Pediatric Sport & Exercise Medicine

Eight Things Clinicians and Patients Should Question

by
Canadian Academy of Sport and Exercise Medicine

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Choosing Wisely Canada™
In collaboration with the Canadian Medical Association

1. **Don't order knee radiographs to diagnose Osgood Schlatter Disease in children.**
Osgood Schlatter disease (OSD) is a clinical diagnosis, based on an appropriate history and typical physical findings. Knee radiographs do not need to be performed if there is no acute concern (such as trauma, suspicion of an avulsion fracture or red flag symptoms such as night pain, joint swelling, constitutional symptoms, etc) and patients are responding to treatment.

2. **Don't order ultrasound as an initial investigation for shoulder/knee injuries in children.**
Bony injury is more common in children and should therefore be ruled out when assessing injuries in the pediatric patient. Conventional radiography is the primary and usually only imaging modality necessary for evaluating shoulder and knee injuries. Ultrasound should not be ordered as part of the initial diagnostic workup; however, if patients do not respond to conservative management, additional imaging may be necessary.

3. **Don't order scoliosis radiographic series for back pain.**
Scoliosis radiographic series consisting of full spine standing radiographs are not indicated in the evaluation of back pain unless there are clinical signs of scoliosis (asymmetry on Adams forward bend test, asymmetry of the shoulders, etc). When clinically indicated, radiographs are a good initial diagnostic tool to assess back pain but should be limited to the area of interest to limit radiation exposure.

4. **Don't order thoracic spine radiographs if there is clinical concern about scoliosis.**
Guidelines from the American College of Radiology (ACR) and the Society on Scoliosis Orthopedic and Rehabilitation Treatment (SOSORT) recommend full spine standing posterior-anterior (PA) and lateral radiography on initial examination of scoliosis and using lower-dose radiography techniques when available. Thoracic spine radiographs are not sufficient to evaluate scoliosis as they may not allow for adequate visualization of the curves, especially potential lumbar components. They also do not allow for assessment of the Risser index, a measure of the degree of iliac apophysis ossification and a marker for both skeletal maturity and potential curve progression.

5. **Don't order oblique radiographic views for investigation of spondylolysis.**
Due to their efficacy, low cost, and low radiation exposure, 2-view plain films are the best initial study. Oblique radiographs detect less than 30% of spondylolysis lesions and pose increased radiation exposure with little to no increased benefit. Advanced imaging (MRI, bone scan +SPECT) may detect stress injury not seen on radiographs.

6. **Don't order a head CT scan for minor head injuries/concussion.**
A significant number of children undergo CT scans for minor head injuries, which are often concussions, exposing children to the potentially harmful effects of ionizing radiation and imposing undue costs to the healthcare system. A number of clinical decision rules for use of CT for minor head injury in children, including PECARN, CATCH and CHALICE rules, have been developed in the last two decades and have shown that children with low risk for clinically important structural brain injury, as in the setting of concussion (no focal neurological deficits, no altered mental state, etc), do not require CT imaging.

7. **Don't immobilize a joint with suspected amplified pain syndrome (complex regional pain syndrome).**
Complex regional pain syndrome (CRPS) is a chronic severe pain condition that involves peripheral, central and autonomic nervous system and immune system mechanisms. Immobilization of the painful area can lead to prolonged symptoms and poor outcomes and should be avoided unless required for underlying pathology such as fracture management.

8. **Don't order follow-up radiographs for buckle fractures of the distal radius if there are no clinical symptoms at the time of follow-up.**
Most if not all buckle fractures heal without complications. Follow up radiographs are not indicated if symptoms have resolved, as this will expose the child to unnecessary radiation.

How the list was created

The Canadian Academy of Sport and Exercise Medicine (CASEM) Board approved the development of pediatric-specific sport and exercise medicine (SEM) Choosing Wisely Canada's recommendations. A small working group was created to review existing Choosing Wisely Canada recommendations. The working group then created a list of suggested pediatric-specific SEM recommendations based on existing research, experience and common practice patterns. This list was then sent to the Pediatric Interest Group of CASEM, as well as a pediatric orthopedic surgeon and a pediatric MSK radiologist at McMaster University, to seek feedback on each suggested recommendation. Following revisions based on the feedback, a national survey was conducted with CASEM's membership to solicit members' feedback for each recommendation. Further revisions were made by the working group and the list was then sent to CASEM's publication committee for review and feedback. Final edits were made and approved for submission to Choosing Wisely Canada by the CASEM Board.

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About the Canadian Academy of Sport and Exercise Medicine

The CASEM was developed because of specific medical problems presented at the 1968 Summer Olympics in Mexico, and became officially incorporated on June 8, 1970. Since that time it has evolved from an organization providing medical care to elite athletes at international events to the leading source of information and expertise in the art and science of sport medicine.

The CASEM's affairs are managed by a Board of Directors who are elected annually. The office is based in Ottawa. Operating costs are supported through membership fees, corporate sponsorship, fundraising activities and charitable donations (the CASEM is registered as a charitable organization.)

CASEM ACMSE

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.

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