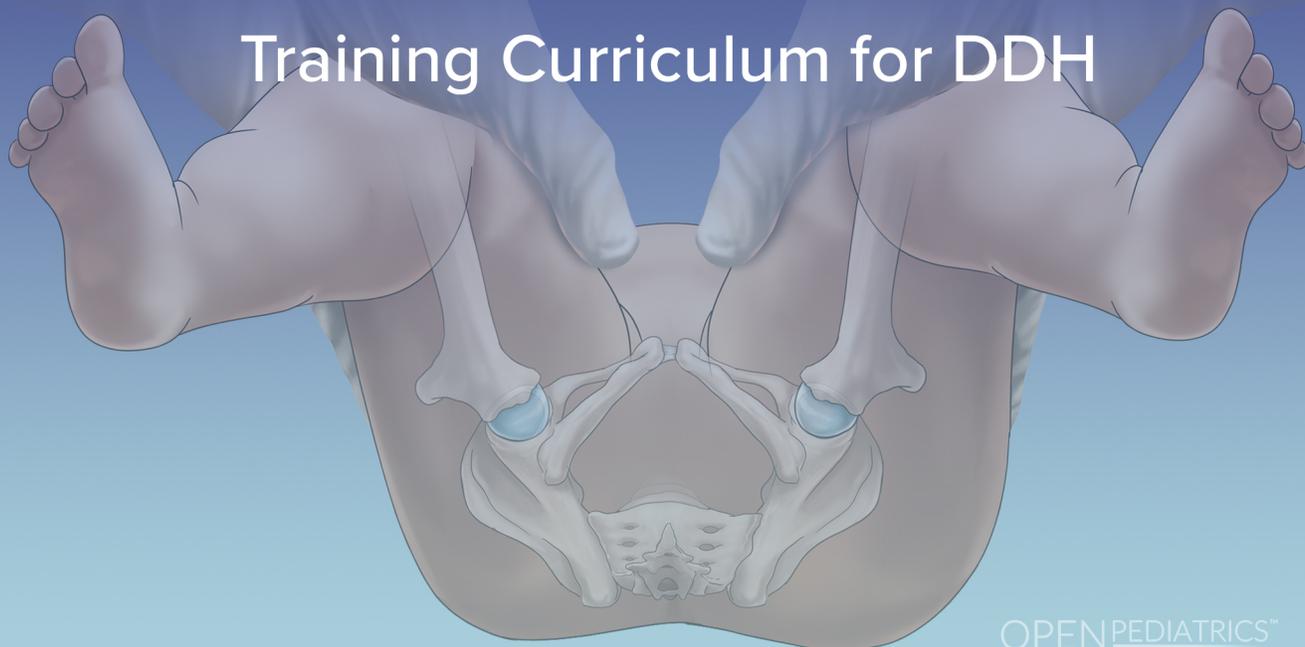




DEVELOPMENTAL DYSPLASIA OF THE HIP (DDH)

Training Curriculum for DDH



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TRAINING DOCUMENTS

INSTRUCTOR

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openpediatrics.org

Developmental Dysplasia of the Hip (DDH): Infographic



Developmental Dysplasia of the Hip (DDH)

is a condition in which an infant's hip joint does not form properly



In a survey: **only 15%** of general pediatric exams correctly diagnosed patients with DDH. Only 5/44 pediatric trainees performed a correct hip exam.

Training gaps among healthcare providers include:



Limited knowledge of correct maneuvers



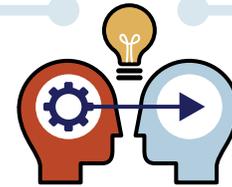
Insufficient feedback on the maneuvers learned in training



Non-standardized procedural checklists for hip exam

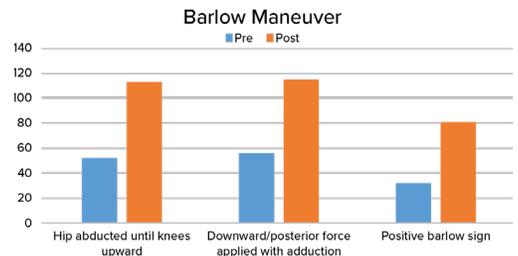
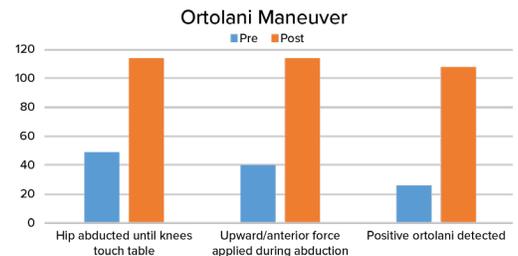
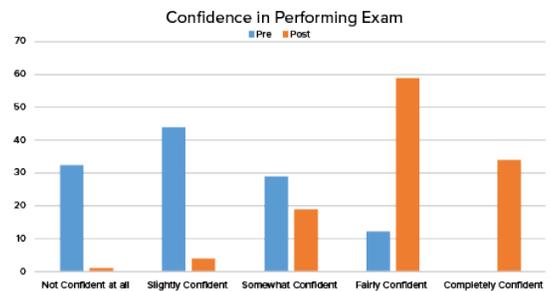


Limited opportunities to practice maneuvers on normal and abnormal models



A Mastery Learning model allows learners to practice with coaching as many times as needed to reach competence.

POWERED BY VALIDATION DATA:



Results of a pre-post study of 117 pediatric interns who examined an infant hip model before and after using our hip curriculum.

The Uniformed Services University of the Health Sciences (USU), 4301 Jones Bridge Rd., Bethesda, MD 20814-4799.

This project was sponsored by the Uniformed Services University of the Health Sciences (USU); however, the information or content and conclusions do not necessarily represent the official position or policy of, nor should any official endorsement be inferred on the part of, USU, the Department of Defense, or the U.S. Government.

Instructor and Testing Guide

1. You can instruct 1-4 learners at a time. **Start by showing the video provided in the QR code.**



- Set out the model on a table. Ideally, the infant should have a diaper on. Explain the purpose of the curriculum: to standardized the teaching of the hip exam in infants.
- If the learners have done this exam in the past, have them demonstrate to you their current techniques.

2. Instruction:

- a. The instructor will teach the procedure to learners in pairs. The instructor emphasizes that the infant hip exam consists of:
 - i. Inspecting the thigh folds for asymmetry
 - ii. Performing the Galeazzi maneuver
 - iii. Performing the Ortolani maneuver
 - iv. Performing the Barlow maneuver
- b. Using the **normal** model, the learner will read each item in the checklist for performing the hip exam on the normal model aloud to the instructor while the instructor performs the skill on the model. Instructors can view an example of this instructor technique by scanning this QR code:



- c. When all the steps are completed, the learner will perform the hip exam on the model while another learner or the instructor reads each step aloud. Feedback can and should be provided at each step. Correct any mistakes in technique.
- d. Finally, the learner will perform the exam on the normal model without any coaching. This should be repeated until all steps are completed correctly without coaching.
- e. **Switch to the abnormal model** by replacing the normal lower half of the mannequin with the abnormal lower half.
- f. The learner will read each item in the checklist for performing the hip exam on the abnormal model aloud to the instructor while the instructor performs the skill on the model. The instructor then allows the learner to perform all the steps in the hip exam checklist on the **abnormal** model.
- g. The instructor should allow the learner to practice eliciting the clunk on the abnormal left hip model several times and feeling the subluxable hip joint on the contralateral side several times.

Instructor and Testing Guide

h. If time allows, the learners can practice as many times as they like with both models.

3. Testing – see testing set up photo

- a. Learners should be tested one at a time after the instruction phase.
- b. The instructor will set up either a normal or abnormal hip model and tell the learner to examine the infant hips.
- c. The instructor can rate the learner using the checklist. No feedback is to be given.
- d. If feasible, the instructor can switch to a normal or abnormal model and repeat the testing. After both normal and abnormal models are examined, the instructor can ask the learner to identify which infant model has a normal hip exam and which one has an abnormal hip exam.
- e. End of testing. Feedback to the learner can be given after testing is completed.

4. Finally: Distribute the QR code for the hip exam for refresher training as needed.



Normal Model

Inspection

- Place the Infant supine and remove diaper.
- Inspect the diaper area and assess the symmetry of thigh skin folds.

Galeazzi sign

- Place both feet flat on the table and flex both knees. See if both knee heights are equal or unequal (Galeazzi sign).

Ortolani maneuver

- Examine one hip at a time.
- Stabilize the hips with one hand and examine the contralateral hip.
- Slide the webbing of your thumb and first finger down the shin so that you can place your thumb in the middle of the inner thigh.
- Flex the knee to 90 degrees and then flex the hip with one hand.
- Place your 4th figure or middle finger over the greater trochanter.
- Abduct the leg until the knee nearly touches the table and apply gentle upward pressure.

Barlow maneuver

- Adduct the leg until the knee points toward the ceiling and apply gentle downward pressure. Repeat gentle upward and downward movement of the hip several times, using your finger on the greater trochanter to feel if the hip moves out of the joint.

REPEAT maneuvers until you can do it correctly without coaching

Final Step: Do the Ortolani and Barlow exam with your EYES CLOSED

Abnormal Model

Inspection

- Notice that the thigh folds are asymmetric.

Galeazzi sign

- Note that with the **Galeazzi maneuver**, the left thigh is slightly shorter than the right thigh and the knees are not the same height. Why? (because the hips dislocate posteriorly).

Ortolani maneuver

- Abduct the left hip and feel the “clunk” with your 4th finger as you abduct the hip and apply upward pressure the whole time. This is a **positive Ortolani sign**.

Barlow maneuver

- Adduct the right hip; feel that the hip joint has more up and down leeway as you gently apply upward and downward pressure to the adducted hip. This is a **positive Barlow sign** - the feeling that the head of the femur can move in and out of the hip joint easily.

Scan and keep this video for the future:

