

Developmental Dysplasia of the Hip - Surgical Management

Information for patients from the Paediatric Orthopaedic Service

What does Developmental Dysplasia of the Hip (DDH) mean?

- Developmental** - This indicates that the condition occurs whilst the baby is developing.
Dysplasia - This indicates that the joint is immature or has not developed fully.
Hip - A ball (femoral head) and socket (acetabulum) joint at the top of the leg.

The condition can be mild, moderate or severe. Some hips are simply immature (the socket is usually shallow), others are unstable (the hip can slip out of joint easily), other hips may be fully dislocated (out of joint).

The condition is not painful in children but can lead to deformity, limp and pain in later life, if not treated.

How common is DDH?

Two babies in every 1000 live births will have DDH and it is seven times more common in girls. First-born children are also more at risk.

There is also evidence that it is more common if there is a family history of DDH, if the baby has been squashed inside the womb (oligohydramnios) or if the baby was breech (feet first or bottom first).

What is the treatment for DDH?

The treatment of DDH aims to put the ball in the socket (reduction) and keep it in place while the hip develops. This can be done in many ways and is dependent upon the age at presentation, severity of the DDH and the judgement of the Consultant for each individual child.

The treatments outlined below are only average guides, ages may vary dependent upon the growth of your child. Your child may need more or less treatment than average. In general terms, the younger the child is at the time of diagnosis, the less invasive the treatment and the better the outcome.



Surgical treatment of DDH

Three to six months of age - Closed reduction, Hip Spica Plaster

When your baby is diagnosed after three months of age, a rigid device will be required to hold their hip in the correct position. This device is a plaster known as a Hip Spica Plaster. The plaster holds the hip in a firm position. The plaster goes from approximately nipple level and down both legs to give a firm hold.



The plaster will be put on whilst your baby is under a general anaesthetic. This is for two reasons:

1. An injection of dye into the hip joint and an x-ray (arthrogram) is performed to ensure the hip joint is placed in the best position.
2. It is often necessary to perform a small cut to free the tendon in the groin (adductor tenotomy).

The Hip Spica is usually needed for 12 weeks to allow the hip to develop a secure (stable) hip. It is usually changed after six to eight weeks under a general anaesthetic to allow a further arthrogram and check of hip development.

Six to 18 months of age - Open reduction, Femoral Osteotomy

If your baby's hip remains unstable after a closed reduction or is diagnosed between six to 18 months of age, your consultant may suggest an open reduction and femoral osteotomy may be necessary. It consists of open surgery to the hip joint (open reduction) and a reshaping of the thigh bone (femoral osteotomy). It involves up to three operations under general anaesthetic.

- Operation one: An injection of dye into the hip joint and an x-ray (arthrogram) is taken initially to confirm if open surgery is needed. Surgery will then proceed with a cut in the groin to enable the surgeon to free all the tight structures that are stopping the ball fitting in the socket correctly. The best position for the ball in the socket is determined – this usually involves turning the leg inwards. At the end of surgery, a Hip Spica Plaster will be applied.
- Operation two: Six to eight weeks later. The Hip Spica Plaster is removed; a further arthrogram is performed to check the hip position is satisfactory. It is usually necessary to rotate the leg bone (femoral osteotomy) at this stage and this is held in place with metal pins and plate (external fixator). A further Hip Spica Plaster is applied.

- Operation three: 12 to 14 weeks later: The Hip Spica Plaster is removed; a further arthrogram is performed to check the hip position is satisfactory. The metal pins and plate are removed.

Over 18 months of age: Open reduction, Femoral Osteotomy, Pelvic Osteotomy

If your baby's hip remains unstable after a closed or open reduction or is diagnosed over 18 months of age, your consultant may suggest an open reduction, femoral osteotomy and pelvic osteotomy may be necessary. This involves a similar series of operations and plasters to those described above under six to 18 months with the addition of an operation to cut around the socket to reshape it (pelvic osteotomy). It is sometimes necessary to alter the order of these procedures, or in the rare late diagnosed child, to perform all procedures on the first day.

Caring for your child in a Hip Spica

Your child is going into a Hip Spica cast

Following surgery, whilst still under anaesthetic, a hip spica cast will be applied to ensure your child's hips/legs remain in the correct position to allow healing to take place. This type of cast is rather like a pair of high waisted plaster trousers. It will encase the abdomen and chest up to nipple line, the hips and pelvis and the legs, either both legs to ankles or the whole leg to ankle on the affected side and to above the knee on the other (1½ hip spica).



Although this sounds very restricting children generally adapt very quickly to being in plaster and find ways of managing to do things.

Nappy changing

There will be a cut out in the plaster around the nappy area to allow your child to go to the toilet. It is necessary to use two nappies to prevent leakage. You use one small nappy (usually low birth weight or new born sized) with the tapes cut off tucked inside the plaster. A larger nappy (at least a size bigger than you child was in prior to surgery) is then applied over the plaster to hold the small nappy in place. Parents have often reported that the paper backed nappies are less sweaty than plastic backed ones.

If the cut out is particularly small incontinence pads may be used. Nappies must be changed very frequently - two to three per hour, day and night, to prevent the plaster becoming wet and soiled. This is vitally important to prevent your child developing sores under the plaster and to stop the plaster from smelling. If the plaster does become wet, kitchen paper can be used to dry the inside of the plaster, or leave nappies off for short periods.

The ward can provide Sofban and Mefix tape that can be used to edge the plaster for comfort. Following discharge this can be provided by your GP on prescription.

Washing

Parents often use baby wipes as these do not soak the plaster, however you can use simple soap and water if the cloth used is not too wet.

You should ensure that you dry areas thoroughly to ensure that soreness doesn't develop in creases.

Cream should be used sparingly for any soreness that may develop. Talc should **not** be used as this can become trapped in the plaster causing more soreness.

Clothing

You will need clothing that is a size larger than usual to fit over the plaster. Dungarees with popper fastening and dresses are useful as these fit more easily.

Feeding

Your child can eat fairly normally, however they may prefer frequent smaller meals to prevent the plaster from feeling too tight. For smaller babies a car seat or bouncy chair may be useful to position your child for feeds. For older infants there are booster cushions, which can be easily bought. When feeding solids a large bib or towel draped over your child's chest is useful to prevent crumbs from falling inside the plaster, which could cause irritation. You need to increase your child's fluid intake to prevent constipation and ensure that urine is diluted to reduce the risk of getting sores under the plaster.

Playtime

Your child should be able to continue with most of the playtime activities they enjoy. Infants in hip spicas may like to spend time lying in their cot/on the floor with a baby gym/mobiles to play with. The uses of beanbags/bouncy chairs are helpful in positioning your child to allow them to play/watch television etc. With a suitable buggy/car seat you will be able to take your child out and about as normal. Encouraging visitors can be a good idea to help stimulate and occupy your child and also to give you some free time!!!

Positioning

Your child will need to be positioned very carefully to ensure they are comfortable, to prevent pressure sores and to prevent the plaster from being damaged. Various pieces of equipment may be utilised to assist you in positioning your child. Their position needs to be changed regularly to prevent your child developing pressure sores.

- Bean bags - Particularly useful and fairly inexpensive to purchase. The beans mould to the shape of your child's plaster meaning they are well supported and feel comfortable. Bean bags are useful for positioning your child for feeding and playtime.
- Bouncy chairs - Not all but most children in hip spicas are able to sit in bouncy chairs as their legs can sit over the sides of the chair. These again are useful for feeding and playtime.

- Pillows/cushions - Extra pillows can be utilised to support your child's plaster to ensure their comfort. They can be used under their legs whilst laying on their backs, under their tummy, pelvis, and legs whilst on their tummy, to raise them to fit into a car seat/feeding chair, and many more ways that you will find suit your child.

Transport

- Car seats - We are unable to provide car seats for younger children, but we can advise on the most appropriate design style. See pictures below. The other option is to contact the charity STEPS as they are able to advise on car seat hire or offer grants to help you purchase a suitable car seat.



This seat has high sides or arms. This will not allow your child to sit back into the seat whilst in a hip spica.



These two seats have low arms and will allow your child to sit back into the seat safely whilst in a hip spica.



- Buggies - Most children will fit into their present buggy with the help of cushions or pillows. However if your child is over two years of age they may be too large for your present buggy following surgery. If this is the case we will be able to order you a larger buggy called a “Major Buggy” at your pre admission clinic appointment.

Moving your child

Always wait until you have been shown how to move your child before attempting to do so on your own. You will be shown by one of the nursing staff or the physiotherapist.

However here are the most important things to remember.

- When moving your child you will need to slide one arm under their shoulders and the other arm between their legs and up the back of the plaster.
- You then need to hold them as close as possible against your chest with them facing you.
- **Always remember** to keep your back as straight as possible and bend your knees instead of leaning forwards.
- If in doubt **ask**, we may have advise on equipment that can help you.

Useful contacts

Consultant - Mr Cornell
Queen Elizabeth the Queen Mother Hospital
Ramsgate Road, Margate, Kent
Telephone: 01843 225544 extension 62860

Physiotherapists - Jenny Seggie / Suzanne Gray
Telephone: 01233 616618
E-mail: jenny.seggie@nhs.net or suzanne.gray2@nhs.net

Nursing staff
Rainbow Ward - Queen Elizabeth the Queen Mother Hospital
Ramsgate Road, Margate, Kent
Telephone: 01843 225544 extension 62269

Steps - Association for people with lower limb abnormalities - can help with obtaining equipment if surgery is required.

Lymm Court
11 Eagle Brow
Lymm, Cheshire WA13 OLP
Telephone: 0871 7170044
E-mail: info@steps-charity.org.uk
Web site: www.steps-charity.org.uk

In car safety centre- Can offer advice on suitable car seats to accommodate children in hip spica plasters after surgery. They can also offer a hire service in some cases.
Telephone: 01908 220909

This leaflet has been produced with and for patients