

# Paediatric orthopaedic referral guidelines

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## Mandatory referral content

### Demographic

- > child's name
- > date of birth
- > parent/guardian contact details
- > 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
- > past medical history
- > current medications
- > functional status
- > family history

## Priority

Priority will be based upon the information provided in this referral and will be triaged according to the clinic process:

**Emergency:** Proceed to the emergency department

**Urgent:** Contact the Orthopaedic Registrar via the hospital switchboard

**Routine:** Next available appointment. All referrals will be triaged by the Paediatric Orthopaedic and Physiotherapy team and will be triaged and booked accordingly.

Please note this is a guideline for referral only. If concerned about a patient please contact the Orthopaedic Registrar via switchboard at your local hospital for further information regarding your referral.

## Contact information

Specialist paediatric orthopaedic service	Address	Contact details
<b>Women's and Children's Hospital</b>	<b>72 King William Road</b> North Adelaide SA 5006	<b>Paediatric Outpatients</b> Tel: (08) 8161 7399 Fax: (08) 8161 6246  <b>Hospital switch</b> (08) 8161 7000 ask for Orthopaedic Registrar
<b>Lyell McEwin Hospital</b>	<b>Haydown Rd</b> Elizabeth Vale SA 5112	<b>Orthopaedic Outpatients</b> Tel: (08) 8133 2095 Fax: (08) 8182 9499  <b>Hospital switch</b> (08) 8182 9000 ask for Orthopaedic Registrar
<b>Flinders Medical Centre</b>	<b>Flinders Drive</b> Bedford Park SA 5042	<b>Orthopaedic Outpatients</b> Tel: (08) 8204 5196 Fax: (08) 8177 0834  <b>Hospital switch</b> (08) 8204 5511 ask for Orthopaedic Registrar

## Ankle and feet

### Flat feet

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; most children under age 3 have flat feet</li> <li>&gt; does patient have painful flat feet?</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; flexible flat foot → no treatment (if arch corrects when standing on tip toes or arch can be seen in a non-weight bearing position)</li> <li>&gt; rigid flat foot → referral required (if arch does not reform when standing on tip toes or in a non-weight bearing position)</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; Only required for a rigid flat foot weight-bearing x-ray (AP, lateral and oblique)</li> </ul>	<p><b>Reassurance</b></p> <ul style="list-style-type: none"> <li>&gt; most children with a flexible flat foot do not require any treatment</li> <li>&gt; normal for arch to develop by age 6</li> <li>&gt; the vast majority of patients with flexible flat feet do not require an orthopaedic referral</li> <li>&gt; orthotics do not help form an arch</li> <li>&gt; <b>provide flat feet factsheet</b></li> </ul>	<p><b>Routine</b></p> <ul style="list-style-type: none"> <li>&gt; rigid flat foot</li> <li>&gt; asymmetry deformity</li> <li>&gt; progressive deformity or lack of spontaneous resolution</li> <li>&gt; painful flat foot/feet</li> <li>&gt; localised tenderness</li> <li>&gt; difficulty in activity</li> </ul>

### In-toeing

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; common causes                             <ul style="list-style-type: none"> <li>&gt; infant: Metatarsus adductus</li> <li>&gt; toddler: Internal tibial torsion</li> <li>&gt; school age: increased femoral ante version</li> </ul> </li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; observe gait</li> <li>&gt; check internal and external rotation of the hip, thigh-foot angle and foot posture</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; nil</li> </ul>	<p><b>Reassurance</b></p> <ul style="list-style-type: none"> <li>&gt; most children will improve as they grow without treatment</li> <li>&gt; may persist into adult life but causes no major issues</li> <li>&gt; <b>provide in-toeing factsheet</b></li> </ul>	<p><b>Routine</b></p> <ul style="list-style-type: none"> <li>&gt; in-toeing exceeds normal limits for age</li> <li>&gt; asymmetry deformity</li> <li>&gt; associated patella pain</li> <li>&gt; tripping in school age affecting activities</li> <li>&gt; progressive in-toeing</li> </ul>

**Out-toeing**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; common to see in early walkers</li> <li>&gt; may be associated with flat feet and knocked knees</li> <li>&gt; be aware of serious causes Slipped Capital Femoral Epiphysis (SCFE)</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; observe gait</li> <li>&gt; place in prone position and check internal and external hip range of motion</li> <li>&gt; thigh- foot angle</li> <li>&gt; foot posture</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; nil</li> </ul>	<p><b>Reassurance</b></p> <ul style="list-style-type: none"> <li>&gt; reassure parents; the majority outgrow their condition without treatment</li> <li>&gt; exclude other causes</li> </ul>	<p><b>Routine</b></p> <ul style="list-style-type: none"> <li>&gt; asymmetrical deformity</li> <li>&gt; progressive deformity or lack of spontaneous resolution</li> <li>&gt; pain</li> <li>&gt; functional problems</li> <li>&gt; thigh-foot angle greater than 30-40 degrees</li> </ul>

**Toe-walking**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; usually idiopathic, family history of toe-walking</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; observe gait</li> <li>&gt; assess spine</li> <li>&gt; functional tests:                             <ul style="list-style-type: none"> <li>&gt; measure calf length and size</li> <li>&gt; perform neurological assessment</li> </ul> </li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; if concerned:                             <ul style="list-style-type: none"> <li>&gt; spinal x-ray</li> <li>&gt; bloods - CPK</li> </ul> </li> </ul>	<p><b>Reassurance</b></p> <ul style="list-style-type: none"> <li>&gt; reassure parents</li> <li>&gt; <b>provide toe-walking factsheet</b></li> </ul>	<p><b>Routine</b></p> <ul style="list-style-type: none"> <li>&gt; unable to dorsi-flex feet beyond neutral, stand with heels down or walk on heels</li> <li>&gt; signs of cerebral palsy with hypertonia, hyperreflexia or ataxia</li> <li>&gt; asymmetrical deformity</li> <li>&gt; calf hypertrophy</li> <li>&gt; abnormal spine examination</li> </ul>

## Knees

### Bow legs (genu varum)

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; physiologic bowing is most common cause in birth up to 3 years of age</li> <li>&gt; be aware of pathological causes (rickets, Blount's disease)</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; determine height and weight percentiles</li> <li>&gt; assess gait</li> <li>&gt; measure intercondylar distance standing with feet together</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; x-rays if;                             <ul style="list-style-type: none"> <li>&gt; one-sided deformity</li> <li>&gt; increasing deformity</li> <li>&gt; lack of spontaneous resolution</li> <li>&gt; over 3 years old</li> </ul> </li> </ul>	<p><b>Reassurance</b></p> <ul style="list-style-type: none"> <li>&gt; reassure parents physiological bow legs will self-resolve with normal development by age of 3 years; no specific treatment is required</li> <li>&gt; if concerned; serial measurement of intercondylar distance to be done 6 monthly to document progression or resolution</li> <li>&gt; <b>provide bow leg and knocked knees in children factsheet</b></li> </ul>	<p><b>Routine</b></p> <ul style="list-style-type: none"> <li>&gt; persistence of bow legs over 3 years age</li> <li>&gt; intercondylar separation greater than 6cm</li> <li>&gt; asymmetrical deformity</li> <li>&gt; excessive deformity</li> <li>&gt; progressive deformity or lack of spontaneous resolution</li> <li>&gt; pain</li> <li>&gt; after traumatic event</li> <li>&gt; associated with other skeletal deformity</li> </ul>

**Knocked knees (genu valgum)**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; physiologic knocked knees seen in children between 3-5 years of age</li> <li>&gt; may be hereditary</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; determine height and weight percentiles</li> <li>&gt; assess gait</li> <li>&gt; measure intermalleolar distance standing with knees together</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; x-rays if:                             <ul style="list-style-type: none"> <li>&gt; one-sided deformity</li> <li>&gt; increasing deformity</li> <li>&gt; lack of spontaneous resolution</li> <li>&gt; over 8 years old</li> </ul> </li> </ul>	<p><b>Reassurance</b></p> <ul style="list-style-type: none"> <li>&gt; reassure parents physiological knocked knees will self-resolve with normal development by the age of 8 years; no specific treatment is required</li> <li>&gt; if concerned, serial measurement of intermalleolar distance to be done 6 monthly to document progression or resolution</li> <li>&gt; for assessment and management via the Orthopaedics Department</li> <li>&gt; <b>provide bow leg and knock knees in children factsheet</b></li> </ul>	<p><b>Routine</b></p> <ul style="list-style-type: none"> <li>&gt; persistence of knocked knees over 8 years old</li> <li>&gt; intermalleolar separation greater than 8cm</li> <li>&gt; asymmetrical deformity</li> <li>&gt; progressive deformity or lack of spontaneous resolution</li> <li>&gt; pain</li> <li>&gt; after traumatic event</li> <li>&gt; associated with other skeletal deformity</li> </ul>

**Osgood-Schlatter disease**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical History</b></p> <ul style="list-style-type: none"> <li>&gt; knee pain is most common cause in children between the ages 10-15 years</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; pain/swelling over tibial tubercle</li> <li>&gt; prominent and tender tibial tubercle</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; plain radiographs are used to exclude serious pathology/ other diagnoses</li> </ul>	<p><b>Reassurance</b></p> <ul style="list-style-type: none"> <li>&gt; reassure parents the condition is self-limiting symptoms and condition which will resolve with skeletal maturity</li> <li>&gt; modify activities which increase pain, provide quadriceps stretching exercises</li> <li>&gt; treatment of anti-inflammatory response - rest, ice, pain relief</li> <li>&gt; <b>provide Osgood-Schlatter diseases in children factsheet</b></li> </ul>	<p><b>Routine</b></p> <ul style="list-style-type: none"> <li>&gt; symptoms no resolving with conservative management</li> <li>&gt; symptoms persisting for more than 18 months</li> </ul>

## Hip

### Developmental Dysplasia of the Hip (DDH)

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; risk factors include:                             <ul style="list-style-type: none"> <li>&gt; female</li> <li>&gt; breech delivery</li> <li>&gt; intrauterine packaging deformities</li> <li>&gt; family history of DDH</li> </ul> </li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; examine hip using Barlow's or Ortolani's test for hip instability at every well-baby check</li> <li>&gt; limited hip abduction</li> <li>&gt; deep uneven gluteal crease/fold</li> <li>&gt; leg length discrepancy</li> <li>&gt; waddling gait after walking age</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; hip ultrasound if under 4 months</li> <li>&gt; x-ray AP Pelvis over 4 months</li> </ul>	<ul style="list-style-type: none"> <li>&gt; ultrasound only if over 6 weeks old and clinical concern</li> </ul>	<p><b>Urgent</b></p> <ul style="list-style-type: none"> <li>&gt; abnormal clinical examination</li> <li>&gt; positive Ortolani's or Barlow's test</li> <li>&gt; limited hip abduction</li> <li>&gt; leg length discrepancy</li> <li>&gt; abnormal investigations</li> <li>&gt; any clinical concerns</li> <li>&gt; contact local hospital on-call orthopaedic registrar via switchboard (phone numbers provided on page 2)</li> </ul>

### Perthes Disease

Initial pre-referral workup	GP management	Guidelines for Specialist Referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; commonly present between 4-10 years of age</li> <li>&gt; variable pain on activity – thigh, groin, knee pain</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; limp</li> <li>&gt; hip irritability</li> <li>&gt; decrease hip range of motion</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; x-ray plain AP and frog leg views</li> </ul>	<ul style="list-style-type: none"> <li>&gt; pain management: paracetamol, NSAIDS</li> <li>&gt; refer to Orthopaedic Department</li> </ul>	<p><b>Urgent</b></p> <ul style="list-style-type: none"> <li>&gt; Contact local hospital on-call orthopaedic registrar via switchboard (phone numbers provided on page 2)</li> </ul>

**Slipped Capital Femoral Epiphysis (SCFE)**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; hip/thigh/referred knee pain in 10-18 year age group</li> <li>&gt; increased pain with activity over hip joint</li> <li>&gt; obesity</li> <li>&gt; family history of SCFE</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; obligatory hip external rotation during hip flexion in supine</li> <li>&gt; acute loss of hip internal rotation</li> <li>&gt; short leg</li> <li>&gt; external rotated leg</li> <li>&gt; Trendelenburg gait</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; x-ray plain AP pelvis and frog leg lateral both hips</li> </ul>	<ul style="list-style-type: none"> <li>&gt; send to Paediatric Emergency Department</li> <li>&gt; ensure patient is non-weight bearing on affected side with bilateral crutches</li> </ul>	<p><b>Emergency</b></p> <ul style="list-style-type: none"> <li>&gt; <b>confirmed SCFE require immediate referral to emergency department</b></li> <li>&gt; contact local hospital on-call orthopaedic registrar via switchboard (phone numbers provided on page 2)</li> </ul>

**Other**

**Infection – bone e.g. osteomyelitis**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; any bone may be effected- spongy bone is more common in the metaphysis of long bones</li> <li>&gt; unwell child- febrile, anorexia, localised tenderness, non-weight bearing</li> <li>&gt; beware of sub-acute osteomyelitis</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; bloods- FBE, ESR, CRP</li> <li>&gt; x-ray</li> </ul>	<ul style="list-style-type: none"> <li>&gt; send to Paediatric Emergency Department if clinically unwell</li> <li>&gt; do not prescribe antibiotics as will need cultures obtained to determine appropriate antibiotics required</li> </ul>	<p><b>Emergency</b></p> <ul style="list-style-type: none"> <li>&gt; <b>if clinically suspected, send referral with patient to emergency department</b></li> <li>&gt; contact local hospital on-call orthopaedic registrar via switchboard (phone numbers provided on page 2)</li> </ul>



**Infection – joint e.g. septic arthritis**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; infection is more common in infants and toddlers</li> <li>&gt; unwell child- febrile, lethargic, non-weight bearing</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; no need for investigations if clinically suspected – refer straight to paediatric emergency department</li> <li>&gt; FBE, ESR and CRP if easily obtained</li> </ul>	<ul style="list-style-type: none"> <li>&gt; send to Paediatric Emergency Department if clinically unwell</li> <li>&gt; do not prescribe antibiotics as will need cultures obtained to determine appropriate antibiotics required</li> </ul>	<p><b>Emergency</b></p> <ul style="list-style-type: none"> <li>&gt; <b>immediate referral to emergency department with referral letter</b></li> <li>&gt; contact local hospital on-call orthopaedic registrar via switchboard (phone numbers provided on page 2)</li> </ul>

**Limping child**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; standard</li> <li>&gt; common diagnoses not to be missed                             <ul style="list-style-type: none"> <li>&gt; all ages – trauma, infection (septic arthritis, osteomyelitis), tumour, referred pain</li> <li>&gt; 1-4 years - DDH, irritable hip</li> <li>&gt; 4-10 years - Perthes disease, irritable hip, JIA</li> <li>&gt; 10-18 years - SCFE</li> </ul> </li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; standard</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; depends on clinical presentation</li> <li>&gt; bloods – FBE, ESR, CRP</li> <li>&gt; x-rays – hip (AP and lateral)</li> <li>&gt; ultrasound - hip</li> </ul>	<ul style="list-style-type: none"> <li>&gt; send to Paediatric Emergency Department if clinically unwell</li> </ul>	<p><b>Emergency</b></p> <ul style="list-style-type: none"> <li>&gt; <b>immediate referral to emergency department with referral letter</b></li> <li>&gt; contact local hospital on-call orthopaedic registrar via switchboard (phone numbers provided on page 2)</li> <li>&gt; unwell child, flushed, lethargic, fever, flat, anorexic</li> <li>&gt; irritable and stiff joint</li> <li>&gt; not improving</li> </ul>

**Tumour – bone and soft tissue**

Initial pre-referral workup	GP management	Guidelines for specialist referral
<p><b>Clinical history</b></p> <ul style="list-style-type: none"> <li>&gt; standard</li> </ul> <p><b>Physical examination</b></p> <ul style="list-style-type: none"> <li>&gt; standard</li> </ul> <p><b>Investigations</b></p> <ul style="list-style-type: none"> <li>&gt; consider:                             <ul style="list-style-type: none"> <li>&gt; x-ray</li> <li>&gt; bloods – FBE, U&amp;E, ESR, CRP, LFT</li> </ul> </li> </ul> <p>Do <u>not</u> needle biopsy suspected tumour.</p>	<ul style="list-style-type: none"> <li>&gt; refer immediately to Orthopaedic Registrar on-call</li> </ul>	<p><b>Urgent</b></p> <ul style="list-style-type: none"> <li>&gt; <b>all tumours or suspected tumours must be referred and discussed with the local hospital on-call orthopaedic registrar via switchboard</b> (phone numbers provided on page 2)</li> </ul>

**For more information**

**Women’s and Children’s Hospital**  
**72 King William Road**  
**North Adelaide SA 5006**  
**Telephone: (08) 8161 7000**  
**www.wch.sa.gov.au**



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