

Paediatric orthopaedic referral guidelines



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Mandatory referral content

Demographic

- Child's name
- Date of birth
- Parent/guardian contact details (incl. mobile)
- Referring GP details
- Interpreter requirements

Clinical

- Reason for referral
- Clinical urgency
- Duration of symptoms
- Management to date and response to treatment
- Relevant pathology and imaging reports (please refer to specific guidelines)
- Past medical history
- Current medications
- Functional status
- Family history

Priority

Priority will be determined on the basis of the information provided in the referral and according to the clinic's referral triage process

Emergency	Proceed to emergency department
Urgent	Phone orthopaedic registrar or paediatric orthopaedic coordinator via the hospital switch For DDH referrals: Contact senior orthopaedic physiotherapist or paediatric orthopaedic coordinator/case manager
Routine	Next available appointment. All referrals will be triaged by the paediatric orthopaedic service and appointments booked accordingly



Contact information

Specialist paediatric orthopaedic service	Address	Contact details
Barwon Health – The Geelong Hospital	Bellerine St (main entrance) Geelong Vic 3220	<p>Outpatient referrals: Enquiries: (03) 5260 3163 (GP Hotline) Fax: (03) 5226 7054</p> <p>Paediatric orthopaedic coordinator: Mobile: 0409 334 744</p> <p>Hospital switch: (03) 5226 7111 Senior orthopaedic physiotherapist – pager 310</p>
Monash Children’s at Southern Health	246 Clayton Road Clayton Vic 3168	<p>Outpatient referrals: Enquiries: 1300 3 iCARE (1300 342 273) Fax: (03) 959 iCARE (9594 2273)</p> <p>Paediatric orthopaedic case manager: Phone: (03) 9594 4073</p> <p>Hospital switch: (03) 9594 6666 Senior orthopaedic physiotherapist – pager 921 or 4516</p>
The Royal Children’s Hospital	Flemington Road Parkville Vic 3052	<p>Outpatient referrals: Enquiries: (03) 9345 7060, #2 (GP Quick Access line) Fax: (03) 9345 5034</p> <p>Hospital switch: (03) 9345 5522 Senior orthopaedic physiotherapist – pager 5465 or 5453</p>
Western Health – Sunshine Hospital	Furlong Rd St Albans Vic 3021	<p>Outpatient referrals: Enquiries: (03) 8345 1616 Fax: (03) 8345 1079</p> <p>Hospital switch: (03) 8345 1333 Senior orthopaedic physiotherapist – pager 766</p>

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Ankle and feet

Flat feet

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> • Most children under age three have flat feet • Ask if the child has pain in their feet <p>Physical examination</p> <ul style="list-style-type: none"> • Ask the child to stand on tip toes. If the arch corrects, the foot is flexible (requires no treatment) • Alternatively, if an arch can be seen in a non-weight-bearing position (e.g. sitting), the foot is flexible (requires no treatment) <p>Investigations</p> <ul style="list-style-type: none"> • For rigid flatfoot only: weight-bearing X-ray (AP, lateral and oblique) 	<ul style="list-style-type: none"> • Reassure parents. Most children develop an arch by age six • The vast majority of patients with flexible flatfoot do not require orthopaedic referral • Painless flexible flat feet require no treatment. Orthotics do not help form an arch and are not recommended • Flat feet in children (fact sheet) 	<p>Routine</p> <ul style="list-style-type: none"> • Rigid flatfoot (arch does not reform on tip toe test or in non-weight-bearing) • Painful flatfoot • Asymmetry • Localised tenderness • Difficulty in functional activities e.g. running, jumping

Intoeing

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <p>Common causes:</p> <ul style="list-style-type: none"> • Infant <ul style="list-style-type: none"> – Metatarsus adductus • Toddler <ul style="list-style-type: none"> – Internal tibial torsion • School-age child <ul style="list-style-type: none"> – Increased femoral anteversion (excessive range of internal rotation and small range of external rotation) <p>Physical examination</p> <ul style="list-style-type: none"> • Observe child's gait • Place in prone and check range for internal and external rotation of the hip, thigh-foot angle and foot posture 	<ul style="list-style-type: none"> • Reassure the parents. Intoeing in most children will improve as they grow and no treatment is required. • Intoeing can persist into adult life but rarely does this seem to cause major problems • Intoeing in children (fact sheet) 	<p>Routine</p> <ul style="list-style-type: none"> • Intoeing exceeds normal limits for age • Asymmetrical deformity • Tripping in a school-age child that affects participation in activities • Progressive intoeing • Associated patella pain • Hypertonicity

Out-toeing

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> Commonly seen in early walkers due to restricted internal rotation of the hip May be associated with knock knees (genu valgum) and flatfoot Be aware of serious causes e.g. slipped upper femoral epiphysis <p>Physical examination</p> <ul style="list-style-type: none"> Observe child's gait Place in prone and check for internal and external hip range of motion, thigh-foot angle and foot posture 	<ul style="list-style-type: none"> Reassure the parents. The majority of out-toeing will resolve as the child grows and no treatment is required Exclude other causes such as slipped upper femoral epiphysis 	<p>Routine</p> <ul style="list-style-type: none"> If progressive out-toeing Functional difficulties Asymmetrical deformity Thigh-foot angle > 30–40 degrees

Toe walking

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> Usually idiopathic; family history of toe walking Although rare, need to rule out significant conditions such as spinal dysraphism, muscular dystrophy and cerebral palsy <p>Physical examination</p> <ul style="list-style-type: none"> Gait assessment Inspect spine Functional tests: check if able to stand with heels down with trunk straight and able to walk on heels Calf length Calf size Neurological assessment <p>Investigations</p> <p>If suspicious:</p> <ul style="list-style-type: none"> spinal X-ray CPK 	<ul style="list-style-type: none"> Consider referral to paediatric physiotherapist for assessment and management 	<p>Routine</p> <ul style="list-style-type: none"> Inability to dorsiflex foot beyond neutral, stand with heels down or walk on heels Signs of cerebral palsy with hypertonia, hyperreflexia or ataxia Calf hypertrophy Asymmetry Abnormal spine examination

Bow legs (*genu varum*)

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> • Physiologic bowing is the most common cause of bow legs and is seen from birth until two or three years of age • Be aware of pathological causes e.g. rickets, Blount's disease <p>Physical examination</p> <ul style="list-style-type: none"> • Determine the patient's height and weight percentiles • Assess intoeing • Measure intercondylar distance in standing with feet together <p>Investigations</p> <p>X-ray of knees if:</p> <ul style="list-style-type: none"> • unilateral deformity • progressive deformity • lack of spontaneous resolution • aged over three years old 	<ul style="list-style-type: none"> • Reassure the parents. Physiological bow legs will resolve by age three with normal development. No specific treatment is required • If concerned, serial measurement of intercondylar distance every six months to document progression or resolution may be useful • Bow legs and knock knees in children (fact sheet) 	<p>Routine</p> <ul style="list-style-type: none"> • Persistence of bow legs after three years of age • Intercondylar separation > 6 cm • Asymmetrical deformity • Excessive deformity • Progressive deformity or lack of resolution • Pain • After a traumatic event • Other associated skeletal deformity such as height below 5th centile for age

Knock knees (*genu valgum*)

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> • Physiological knock knees is seen from three to five years of age; it resolves with growth by age eight • May be familial <p>Physical examination</p> <ul style="list-style-type: none"> • Determine the patient's height and weight percentiles • Measure intermalleolar distance in standing with knees together <p>Investigations</p> <p>X-ray of knees if:</p> <ul style="list-style-type: none"> • unilateral deformity • progressive deformity • lack of spontaneous resolution 	<ul style="list-style-type: none"> • Reassure. The majority of physiological knock knees will resolve with normal development by age eight; no specific treatment is required • If concerned, serial measurement of intermalleolar distance every six months to document progression or resolution may be useful • Bow legs and knock knees in children (fact sheet) 	<p>Routine</p> <ul style="list-style-type: none"> • Persistence of significant knock knees beyond age eight • Intermalleolar separation > 8 cm • Asymmetrical deformity • Progressive deformity or lack of spontaneous resolution • Pain • After a traumatic event • Other associated skeletal deformity such as height below 5th centile for age

Osgood-Schlatter disease

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> • Most frequent cause of knee pain in children aged 10–15 years <p>Physical examination</p> <ul style="list-style-type: none"> • Pain and swelling over the tibial tubercle • Prominent and tender tibial tubercle <p>Investigations</p> <ul style="list-style-type: none"> • Plain radiographs are used to rule out serious pathology e.g. neoplasm, acute tibial apophyseal fracture and infection 	<ul style="list-style-type: none"> • Reassurance. This is a self-limiting condition and symptoms will resolve with skeletal maturity (i.e. when the bones finish growing) • Modify activities to manage the pain. Jumping or kicking activities should be avoided • Local measure such as ice, anti-inflammatories and quadriceps stretching are recommended 	<p>Routine</p> <ul style="list-style-type: none"> • Symptoms not resolving with conservative treatment • Symptoms persisting > 18 months

Developmental dysplasia of the hip (DDH)

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <p>Risk factors:</p> <ul style="list-style-type: none"> • Female sex • Breech delivery • Intrauterine packaging deformities e.g. plagiocephaly, foot deformities or torticollis • Family history of DDH <p>Physical examination</p> <ul style="list-style-type: none"> • Hip examination to check for instability with Barlow's or Ortolani's test • Limitation of hip abduction • Deep uneven gluteal crease • Leg length discrepancy • Waddling gait after walking age <p>Investigations</p> <ul style="list-style-type: none"> • Hip ultrasound if aged under six months (paediatric ultrasound service if possible) • Plain X-ray if aged over six months (paediatric radiology service if possible) 	<ul style="list-style-type: none"> • Screening ultrasound if risk factors present • Developmental dysplasia of the hip (fact sheet) 	<p>Urgent</p> <ul style="list-style-type: none"> • Abnormal clinical examination <ul style="list-style-type: none"> – Positive Ortolani's or Barlow's test – Limited hip abduction – Leg length discrepancy • Abnormal ultrasound or X-ray • If risk factors and any clinical concerns

Perthes disease

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> • Typically presents between the ages of four and 10 years • Variable pain with activity <ul style="list-style-type: none"> – Thigh, groin or knee pain • Sometimes seen in hyperactive boys <p>Physical examination</p> <ul style="list-style-type: none"> • Variable limp • Hip irritability • Loss of hip motion, especially internal rotation and abduction in flexion <p>Investigations</p> <ul style="list-style-type: none"> • Plain X-ray (AP and frog leg views) 	<p>Pain management:</p> <ul style="list-style-type: none"> • paracetamol • NSAIDS 	<p>Urgent</p> <ul style="list-style-type: none"> • All patients with confirmed Perthes or possible Perthes

Slipped upper femoral epiphysis (SUFE)

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> • Hip, thigh or referred knee pain in age group 10–16 years • Pain worse with activity and stressing hip joint • Obesity • Family history of SUFE <p>Physical examination</p> <ul style="list-style-type: none"> • Obligatory hip external rotation during hip flexion in supine • Acute loss of hip internal rotation • Short leg • Externally rotated leg • Trendelenburg gait <p>Investigations</p> <ul style="list-style-type: none"> • Plain X-ray (AP pelvis and frog leg lateral of both hips) • In early slips, X-rays may be normal. If clinical suspicion is high, an MRI may be needed and this will be part of the paediatric orthopaedic work-up 	<p>Send to ED immediately</p> <ul style="list-style-type: none"> • Non-weight-bearing with crutches until arrival at hospital 	<p>Emergency</p> <ul style="list-style-type: none"> • All patients with confirmed SUFE should be sent to the ED immediately • Contact orthopaedic registrar on call through switchboard

Infection – bone e.g. osteomyelitis

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> Any bone can be affected but cancellous bone is more common such as the metaphyseal region of long bones Child is unwell with a fever, anorexia, localised tenderness or spasm around the joint if the infection is close to the joint Beware of subacute osteomyelitis, where there may be few constitutional signs <p>Investigations</p> <ul style="list-style-type: none"> FBE, ESR, CRP X-ray (change may lag 10 days behind clinical presentation) 	<ul style="list-style-type: none"> Send to ED immediately if unwell Do not give antibiotics as will negate cultures May be reasonable to arrange some investigations if child not clearly unwell 	<p>Emergency</p> <ul style="list-style-type: none"> If clinically suspected, send referral to ED

Infection – joint e.g. septic arthritis

Initial pre-referral workup	GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> Infection more common in infants and toddlers Hip joint more common than knee or ankle joint Child unwell, listless, flushed and fever Child cannot be coaxed to move the joint 	<ul style="list-style-type: none"> Send to ED immediately Do not give antibiotics as will negate cultures No need for investigations if clinically suspected 	<p>Emergency</p> <ul style="list-style-type: none"> Immediate referral to ED due to high risk to joint cartilage and growth plates

Limping child

Initial pre-referral workup		GP management	Indications for specialist referral										
<p>Clinical history</p> <table border="1"> <thead> <tr> <th>Age</th> <th>Common causes not to be missed</th> </tr> </thead> <tbody> <tr> <td>All ages</td> <td> <ul style="list-style-type: none"> Trauma Infection – septic arthritis, osteomyelitis Tumour Referred pain </td> </tr> <tr> <td>1 to 4 years</td> <td> <ul style="list-style-type: none"> Developmental dysplasia of the hip Irritable hip (transient synovitis) </td> </tr> <tr> <td>4 to 10 years</td> <td> <ul style="list-style-type: none"> Perthes disease Irritable hip (transient synovitis) Juvenile idiopathic arthritis </td> </tr> <tr> <td>10 to 16 years</td> <td> <ul style="list-style-type: none"> Slipped upper femoral epiphysis </td> </tr> </tbody> </table> <p>Investigations</p> <p>Depending on clinical presentation, consider:</p> <ul style="list-style-type: none"> FBE, ESR,CRP hip X-rays (AP and lateral) hip ultrasound 		Age	Common causes not to be missed	All ages	<ul style="list-style-type: none"> Trauma Infection – septic arthritis, osteomyelitis Tumour Referred pain 	1 to 4 years	<ul style="list-style-type: none"> Developmental dysplasia of the hip Irritable hip (transient synovitis) 	4 to 10 years	<ul style="list-style-type: none"> Perthes disease Irritable hip (transient synovitis) Juvenile idiopathic arthritis 	10 to 16 years	<ul style="list-style-type: none"> Slipped upper femoral epiphysis 		<p>Emergency</p> <ul style="list-style-type: none"> Red flag signs: unwell, flushed, lethargic, fever, flat, anorexic Joint is irritable and stiff Not improving
Age	Common causes not to be missed												
All ages	<ul style="list-style-type: none"> Trauma Infection – septic arthritis, osteomyelitis Tumour Referred pain 												
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Tumour – bone and soft tissue

Initial pre-referral workup		GP management	Indications for specialist referral
<p>Clinical history</p> <ul style="list-style-type: none"> Standard history <p>Physical examination</p> <ul style="list-style-type: none"> Standard examination <p>Investigations</p> <p>Consider:</p> <ul style="list-style-type: none"> X-ray FBE and U&E ESR/CRP/LFT <p>Do not administer needle biopsy/injection</p>		<ul style="list-style-type: none"> Nil 	<p>Urgent</p> <ul style="list-style-type: none"> All cases of tumours or suspected tumours should be referred to The Royal Children's Hospital's musculoskeletal tumour service and the referral discussed verbally with the service (contact Orthopaedic department on 9345 5444) Attention referral to Mr. Mark O'Sullivan, Musculoskeletal Tumour Service

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