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## Paediatric Orthopaedics

# Developmental dysplasia of the hip (DDH) & management with a Pavlik harness

### What is DDH?

DDH is a spectrum of abnormal hip development from mild underdevelopment of the hip through to hip dislocation. This is usually present from birth (congenital) but can also develop during infancy or childhood. It consists of two components:

- The depth of the socket (acetabulum)
- The position of the ball part of the thigh bone (femoral head) within the socket.

### What causes DDH?

DDH can be a result of many different factors including family history, the position of the baby in the womb (for example breech) and first-born child.

### How will I know if my baby has DDH?

When your baby is born, the doctor or midwife will routinely check your baby's hips and if they feel any instability, your baby will be referred for a hip ultrasound. The hips will be assessed again by your GP when your baby is around six weeks old. If your baby has a risk factor for DDH, they will be referred for a hip ultrasound even if they have stable hips on examination. Risk factors are: family history of hip dysplasia, breech presentation after 36 weeks, breech birth, oligohydramnios (low fluid levels in the womb), or multiple birth.

### What happens if my baby is diagnosed with DDH on ultrasound?

You will receive a referral to our Consultant Paediatric Orthopaedic Surgeon who will assess your baby's hips and review the ultrasound scan. If it is felt that the hips need to be treated, it is likely that the consultant will discuss using a Pavlik harness with you. This will help the baby's hips to develop in the most normal way.

### What is a Pavlik harness?

A Pavlik harness is a soft fabric harness which allows the baby to move his or her legs around but will stop them moving the hip in and out of the socket. It has a chest strap, two shoulder straps and four leg straps that attach to little 'booties'. This can be applied directly to the skin or over clothes.



**Flora**

Kind permission from parent



**Lily**

Kind permission from parent

### **How does the Pavlik harness work?**

The goal of the harness is to keep the ball of the hip joint pointed towards the socket while the baby moves his or her legs. The baby will be encouraged to rest into a position where the hips are bent (flexed) and held out to the side (abduction).

### **Will I have to care for my baby in a different way?**

When the harness is first put on, the length of the straps will only be altered by a member of the orthopaedic team, who will mark the straps with a pen. Parents can loosen the chest strap for feeding, but straps have to be returned to the position marked by the orthopaedic team.

Loose clothing needs to be worn around the harness and we suggest you hold your baby with their legs apart (as they are in the harness) to prevent the legs from coming together. Some babies are in a harness for 23 hours a day and the harness can be removed for bathing. Other babies need to wear their harness for 24 hours a day. The harness is then removed in clinic and the baby can be then be bathed and weighed. The orthopaedic team will advise which protocol is best for your baby.

Initially, removing the harness (for example for bathing) is not advised, especially if the hip is unstable. Therefore parents will need to give regular top to toe washes around the harness. If fluids such as poo get onto the harness you will need to clean it off the best you can with baby wipes. If your baby grows or the harness is very dirty, it will be replaced in clinic.

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## **How long will my baby have to wear the harness?**

This will depend on the severity of your baby's hip condition. As a general rule, it is likely they will have to wear the harness full time for six to eight weeks. Your baby may then be able to have one hour out of the harness each day when they can have a bath and time to kick their legs around. Most children will be treated with a harness for between six weeks and four months.

## **How will I know if the harness is working?**

You will have regular appointments with the consultant and the team where the harness will be checked to ensure that it is fitting correctly and is providing the correct support. The regularity of these appointments will be dependent on the severity of the hip dysplasia. Initially it is likely that you will have weekly or fortnightly appointments with the team including regular hip ultrasounds so that we can check how the hips are developing.

## **What happens if the hips do not correct with the harness?**

The consultant will discuss your baby's progress at each appointment. If they feel that the hips are not developing in the normal way even with the Pavlik harness, they will discuss the future treatment options and the harness treatment will be stopped. Each baby is different.

## **Can the harness harm my baby?**

Pavlik harness treatment is the safest of the various treatments for DDH. However, in rare cases, there is a chance of temporary femoral nerve injury when the leg does not kick actively. This can be corrected by changing the position of the baby's legs in the harness and the orthopaedic team will be assessing for this. If the chest strap presses in the armpit, this can cause temporary damage to the nerves to the arms. It is important that there is a gap of two finger breadths between the chest strap and the armpits.

There have been occasional historical cases of avascular necrosis (loss of blood supply to the ball of the hip joint) and damage to the socket. We think this is because the harness was previously used for older babies and for longer than we use them for now. It is important to observe your baby regularly and make contact with the team if your baby stops kicking / moving their legs / feet. If it is a weekend please remove the harness and make contact with the team in working hours.

## **It is important to contact the hospital if:**

- The baby's feet are constantly slipping out of the booties
- You feel the baby has grown and the harness is too tight
- If the baby has persistent red marks around any of the straps.
- If your baby is not kicking their feet / legs or not moving their arms normally.

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### Useful contact numbers:

- The consultant surgeon's secretary: Tel: 01223 216101
- Clinical Nurse Specialists: Email: [paedorthonurses@addenbrookes.nhs.uk](mailto:paedorthonurses@addenbrookes.nhs.uk)  
Tel: 01223 254996.

### National Support Group:

STEPS - The National Association for Children with Lower Limb Abnormalities,  
[www.stepsworldwide.org](http://www.stepsworldwide.org) They also have a Facebook page. **01925 750271.**

### Useful websites:

- <http://ddh-uk.org/> DDH UK - because hips matter.
- <https://imahippy.org> Canadian support group for children with hip dysplasia.
- My Hippy Baby UK & Ireland (Hip Dysplasia) - Facebook Group.

### Books:

- Cast life: A parent guide to DDH, Developmental dysplasia of the hip explained by Natalie Trice.
- The Parents' guide to hip dysplasia by Betsy Miller.
- Hope: The 'Hip' hippo by Gina Jay & Julie Beattie.



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