

## APPLICATION OF PAVLIK HARNESS GUIDELINES

### REFERRAL INSTRUCTIONS

Harness should be fitted by an orthotist or physiotherapist.

1. Harness is fitted within 5 days of diagnosis by medical referral
2. Parent must consent to application of Pavlik Harness prior to fitting and be present.
3. NICU: caring nurse should be present  
Maternity Ward: parent/guardian and ideally nurse should be present  
DDH Clinic: parent/guardian should be present
4. The correct sizing of the Pavlik Harness is based on the following chest circumferences<sup>1</sup>

Size	Chest Circumference
Extra small	12" – 14" (30.5 – 35.6 cm)
Small	14" – 16" (35.6 – 40.6 cm)
Medium	16" – 18" (40.6 – 45.7 cm)
Large	18" – 21" (45.7 cm – 53.4 cm)

### INFECTION CONTROL

Wash hands before and after attending the baby. Each Pavlik harness is for single patient use only.

### ID BANDS

For inpatient babies with ID bands attached to lower limbs, ID bands must be removed before the harness is fitted. A new ID band/s must be placed on the upper limb/s by the caring nurse, as per the RNSH ID protocol.

### APPLICATION OF PAVLIK HARNESS

The Pavlik harness is fitted to the baby in the following manner:

- Baby is laid supine on the harness with clothing removed and nappy in situ
- Shoulder and chest straps are adjusted first and then velcroed into position
- Shoulder straps are positioned to maintain chest straps at nipple line
- The feet are placed in the stirrups one at a time and leg straps are adjusted (checking that the ID band has been removed) and velcroed into position.
- The **anterior strap** limits the angle of hip flexion. . Hold the hip at 90 degrees hip flexion and then adjust the anterior strap. Research suggests the hip should be held between 90 – 120 degrees<sup>3,4</sup>. The safest zone for hip flexion is considered to be 90 to 110 degrees<sup>2</sup>. An increased risk of transient femoral nerve palsy and inferior dislocation of the hip have been reported with hip

flexion greater than 120 degrees<sup>5</sup>. It is recommended to position the hip at 90 degrees as growth of the baby between appointments will cause the hip flexion angle to increase.

- The **lateral strap** limits adduction. Hold the hip at 40 degrees hip abduction and then adjust the lateral strap. Research suggests the hip abduction safe zone lies between 40 – 60 degrees<sup>6</sup>. Excessive or forced hip abduction is associated with an increased risk of avascular necrosis<sup>7</sup>. It is recommended to position the hip at 40 -60 degrees so the knees remain a minimum of 3-5cm apart. The strap should not force the hips into an abducted position.
- There should be room for growth across the chest strap and leg straps. To test this, two fingers should be able to be comfortably inserted underneath the chest trap (ie horizontal strap around the chest) and one finger space underneath the leg straps (ie horizontal straps around the calves).
- Once the harness has been fitted, then clothing may be replaced over the harness. Loose fitting clothing 2 sizes larger, without an elasticised waist is recommended. This will prevent midline contact of the knees or pressure on the harness straps.

### **PARENT EDUCATION**

1. Care instructions are given to the parent including the following points

- The harness must stay on 24/24 until otherwise instructed by the Orthopaedic Consultant.<sup>2</sup>
- The baby can only be bathed with a wet cloth. Care should be taken to clean around the posterior aspect of the knees and the groin where skin can be rubbed by the harness and under the shoulder straps particularly in babies who have frequent vomiting/possetting.
- Parents are to observe for areas of rub and to contact the physiotherapist / orthotist if there are areas of irritation
- The physiotherapist provides instructions on developmental care including how to prevent skull shape deformities, instructions to avoid “tummy” time which may increase hip dislocation risk, and instructions on how to carry baby.
- The hip position can only be adjusted by the consultant/orthotist/physiotherapist. The parents may make minor adjustments to the chest strap to allow for growth.

2. The Pavlik Harness Care pamphlet is given to the parents

### **FOLLOW UP**

- Check that the parents have a follow-up appointment with the Consultant
- Check that the parents have contact details for the orthotist/physiotherapist
- An orthotic/physiotherapy appointment should be arranged one week after the initial fitting and fortnightly thereafter.
- All follow -up appointments are arranged in the dedicated DDH clinic.

## **REFERENCES**

1. Orthopaedic Appliances Pty, Ltd (OAPL) Catalogue, Orthopaedic and Bracing Catalogue, "Mighty Tykes", page 104 Available at <http://www.oapl.com.au/Orthopaedic&Bracing-Catalogue-Web.pdf>. Accessed 12/05/2010
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5. Weinstein, S. L., Mubarak, S. J., & Wenger, D. R. (2003). Developmental hip dysplasia and dislocation: part two. *The Journal of Bone and Joint Surgery*, 85-A(10), 2024-2035.
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7. Suzuki, S., Kashiwagi, N., Kasahara, Y., Seto, Y., & Futami, T. (1996). Avascular necrosis and the Pavlik harness. The incidence of avascular necrosis in three types of congenital dislocation of the hip as classified by ultrasound. *The Journal of Bone and Joint Surgery*, 78-B(4), 631-635.