is a major weight-bearing joint of the body. It is a ‘ball & socket’ type joint; the bone being the head of the femur (thighbone), which fits, into the socket, the cup shaped hollow of the pelvis, the acetabulum. In DDH (the new name for CDH) development of the hips is abnormal. In DDH the acetabulum may be shallow. Without this, the hip is said to be dislocated. Surgical treatment is required in DDH. DDH can be treated very successfully.

There are varying degrees of dislocation of the hip:

- **Unstable** – the head of the femur can be moved in and out of the acetabulum.
- **Subluxed** – the head of the femur is not completely in the acetabulum. It may be used for 2 to 6 weeks before surgical reduction and the acetabulum may be abnormal.
- **Dislocated** – the head of the femur lies completely out of joint. The shape and size of the acetabulum is abnormal.

What are the causes of developmental dislocation of the hip?
The number of children with DDH is unclear because most unstable hips stabilise in the first few weeks of life, but it is about 1 to 20 per 1000 live births. The incidence is higher in girls than boys. Hereditary factors may play a part in DDH. This may be an inherited characteristic of joint laxity or a shallow acetabulum. Where normal parents have an affected child there is a 1:25 chance that a subsequent child will be affected. An affected parent has a 1:25 chance of having an affected child and this is increased to a 1:10 chance for further children, (STEPS 1992). A factor in the incidence of DDH is the high circulation of hormones released into the mothers’ blood stream to prepare her body for labour, helping the ligaments of the pelvis to widen. This may cause the hip to be ‘lax’ at birth and to dislocate. Some researchers have highlighted a link between the way a young baby is carried as a cause of DDH, in North America, in the Indian and Eskimo populations the incidence is high. Here the babies are carried with their legs held in a straight position, whereas, in Africa, where babies are carried with their legs in a ‘frog’ position the incidence is much lower. (STEPS 1992). DDH can be associated with other congenital conditions such as ‘Spina Bifida’.

What is likely to happen in the future (the prognosis) for ddh?
The prognosis of the condition depends on the severity of the condition and when the dislocation is detected. If treatment is started early, when the hip is simply reduced in the first 6 months of life the prognosis is usually good. Where the condition is more severe and the acetabulum is shallow, treatment is likely to be more complex and prolonged, no matter when it started. The older the child is when treatment begins the less likely the outcome will be favourable, however this does not necessarily mean the child will be disabled or lead a restricted life.

What are the treatments for ddh?
Treatments vary widely but can be simplified into two groups, conservative and surgical.

**Conservative treatments**
The aim is to hold the legs in such a way that the femoral head fits snugly into the acetabulum. The constant pressure of the femoral head against the floor of the acetabulum helps mould it and this causes it to develop properly therefore stabilising the hip.

This can be done in various ways as follows:

- **Splints** – the Pavlik harness – the splint is applied without anaesthetic and is not removed initially except for examination at hospital visits. Splints are worn for varying lengths of time but it is likely to be months rather than weeks.
- **Traction** – this may be used when the severity of DDH is too much for splints or the splints have not worked. Traction overcomes the contractures of the soft tissues without undue force. It may be used for 2 to 6 weeks before surgical reduction and may be followed by a period in plaster. All traction methods use the same principle aiming to gradually reduce the hips by adjusting the traction. Often this treatment is carried out in hospital, with regular x-rays to monitor progress. Traction can be maintained at home provided the appropriate circumstances, facilities and support are available to the family.

**Types of traction more commonly used are:**
- The Jones traction frame – the Japanese frame – Alrick traction.
- Unstable traction
- Splints – the Pavlik harness
- Subluxed traction
- Dislocated traction

**Surgical treatment.**
Surgical treatments are used when other methods of reducing the hip have failed, the diagnosis is made late or the state of the deformity means the conservative methods are unlikely to work. The type of surgery depends on each individual case. Common procedures are as follows:

- **Investigative Arthrogram** – under general anaesthesia dye is placed into the hip joint and the hip can then be assessed and a treatment plan decided upon.
- **Double hip spica** – Broomstick plaster casts (see “what is a hip spica” leaflet).
- **Plaster spica cast** – following a reduction of the hip under a general anaesthetic a plaster is applied.
- **Open reduction** – following a reduction of the hip under general anaesthetic a plaster is applied. (This may be after time spent in splints or traction). The plaster may require renewal, again performed under an anaesthetic.
- **Femoral Osteotomy (rotational osteotomy)**
- **Acetabular surgery**
- **Useful contacts for information at Sheffield Children’s NHS Trust.**
- **Orthopaedic department** – Monday to Friday 9.00 am – 5.00pm, 0114 271 7000 and ask for your consultants secretary.  
- **Outpatient department** – Monday to Friday 9.00am to 5.00pm, 0114 271 7000 & ask for bleep 033
- **Ward S3** – out of office hours, 0114 271 7392 (especially if problems occur with the hip spica cast).
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