Developmental dysplasia of the hip (DDH) is a condition that affects the formation of the hip joint of babies and young children.

The hip is a ‘ball and socket’ type joint, formed by the round head of the femur with the cup shaped socket (acetabulum) in the pelvis (Figure 1). In DDH, the acetabulum and/or femoral head fail to develop normally.

The initial treatment for DDH for babies under 6 months involves the use of a brace which holds the legs apart and the hips flexed in a ‘frog-leg’ position. Two commonly used braces are the Pavlick Harness and Dennis-Browne (DB) brace (Figure 2).

The brace maintains the proper position of the femoral head, allows for ‘tightening up’ of the ligamentous structures and stimulates normal formation of the acetabulum (hip socket).

During the first 6 weeks of an infant’s life, the acetabulum models more easily. Early treatment takes advantage of the hip’s ability to remodel and form properly. Most babies will require the use of a brace for 12 weeks, however the ability of the acetabulum to reshape and correct itself slows with age. Older babies may need to wear the brace for longer periods of time.

The brace needs to be reviewed on a regular basis and adjusted as the infant grows. It is not painful or uncomfortable to wear the brace and most babies are not distressed by its use. Some babies may experience skin chafing and/or rash. The brace is worn fulltime until the hip is stable and X-rays or ultrasound examinations of the hip/s show significant improvement. The baby is then weaned out of the brace, usually over a 6-week period.

Complications of brace treatment may include avascular necrosis of femoral head. This is where the blood supply to the femoral head is interrupted, affecting development and growth of the hip. This may not be evident until the child is older, hence the need for ongoing and careful follow-up by an Orthopaedic Surgeon.

Figure 1. Normal hip anatomy (left) and DDH (right) – 1. cup shaped socket (acetabulum); 2. femoral head; 3. femur (upper leg bone); 4. joint with DDH.

Figure 2. Dennis-Browne (DB) brace (top) and Pavlick harness (below).