

Objective

The objective of this document is to help general practitioners, paediatricians, neonatologists, maternal and infant protection doctors, orthopaedic surgeons, radiologists, obstetricians and gynaecologists, midwives, pediatric nurses, physiotherapists and osteopaths in the early detection of developmental dysplasia of the hip (DDH), in order to establish a much simpler treatment for the child.

Preamble

- DDH is an abnormal development of the hip which is manifested in an **instability** of the hip, i.e., an abnormal mobility between the pelvis and the femur. The femoral head comes out (or may come out) fully or partially of the acetabular cavity, while a normal hip is stable.
- There are several variants of DDH, from the clear form to the most discreet: dislocated hip, dislocatable hip, subluxation. Dislocated hips are about four times less common than dislocatable hips.
- After delivery, the lifting of obstetric constraints almost always allows spontaneous remodelling, stabilization and healing. However, uncorrected DDH results in a limp from when the child starts walking, chronic pain and early degenerative disorder.
- Treatment of DDH is simpler and more effective when it is diagnosed early.
- In France, the rate of DDH is estimated at 6 per 1000 births, with a strong female predominance, and the rate of late diagnosis of DDH (after age 1 year) was 8.4 per 100,000 in 2010.

Key messages

- There is a benefit in diagnosing DDH as soon as possible, preferably before the end of the first month, if not before 3 months of age. Treatment is then more effective, less burdensome and less expensive.
 - The diagnosis of DDH is based primarily on clinical examination, which is vital and mandatory and which must be repeated during each routine exam of the newborn and infant until the child begins walking. In case of an abnormal clinical examination (limited abduction, instability), an ultrasound should be done promptly.
 - Additional examinations to carry out as part of the screening:
 - radiography no longer has a role in DDH screening up to 3 months of age;
 - ultrasound in external coronal plane with measurement of the acetabular depth is indicated in the following cases:
 - existence of clinical signs (ultrasound to be performed promptly);
 - risk factors, in particular:
 - » breech presentation,
 - » first-degree family history,
 - » other orthopaedic abnormalities, especially elements of postural syndrome.
- This ultrasound must be done at age 1 month.

Clinical exam of the hip

Clinical examination conditions

Clinical screening for DDH is part of the required newborn examination. It is difficult and requires attention and experience. **It must be done at each routine examination until walking age** because its result can vary over time.

It must be done under good conditions: child relaxed (if necessary, stimulate the sucking reflex), undressed (no nappy) on a hard surface, using the intergluteal cleft as a reference, which must remain vertical during the examination.

The clinical signs¹

→ Inspection:

- shortening of the thigh;
- asymmetry of skin folds.

→ Limitation in abduction:

The abduction test is essential because it is very important for guidance and is all the more important when the child has grown up. Even if it does not explicitly indicate dysplasia, it is **a reliable warning sign and very simple to detect**. The elements checked for are:

- an abduction asymmetry;
- or a limitation in its range, which can involve:
 - the *stretch reflex* (testing the tone of the adductors), reference for adductor hypertonia,
 - or the maximum range of abduction by contraction of the adductors (angle < 60°).

The limitation in abduction demonstrates either a dislocated hip or a simple contraction of the adductors that can occur in the context of a congenital asymmetrical pelvis, with contracted contralateral abductors.

→ Instability:

Direct signs reflect the instability of the hip. They demonstrate the ability of the femoral head to come out of and/or go into the acetabulum. The pathognomonic sign of instability of the hip is a jerk, and its less clear form is the pistoning. The jerk is a tactile sensation that is felt and sometimes seen by the examiner when the femoral head crosses the acetabular rim. If the acetabular dysplasia is significant, the jerk will be less clear and it will feel more like a pistoning sensation. The instability check (with the feeling of a jerk or of pistoning) has two steps: the manoeuvre to cause the dislocation (Barlow's manoeuvre) and the manoeuvre to relocate a dislocated hip (Ortolani's manoeuvre).

→ Elements of postural syndrome: congenital torticollis, a *genu recurvatum* or postural foot deformity may be associated with DDH.

It should be noted that clicking is a common sign without diagnostic value.

1. Dépistage de la luxation congénitale de la hanche - [Vidéo Volant d'abduction](#) and [Vidéo Piston de Barlow](#). Directorate-General for Health. November 2012; accessible at the following website: www.sante.gouv.fr/depistage-de-la-luxation-congenitale-de-la-hanche.html.

Ultrasound

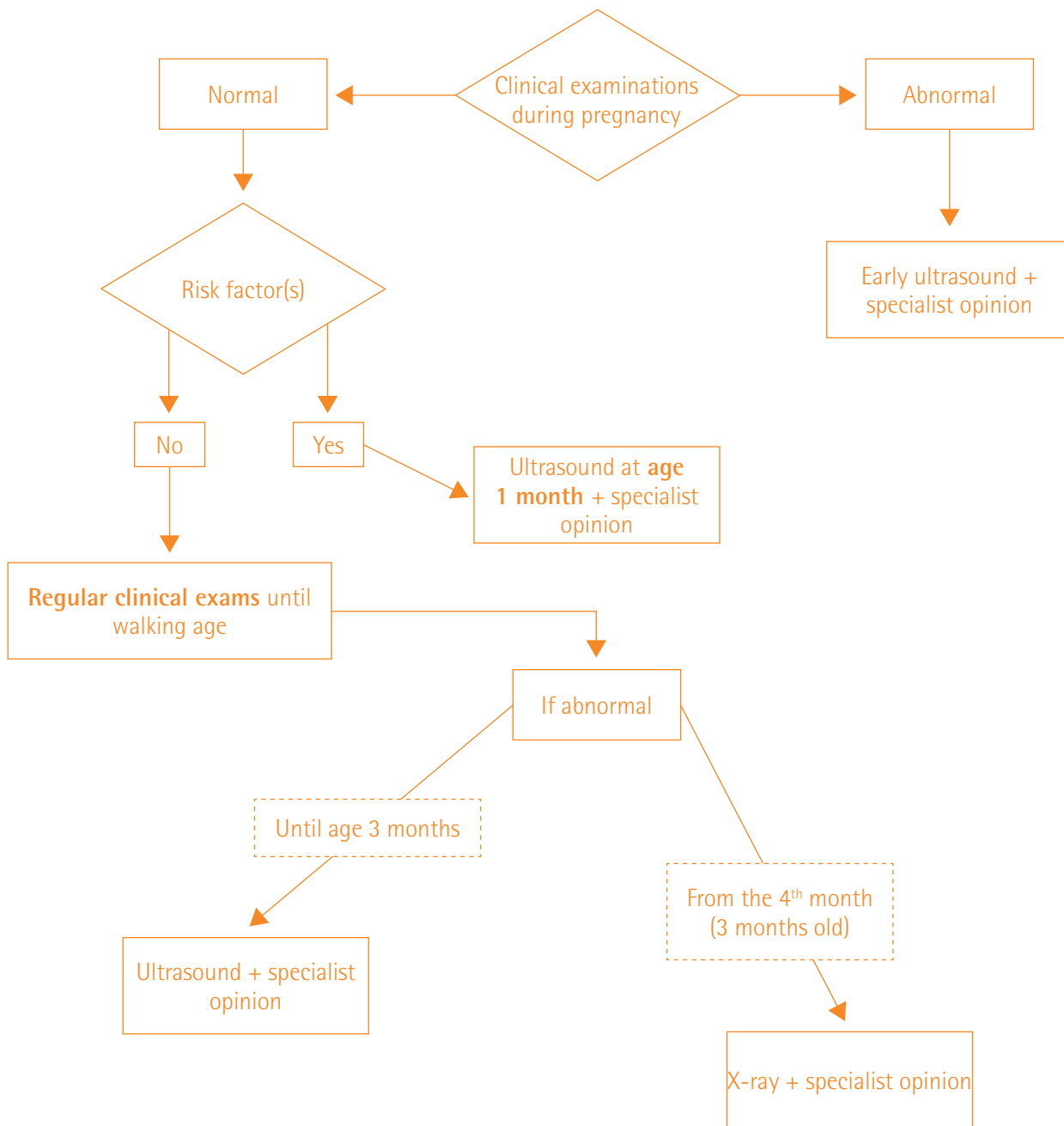
→ A **dynamic** coronal plane with measurement of the acetabular depth is preferred because of its reliability and simplicity. The standard plane, performed with a high-frequency transducer, is the external, single-slice, dynamic coronal plane performed with the patient supine, hip flexed in adduction. The thickness of the acetabular depth, a reference for normal centring of the femoral epiphysis, is measured from the medial edge of the epiphysis to the pubic bone core.

→ The normal criteria are:

- acetabular fossa < 6 mm;
- difference between the two hips < 1.5 mm

→ The Graf technique combines the morphological criteria (bony roof remodelling, bony rim, cartilaginous roof).

DDH screening strategy



Update of this guidance leaflet

This guidance leaflet will be updated based on new medical or medico-economic data.



Working document can be downloaded at:
www.has-sante.fr

THE ORIGINAL FRENCH VERSION IS THE LEGALLY BINDING TEXT