



Orthopaedic Surgery and Sports Medicine

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Children's Division of Orthopaedic Surgery and Sports Medicine provides care for all musculoskeletal conditions in newborns, children, and teens. The orthopaedic team at Children's includes pediatric orthopaedic surgeons, pediatric sports medicine specialists, physician assistants, nurse practitioners and certified athletic trainers. Our doctors have subspecialty areas of focus involving all aspects of pediatric orthopaedics.

Services include diagnosis, evaluation and treatment of:

- Acute injuries including fractures, ligament injuries, and dislocations
- Scoliosis and other spine problems, including casting, bracing and surgery
- Clubfoot, hip dislocation and other orthopaedic congenital defects
- Urgent orthopaedic conditions including musculoskeletal infections and tumors
- Congenital deformities of the hand, arm and shoulder
- Brachial plexus injuries
- Sports-related injuries in children and adolescents
- Children and teens with physical disabilities, cared for in a team approach with other medical specialists
- Casting and bracing

There are appointments available for urgent visits. Contact 202-476-4063 if urgent slots are full.

Diagnosis/Symptom	Suggestions For Initial Work-Up	Consider Referral When	Data Needed
Painful limping or refusal to bear weight	<ul style="list-style-type: none"> ■ Clinical history – fever, recent URI ■ Physical exam – localizing the pain ■ X-rays ■ Beware of septic hip – especially in child age < 12 years with hip or non-specific leg pain or limp > 2 days with fever 	<ul style="list-style-type: none"> ■ Persistent pain or limp – 48 hours. ■ Abnormal x-ray consistent with fracture or infection. ■ Abnormal labs- ESR, CRP and WBCC. ■ Any child with limp who appears acutely ill. 	Lab results, x-rays
Acute fracture at any anatomic site	<ul style="list-style-type: none"> ■ Clinical history – discrete history of trauma and localized bony pain + deformity ■ X-rays of the anatomic area of pain (2 views at least) – if pain can be localized 	<ul style="list-style-type: none"> ■ All fractures that are beyond comfort level of treating physician should be referred for acute care. ■ As a general rule, fractures with more than 15-20 degrees of angulation are likely to require reduction or correction of their deformity. 	All x-rays
“Compartment Syndrome” or Severe Traumatic Leg or Arm Pain	<ul style="list-style-type: none"> ■ Clinical history – soft tissue or fracture pain in excess of usual pattern ■ Physical exam – recognize the most important clinical symptom: pain in excess of usual pattern 	<ul style="list-style-type: none"> ■ Refer when “Compartment Syndrome” is being considered. ■ This is a diagnosis requiring emergent care. ■ Timely diagnosis and treatment are extremely difficult. ■ A definitive diagnosis is made by preoperative compartment pressure measurements. 	Any x-rays if taken

Diagnosis/Symptom	Suggestions For Initial Work-Up	Consider Referral When	Data Needed
Knee Sprain or Ligament Injury	<ul style="list-style-type: none"> ■ Clinical history – history of acute trauma then pain ■ Clinical exam – knee effusion and pain ■ X-ray – AP/lateral and sunrise views of the knee ■ True sprain or ligament injury should be splinted with partial weight bearing from 4-6 weeks with improvement or reassessment at 2, 4, and 6 weeks ■ Labs not helpful ■ MRI is diagnostic for ligament injuries 	<ul style="list-style-type: none"> ■ Apparent contusion or sprains may actually be a physical injury or occult fracture, and “sprain” as a diagnosis should be used with caution. <ul style="list-style-type: none"> - Refer if not improved at 6 weeks for re-evaluation. Also if diagnosis is uncertain, referral is appropriate. - Refer all patients with MRI diagnosis and all adolescent athletes with an acute injury with obvious knee effusion. (MRI is not required prior to referral but is helpful.) Such patients will have a ligament injury in 75% of cases. 	Any x-rays or studies obtained
Developmental Dysplasia of the Hip (DDH)	<ul style="list-style-type: none"> ■ Clinical history – conditions associated with DDH are family history, breech presentation, first born and females. ■ Physical exam – hip “clunk” diagnostic, but exam findings can be subtle. ■ A hip “click” is not a sign of pathology. ■ Plain x-rays are not helpful under 3 months. Ultrasonography is used in younger patients (age 4 weeks to 3 months). ■ AP of pelvis is diagnostic in patients over 3 months of age. 	<ul style="list-style-type: none"> ■ All infants with hip clunk. ■ Patient with family history of DDH, breech presentation, and abnormal ultrasound (under 3 months) or x-ray (over 3 months) should be referred. 	Ultrasound, x-rays (not necessary prior to referral)
Clubfoot	<ul style="list-style-type: none"> ■ Clinical history – family history ■ Physical exam – includes: <ul style="list-style-type: none"> - Foot has a “cavus” (high arch) appearance - “Adductus” or bending the forefoot towards the midline - “Inverted” heel – tilted inwards and - “Equinus” – plantar flexed foot - Radiographs – not necessary 	<ul style="list-style-type: none"> ■ New clubfoot < 1 year old – at diagnosis to see within 1-2 weeks. ■ Clubfoot – in an older child, may reoccur after prior treatment – that looks bad, feels bad, works poorly. 	No x-rays needed, send hip ultrasound if performed

Diagnosis/Symptom	Suggestions For Initial Work-Up	Consider Referral When	Data Needed
Scoliosis or other spinal deformity	<ul style="list-style-type: none"> ■ Clinical history – usually asymptomatic ■ Physical exam – trunk shift, shoulder imbalance; look for leg length inequality ■ Radiographs – upright PA/lateral CTLS spine (long cassette) 	<ul style="list-style-type: none"> ■ Refer all children with a scoliosis > 20 degrees (x-ray), and patients under ten with curves over 10 degrees. ■ As a general rule, patients receive bracing treatment for significant progression in young patients with moderate curves (20-45 degrees) and surgical treatment for curves > 50 degrees. 	X-rays, any other studies
Spondylolysis and Spondylolisthesis (stress fracture of lower back)	<ul style="list-style-type: none"> ■ Clinical history – usually low back pain. Possible history of overuse/hyperextension ■ Physical exam – may have local tenderness with back extension possible “stepoff” at L5/S1 region ■ Radiographs – AP/lateral, obliques of L-spine ■ Bone scan, CT can confirm diagnosis if plain x-ray is equivocal 	<ul style="list-style-type: none"> ■ Spondylolysis/Spodsylolisthesis diagnosis is treated with an algorithm of rest, physical therapy, and immobilization. ■ Surgery is sometimes needed for progressive spondylolisthesis. 	X-rays and labs
Intoeing: metatarsus adductus (MTA), tibial torsion and femoral anteversion	<ul style="list-style-type: none"> ■ Physical exam – curving of the forefoot towards the midline, or intoeing from hip to knee or knee to ankle 	<ul style="list-style-type: none"> ■ >90% of MTA are flexible and do not need treatment. ■ Internal tibial torsion and femoral anteversion nearly always resolve with growth and rarely require treatment other than reassurance to parents. 	X-rays not necessary
Bowlegs (Possible Blount’s Disease)	<ul style="list-style-type: none"> ■ Clinical history – evaluate patient for metabolic problems or other skeletal problem (i.e. Rickets) ■ Physical exam – assess leg for clinical appearance of bowlegs in toddlers ■ X-rays – standing AP both lower extremities ■ X-rays are useful for this diagnosis at age 2 or older (not patients under 2 years old) 	<ul style="list-style-type: none"> ■ Blount’s Disease is an uncommon dysplasia of the knee with clinical appearance of “bowed” legs. This must be differentiated from physiologic bowing: a variant of normal. ■ Refer toddlers with bowlegs not improving by age 2 years. (Physiologic bowing reaches its peak at 18 months then improves.) 	X-rays and labs

Diagnosis/Symptom	Suggestions For Initial Work-Up	Consider Referral When	Data Needed
Slipped Capital Femoral Epiphysis (SCFE)	<ul style="list-style-type: none"> ■ Clinical history – hip pain or referred knee pain in well adolescent; +/- able to bear weight ■ Physical exam – pain/loss of hip internal rotation ■ Plain x-rays – “slip” of femoral capital epiphysis. SCFE occurs bilaterally in 20% of cases and may be associated with hyperthyroidosis, renal disease and other systemic conditions 	<ul style="list-style-type: none"> ■ Refer all children between ages 6 and 15 years with persistent hip pain and painful passive ROM (esp. internal rotation) as an urgent/emergent referral because of the need to avoid severe displacement. ■ Referral of children with a radiographic diagnosis should occur emergently. Treatment is urgent operative fixation. Patients should be non-weight bearing! 	X-rays: AP and lateral both hips
Torticollis*	<ul style="list-style-type: none"> ■ Clinical history – onset typically at infancy or “muscular” torticollis ■ 90% of infantile torticollis resolves with stretching ■ Physical exam – infantile soft tissue “mass” at sternocleidomastoid on the contracted side ■ Radiographs – screen for C-spine abnormalities <p data-bbox="415 1003 862 1175">* <i>Note: Acute adolescent torticollis (“wry neck”) may occur after URI. X-rays should be carried out on C-spine. Usually resolves in 1-2 days with rest, support, NSAIDs.</i></p>	<ul style="list-style-type: none"> ■ Infants: if not showing improvement after 1-2 months; if diagnosis of muscular torticollis is in question; if any loss of milestones or neurologic deficit. ■ Adolescents: if not improved in 2-3 days; any x-ray abnormalities or any neurologic deficit. 	X-rays: AP and lateral cervical spine

