

# Clinical Guideline

## Neonatal Hip Screening and Management of Developmental Dysplasia of the Hip

**Policy developed by: SA Maternal, Neonatal & Gynaecology Community of Practice**

**Approved SA Health Safety & Quality Strategic Governance Committee on: 20 June 2017**

**Next review due: June 2020**

**Summary** The purpose of this guideline is to give clinicians information on the causes of, screening for and management of Neonatal Developmental Dysplasia of the Hip.

**Keywords** Neonatal hip screening and management of developmental dysplasia of the hip, perinatal practice guideline, clinical guideline, hip dysplasia, developmental dysplasia of the hip, neonatal hip screening, DDH, Ortolani test, Barlow test, hip splinting, dislocatable hips, subluxable hips

**Policy history** Is this a new policy? **N**  
Does this policy amend or update an existing policy? **Y v1.0**  
Does this policy replace an existing policy? **N**  
If so, which policies?

**Applies to** All SA Health Portfolio  
All Department for Health and Ageing Divisions  
All Health Networks  
CALHN, SALHN, NALHN, CHSALHN, WCHN, SAAS

**Staff impact** All Staff, Management, Admin, Students, Volunteers  
All Clinical, Medical, Midwifery, Nursing, Allied Health, Emergency, Mental Health, Pathology

**PDS reference** CG263

### Version control and change history

Version	Date from	Date to	Amendment
1.0	Mar 2010	June 2017	Original version
2.0	20 June 2017	Current	Reviewed

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# South Australian Perinatal Practice Guidelines

# Neonatal Hip Screening and Management of Developmental Dysplasia of the Hip

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## Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

## Explanation of the aboriginal artwork:

The aboriginal artwork used symbolises the connection to country and the circle shape shows the strong relationships amongst families and the aboriginal culture. The horse shoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horse shoe shape depicts a pregnant woman. The smaller horse shoe shape in this instance represents the unborn child. The artwork shown before the specific statements within the document symbolises a footprint and demonstrates the need to move forward together in unison.



***Australian Aboriginal Culture is the oldest living culture in the world yet Aboriginal people continue to experience the poorest health outcomes when compared to non-Aboriginal Australians. In South Australia, Aboriginal women are 2-5 times more likely to die in childbirth and their babies are 2-3 times more likely to be of low birth weight. The accumulative effects of stress, low socio economic status, exposure to violence, historical trauma, culturally unsafe and discriminatory health services and health systems are all major contributors to the disparities in Aboriginal maternal and birthing outcomes. Despite these unacceptable statistics the birth of an Aboriginal baby is a celebration of life and an important cultural event bringing family together in celebration, obligation and responsibility. The diversity between Aboriginal cultures, language and practices differ greatly and so it is imperative that Perinatal services prepare to respectively manage Aboriginal protocol and provide a culturally positive health care experience for Aboriginal people to ensure the best maternal, neonatal and child health outcomes.***

## Purpose and Scope of PPG

The purpose of this guideline is to give clinicians information on the causes of, screening for and management of Neonatal Developmental Dysplasia of the Hip.

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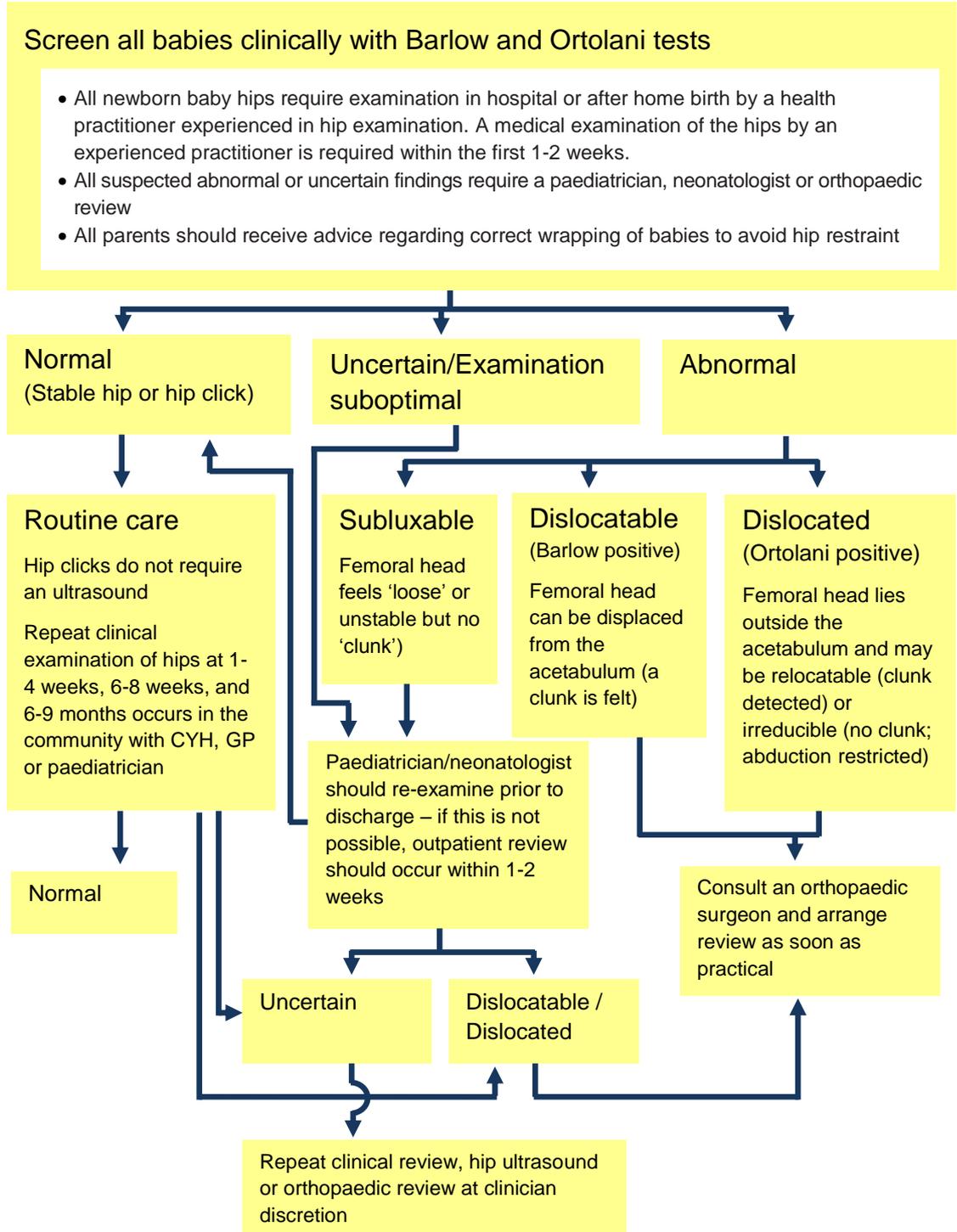
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# Neonatal Hip Screening and Management of Developmental Dysplasia of the Hip

## Flowchart: Developmental Dysplasia of the Hip – Screening and Management



- Ultrasound is not recommended for screening in DDH because of insufficient evidence of benefit in preventing late diagnosis of DDH
- Clinicians may elect to perform a hip ultrasound in selected cases between 6-12 weeks where examination findings are uncertain / follow-up unreliable
- Mild DDH on ultrasound where the hip examination is normal can be followed with serial ultrasounds at 6 weekly intervals provided the dysplasia is improving. Orthopaedic advice may be preferred.
- All suspect hips require an orthopaedic review before 4 months of age

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## Summary of Practice Recommendations

- All babies should be screened at birth for Developmental Dysplasia of the Hip
- Careful clinical examination is the most effective screening method
- Serial hip examinations are also required at every well-baby check
- Universal and targeted ultrasound screening are not recommended
- Treatment with a Pavlik harness or Denis-Browne splint is effective and safe
- All parents should be educated on the importance of avoiding swaddling legs in an extended and adducted posture and of allowing free movement of the legs

## Abbreviations

DDH	Developmental Dysplasia of the Hip
GP	General Practitioner
CaFHS	Child and Family Health Service

## Definitions

Developmental dysplasia of the hip (DDH)	A condition where there is inadequate formation of the acetabulum resulting in an abnormal relationship between the femoral head and acetabulum. Varying degrees of clinical instability of the hip joint result, ranging from a feeling of looseness of the joint to frank dislocation. Is also applied to a range of ultrasound and radiographic abnormalities of the acetabulum.
Clinically unstable hips	Can be classified as subluxatable, dislocatable, dislocated and reducible, or dislocated and irreducible DDH.
Developmental	Emphasises that DDH can evolve post-delivery in early infancy and is not always detectable at birth.

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## Incidence and Risk Factors

The incidence of DDH is approximately 1 in 100 live births screened clinically, and up to 8 in 100 infants screened by ultrasound.<sup>1,2</sup>

DDH is more frequent in females, with breech presentation in either sex, and where a baby has a first-degree relative with DDH.<sup>1,2</sup> Fixed foot deformities, first born child and oligohydramnios are other risk factors.

In 60% of infants with DDH the risk factors noted above are absent.<sup>2</sup>

A study of risk factors for late diagnosed DDH (diagnosed beyond 3 months of age) in South Australia shows that breech presentation is a protective factor against late diagnosis.<sup>3</sup> This may be due to increased scrutiny of breech babies, earlier diagnosis and preventative treatment.

Birth in a rural hospital and second born child are independent risk factors for late DDH diagnosis indicating the importance of clinical screening of all babies and the recognition that most DDH occurs without the classically described risk factors.

## Screening

All babies at birth need to be screened for DDH. The aim is early detection and treatment with an abduction splint within the first 6-8 weeks after birth. This is to avoid later surgical treatment and long term morbidities related to hip osteoarthritis.<sup>2</sup>

Clinical examination is the mainstay of screening for DDH.<sup>1,2,3</sup> Careful examination is required in the neonatal period using the Ortolani and Barlow manoeuvres, and assessment for full abduction.

Serial hip examinations are also required at every well-baby check.

Above 3 months of age the Ortolani and Barlow tests are less reliable, however reduced hip abduction, leg length discrepancy and asymmetry of buttock and leg creases can indicate DDH.

The role of ultrasound screening is uncertain based on current evidence.<sup>4</sup> Ultrasound has a high sensitivity for DDH, but also a high false positive rate in the first 6 weeks after birth. Inter-observer variability is problematic with inexperienced operators and inconsistent protocols for image acquisition and interpretation. Both universal ultrasound screening (all babies) and targeted ultrasound screening (babies with risk factors) increase the rate of treatment of DDH using splinting.<sup>1,2,4</sup> Neither strategy has been shown to reduce late diagnosed DDH.<sup>2,3,4,5</sup> However, studies of ultrasound screening are underpowered to show differences in late diagnosed DDH especially in subgroups with risk factors.<sup>4</sup>

In South Australia, the incidence of late diagnosed DDH has increased from 0.22/1000 (3.5% of all DDH cases) in 1998-2003, to 0.77/1000 2003-2009 using current screening practices.<sup>3</sup> An increase in late DDH has been noted in Australia generally despite widespread targeted ultrasound screening in some states.<sup>3</sup>

Universal and targeted ultrasound screening are therefore not considered cost effective and are not recommended.<sup>1,2,4</sup> Ultrasound may have a role where examination findings are uncertain or clinical follow-up is unreliable. Where an ultrasound is performed this should generally be left for 6 weeks after birth to reduce false positive results.

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## Treatment

Treatment of DDH with a Pavlik harness or Denis-Browne splint is effective and safe but requires close supervision by an orthopaedic surgeon and experienced physiotherapist to ensure the hip remains enlocated and developing in a satisfactory manner.

Splinting also has a defined morbidity, the main concern being avascular necrosis of the hip, which is estimated at about 2.5/1,000 treated infants with a splint applied before age 2 months.

Late diagnosis of DDH at or after 3 months of age requires more invasive treatment including surgery.

## Education

Continuing education regarding clinical examination of hips is an important responsibility of teaching hospitals.

All parents should also be educated on the importance of avoiding swaddling legs in an extended and adducted posture and of allowing free movement of the legs.

# Neonatal Hip Screening and Management of Developmental Dysplasia of the Hip

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# Neonatal Hip Screening and Management of Developmental Dysplasia of the Hip

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