



A Patient's guide to

# Pavlik Harness Treatment for Developmental Dysplasia of the Hip (DDH)

## What is Developmental Dysplasia of the Hip (DDH)?

DDH is a problem with hip joint development in babies. It is usually present from birth. When DDH is diagnosed and treated early, a good outcome is expected. The condition affects 1-2 in 1000 new-born babies and can affect one or both hips. The hip is a 'ball and socket' joint. In a normal hip, the top of the thighbone (femur) is a smooth round ball shape which fits into a cup like socket on the pelvis (acetabulum).

For babies diagnosed with DDH, the acetabulum is usually shallow and there is a loss of contact with the head of the femur. In the mildest form, there is some contact between them. In the more severe forms, the femoral head, or ball, may be displaced completely out of the socket and be dislocated. This is a painless condition for your baby. The treatment aims to establish contact between the ball and socket joint to encourage normal growth and development of the hip.

## Why does this happen?

As parents, it is important to understand that your child's hips developed this way on their own. DDH can not be prevented and is not anyone's fault.

There are various risk factors associated with the incidence of DDH which include:

- A family history of hip problems
- Breech presentation in last 3 months of pregnancy
- Girls are often more affected than boys, particularly the first born
- Oligohydramniotic (lack of amniotic fluid) during pregnancy

## How is the diagnosis made?

A combination of clinical examination and ultrasound scan are used to make a diagnosis. An ultrasound image of your baby hips will be measured to assess the position of the femoral head and the shape of the acetabulum.

Ultrasound scanning is a painless procedure, similar to pregnancy scans, and you will be able to remain with your baby whilst they are having the scan done. Ultrasound is useful under the age of 6 months as the hip joint has not yet developed into bone.

## DDH treatment options

Once your baby has been diagnosed with DDH, treatment will be offered. Babies under 4 months are treated with a Pavlik Harness. The goal of treatment is to maintain the hip joint in close contact to encourage normal hip development.

### What is a Pavlik harness?

A Pavlik harness is a soft fabric splint consisting of a chest band with shoulder straps, connecting leg straps and cotton booties. The harness allows some movement in the legs, directing the hip joint into a position where it can develop more normally. It can be worn next to baby's skin or over a vest as advised by your clinician.



## How long will my baby wear the Pavlik harness?

The length of treatment may vary depending on your baby's hip joint development. The Paediatric Orthopaedic team monitor the hip joint development through a combination of clinical examination and ultrasound scans. The scans are carried out every 2-3 weeks. In total the treatment generally lasts from 6 to 12 weeks.

The harness may need adjusting, to allow for your baby's growth and as the hips settle into the correct position. This will be done by a member of the team during one of your clinic appointments.

During the initial weeks your baby is in harness it is advised that the harness is not removed, unless a member of team advises otherwise. After this period of time you will be shown how to remove the harness and reapply; enabling you to bath your baby at home and enjoy time with your baby out of the harness. The position of the leg straps will be marked or taped to ensure their position is not altered.

When your baby is out of harness for bath time, it is important that you check the condition of their skin. Look for any areas of redness that may have been caused by the harness chafing the skin. If you note any areas of soreness please contact the team who will be able to give you advice on how best to treat this.

## How often will my baby attend clinics?

Once the Pavlik harness has been applied your baby will be seen every one to two weeks in the clinic to check the harness fits well, and ultrasound scans will be made to monitor improvement in hip development. The harness will need to be adjusted regularly as your baby grows and skin condition will also be checked.

## What is the prognosis/outcome?

Most children who are diagnosed early and treated (before the age of 4 months) using a Pavlik harness will go on to have normal hip development. They should reach their developmental milestones at the appropriate time and walk independently between 9 and 18 months of age. Once your child is out of the harness, they will continue to be reviewed, with clinical examination and X-rays, as they continue to grow and their hips develop.

## What are the potential risk factors?

There are risk factors associated with this treatment that you should be made aware of:

- **Potential irritation to skin** - the harness may cause areas of soreness to the skin, particularly in the creases behind the knee and in the groin. There are ways to help with preventing this, such as regular checking of the skin around the harness. Additionally, vest tops or baby gros can be placed under the harness to prevent rubbing.
- **Nerve injury** - depending on the severity of the DDH there is a risk of a femoral nerve palsy developing whilst your baby is in treatment with a Pavlik Harness. Due to this, we ask you to be extra vigilant and assess that your baby is kicking both of their legs frequently. If your baby stops kicking please contact us urgently, contact details can be found on page 12 of this booklet. If it is out of hours or over a weekend please contact your local GP or attend A&E.
- **Failure of the splint to work** - your baby's hip progress will be reviewed and discussed at each appointment. If the team feel the hips are not developing with the Pavlik Harness treatment they will stop the treatment and remove the harness. At this point future treatment options will be discussed with you, which include surgery. Each case is treated on an individual basis.
- **Avascular necrosis** - cellular death of bone components due to an interruption in blood supply to the femoral head. The incidence of this occurring is low.

## Caring for your baby in the Pavlik harness

After the harness is applied your baby may be unsettled for the first few days. This is normal and due to your baby becoming used to the restrictive nature of the harness. Most babies settle and are comfortable for the duration of their treatment. If your baby fails to settle after 3 days, you will need to make contact with the team at RNOH.

Your baby can be weighed at the hospital during clinic visits and the weight recorded in the red book. The weight of the harness varies a little depending on size. A small Pavlik harness weights approximately 125g.

## Clothing

There are many suitable clothes available and as long as the hip movement is not restricted by tight clothing you should have no problems. You may find using a larger size of clothing easier to fit over the harness and these will be useful as your baby gets bigger. Try and avoid clothes with tight waists as these may restrict leg movement.

Vest extenders are extra lengths of material with poppers which attach to a baby's vest to allow more leg room. They are available to buy online and will fit most bodysuits.



## Sleeping

Baby sleeping bags are suitable for use overnight, as long as there is enough room to ensure the hips remain in position and it does not restrict leg movement.

Please do not swaddle your baby's legs tightly at night as this will make the Pavlik harness treatment less effective. Cocoon style pillows are only suitable if the legs are not raised on the sides.

A normal size cot will easily accommodate your baby in the harness, however if you are using a Moses basket or bassinet on a pram this maybe too narrow.

## Caring for the harness

It can be difficult to keep the harness clean. Always make sure the nappy is fastened under the straps of the harness and lift your baby under their thighs during nappy changes rather than pulling their legs upwards. Use a baby wipe or damp cloth to spot clean the harness. Extra bibs whilst feeding are helpful to prevent milk getting onto the straps and covering the foot section during nappy changes will stop the harness getting soiled.

Once you have been advised to remove the harness for baths at home you can wash it at a low temperature (30 degrees or less) with a slow spin using a mild detergent and leave to dry. Putting the harness inside a net bag or pillow case will prevent the Velcro straps from tangling together. Do not tumble dry.

## Car Seat

You should be able to continue to use your current car seat with your baby in a Pavlik harness. You may need to use a folded blanket or towel in the base to raise the baby's bottom and extend the straps to accommodate the baby safely. We suggest the baby is not left in the car seat for prolonged periods as the position is not good for the hips.

## What happens after the harness is removed following successful treatment

Once the harness is removed your baby may take a few days to adjust to life without the harness, sleeping patterns may also be disrupted. You may notice that your baby continues to hold their legs in the frog-leg position for a short period; this is normal and nothing to be concerned about. Enjoy activities such as swimming or baby massage with your baby.

## Further Information

### **STEPS-Charity**

[www.steps-charity.org.uk](http://www.steps-charity.org.uk)

**Telephone:** 01925 750275

### **International Hip Dysplasia Institute**

[www.hipdysplasia.org](http://www.hipdysplasia.org)

## Between appointments please **DO** contact your hospital if:

- Your baby has reduced leg movement
- You feel your baby has grown and the Pavlik harness is too tight
- If your baby has persistent red marks around the shoulders or chest strap.

## Contact Details

### **RNOH Switchboard**

**Telephone:** 020 3947 0100

### **Baby Hip Clinic Team**

**Telephone:** 0208 909 5409

**Email:** rnoh.babyhip@nhs.net

Patient Name: \_\_\_\_\_

Consultant: \_\_\_\_\_

Hospital Number \_\_\_\_\_

DDH: Left / Right / Bilateral (please circle accordingly)

Pavlik Harness Applied: \_\_\_\_\_

## References

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Walton MJ, Isaacson Z, McMillan D, Hawkes R, Atherton WG (2010) The success of management with the Pavlik harness for developmental dysplasia of the hip using a United Kingdom screening programme and ultrasound-guided supervision. *The Journal of Bone and Joint Surgery [Br]* 92-B:1013-16.

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If you have any comments about this leaflet or would like it translated into another language/large print, please contact the Clinical Governance Department on 020 8909 5439/5717.

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