

Paediatric Orthopaedics

Five Things Physicians and Patients Should Question

by
Canadian Orthopaedic Association
Canadian Paediatric Orthopaedic Group
Last updated: February 2023



1 Do not order a screening hip ultrasound to rule out developmental hip dysplasia or developmental hip dislocation if the baby has no risk factors and has a clinically stable hip examination.

Hip dysplasia/dislocation is relatively rare, with incidence of approximately 7 per 1,000 births. Studies have shown that universal screening programs for developmental hip instability using ultrasounds to assess otherwise normal appearing hips have a nearly negligible positive yield. There is a substantial false positive rate. When there are no physical findings or underlying risk factors for hip dysplasia/dislocation in a newborn, a hip ultrasound is costly, time-intensive and the findings may be misleading to parents and physicians.

2 Do not order radiographs or advise bracing or surgery for a child less than 8 years of age with simple in-toeing gait.

Mild in-toeing is usually a physiologic phenomenon reflecting ongoing maturation of the skeleton. Metatarsus adductus, femoral anteversion, and tibial torsion all contribute to in-toeing and tend to improve with growth. Simply monitoring gait for continued improvement at normal well child examination intervals is adequate until the age of 7–8 unless there is severe tripping and falling or asymmetry. It is not possible to alter the natural evolution using physical therapy, bracing or shoe inserts.

3 Do not order custom orthotics or shoe inserts for a child with minimally symptomatic or asymptomatic flat feet.

Flexible flat feet are normal physiologic variants commonly found in children and adults. Unlike a painful or rigid flatfoot that requires further workup, if an arch is present when standing on tiptoe, the foot can be managed with observation or over-the-counter orthotics. The use of custom orthotic devices to provide support for the foot does not aid in the development of the arch.

4 Do not order advanced imaging studies (MRI or CT) for musculoskeletal conditions in a child until all appropriate clinical, laboratory and plain radiographic examinations have been completed.

History, physical examination, and appropriate radiographs remain the primary diagnostic modalities in pediatric orthopaedics, as they are both diagnostic and prognostic for the great majority of pediatric musculoskeletal conditions. Examples of such conditions would include the work up of injury or pain (spine, knees and ankles), possible infection, and deformity. MRI examinations and other advanced imaging studies are costly and frequently require sedation in the young child (under 5 years old) Additionally, a significant dose of radiation is delivered to the patient during a CT scan.

5 Do not order follow-up X-rays for buckle (or torus) fractures if they are no longer tender or painful.

Buckle (torus) fractures are very common injuries in young children, especially in the distal radius. These fractures are inherently stable and do not necessarily require a formal cast, unless severe pain or fracture instability necessitates a cast for 4 weeks. Instead immobilization with a simple wrist brace or removable splint is often preferable. If the fracture is non-tender to palpation at 4 weeks post-injury, no follow-up radiograph is required, and full activities may be resumed.

How the list was created:

The Canadian Orthopaedic Association (COA) recently formed a Subspecialty Society Council, in which all affiliated Subspecialty Societies are represented by their President or a member of the Executive. This Council encouraged the Subspecialty Society members to forward their recommendations and references for review. As clinical and practical experts in their field, the COA has endorsed these recommendations based on past position statements and publications.

Sources

- 1 Laborie LB, et al. Selective ultrasound screening for developmental hip dysplasia: effect on management and late detected cases. A prospective study during 1991-2006. *Pediatric Radiol.* 2014 Apr;44 (4): 410-424. [PMID: 24337789](#).
Mahan ST, et al. To screen or not to screen? A decision analysis of the utility of screening for developmental dysplasia of the hip. *J Bone Joint Surg Am.* 2009 Jul;91(7):1705-1719. [PMID: 19571094](#).
Shaw BA, et al. Evaluation and referral for developmental dysplasia of the hip in infants. *Pediatrics* 2016; 138(6). [PMID: 27940740](#).
Shorter D, et al. Cochrane Review: Screening programs for developmental dysplasia of the hip in newborn infants. *Evid Based Child Health.* 2013; 8(1): 11-54. [PMID: 23878122](#).
- 2 Fabry G, et al. Normal and abnormal torsional development in children. *Clinical Orthopaedics and Related Research.* May 1994; (301):22-26. [PMID: 8168306](#).
Fabry G, et al. Torsion of the femur: A follow up study in normal and abnormal conditions. *J Bone Joint Surg. Am.* Dec 1973;55(8):1726-1738. [PMID: 4804993](#).
Lincoln TL., et al. Common rotational variations in children. *The Journal of the American Academy of Orthopaedic Surgeons.* Sep-Oct 2003; 11(5):312-320. [PMID: 14565753](#).
Staheli LT., et al. Lower-extremity rotational problems in children. Normal values to guide management. *J Bone Joint Surg Am.* Jan 1985;67(1):39-47. [PMID: 3968103](#).
Svenningsen S., et al. Regression of femoral anteversion. A prospective study of in-toeing of children. *Acta Orthopaedica Scandinavica.* Apr 1989;60(2):170-173. [PMID: 2728876](#).
- 3 Staheli LT, et al. The longitudinal arch: A survey of eight hundred and eighty-two feet in normal children and adults. *J Bone Joint Surg Am.* 1987 Mar;69(3):426-428. [PMID: 3818704](#).
Wenger DR, et al. Corrective shoes and inserts as treatment for flexible flatfoot in infants and children. *J Bone Joint Surg Am.* 1989 Jul;71(6):800-810. [PMID: 2663868](#).
- 4 Bateni C, et al. [MRI of sports injuries in children and adolescents: what's different from adults](#). *Current Radiology Reports.* 2014;2:45.
Deyle GD. The role of MRI in musculoskeletal practice: a clinical perspective. *J Man Manip Ther.* 2011 Aug;19(3):152-161. [PMID: 22851878](#).
LaBella CR, et al. Anterior cruciate ligament Injuries: Diagnosis, Treatment, and Prevention. *Pediatrics* 2014;133(5):e1437-e1450. [PMID: 24777218](#).
Piccolo CL, et al Pediatric musculoskeletal injuries: role of ultrasound and magnetic resonance imaging. *Musculoskelet Surg.* 2017 Mar; 101(Supple 1):85-102. [PMID: 28155066](#).
Tuite MJ, et al. ACR Appropriateness Criteria® Acute Trauma to the Knee. *J Am Coll Radiol.* 2020 May;17(5S):S12-S25. [PMID: 32370956](#).
- 5 Symons S, et al. Hospital versus home management of children with buckle fractures of the distal radius: A prospective randomized trial. *J Bone Joint Surg Br.* 2001;83:556-560. [PMID: 11380131](#).
Van Bosse HJ, et al. Minimalistic approach to treating wrist torus fractures. *J Pediatric Orthop.* 2005 Jul-Aug;25(4):495-500. [PMID: 15958903](#).
Williams KG, et al. A randomized controlled trial of cast versus splint for distal radial buckle fracture: an evaluation of satisfaction, convenience, and preference. *Pediatr Emerg Care.* 2013 May;29(5):555-9. [PMID: 23603644](#).

About the Canadian Orthopaedic Association

The Canadian Orthopaedic Association (COA) is a proud partner of the Choosing Wisely Canada campaign. With some 1,300 members, the COA is the national professional association that represents Canada's orthopaedic surgeons. Its mandate is to promote excellence in bone and joint care through continuing professional development, models of care, practice-management strategies, government relations and a code of ethics. The COA has met annually since 1945, providing a venue for Canada's orthopaedic surgeons to update and refine their skills, as well as discuss and respond to professional and patient issues. Faced with increasing subspecialization, the COA has avoided fragmentation by forming subspecialty societies within the parent organization. Thus, the COA continues to speak with a united voice on behalf of the orthopaedic



About the Canadian Paediatric Orthopaedic Group

The Canadian Paediatric Orthopaedic Group is a research group that provides a collaborative research forum for orthopaedic surgeons and allied health care professionals practicing in Canada with an interest in clinical research. This organization provides an opportunity to examine the features of paediatric orthopaedic surgery unique to the Canadian environment and to improve clinical practice and research methods. CPOG's goal is to continually move towards clinical excellence through research and education while translating knowledge into tangible diagnostic, preventative and therapeutic health



About Choosing Wisely Canada

Choosing Wisely Canada is the national voice for reducing unnecessary tests and treatments in health care. One of its important functions is to help clinicians and patients engage in conversations that lead to smart and effective care choices.