

Trauma Triage Clinic Referrals – Adults
Latest A&E guidelines for treatment of common orthopaedic injuries (October 2018)

Here are the guidelines for the new trauma triage clinic. Please try to adhere as much as possible. If in doubt please consult your A&E senior or the Orthopaedic SHO on-call.

Please note the following:

- **All paediatric fractures should be referred to TTC.**
- **Minor soft tissue injuries.** These generally do not require an onward referral and resolve with time. If you think that onward referral to the Trauma Triage Clinic is required please be **specific** as to the injury you want us to manage.
- **Toe fracture referrals.** Generally these need reassurance that it will heal with time (approx. 6-12 weeks), analgesia, comfortable footwear and no onward referral. If you think the fracture needs relocation/manipulation/surgical stabilisation then please refer to the Orthopaedic Registrar on-call for assessment.
- **No spine referrals** should be made to the TTC including soft tissue/whiplash injuries.
- Providing an e-mail address and telephone numbers on the referral significantly improves our chance contacting the patient in a timely manner, so please include these details on the referral form for every patient possible.
- Any wet/painful plasters **in hours (Mon-Thurs 8.30-4.30, Fri 8.30-12)** please complete a plaster room referral form and give to the patient to take directly to plaster room (room 6) in orthopaedic out-patients (corridor A, ext 2166). Out of hours please assess and replace cast accordingly.

We welcome feedback/comments. Please feel free to contact us on ext. 3700.

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Hand and Wrist Injuries

Injury/Fracture	Subcategory	A&E Management
Open fracture/joint Possible tendon injury Possible nerve injury High pressure injection injury Crush injury Concerning open wound Concerning infection Irreducible dislocation		Refer to SGH plastics team
Nailbed Injuries	Simple	Clean gently and apply a 'biological dressing' covered with mepitel, gauze and light crepe dressing Refer to TTC
	Large circumferential injuries and those exposing bone or the germinal matrix of the nail	Discuss and refer to plastics at SGH
Mallet Injuries	Closed Injury	Mallet splint (in extension) Re x-ray bony mallet injuries in splint Refer to TTC
Volar Plate Injuries	Dislocation	Reduce if needed Neighbour/buddy Strap Refer to TTC
	Avulsion Fracture	Neighbour/buddy Strap Refer to TTC
	Sprain	Neighbour/buddy Strap Refer directly to hand therapy

Finger Dislocations	Dislocation	Reduce if needed and re x-ray (careful to check for post reduction subluxation – easy to miss. Ask if not sure) Neighbour/buddy strap Refer to TTC
	Fracture dislocation	Refer to ortho on-call
Phalangeal Fractures		Reduce if needed Neighbour/Buddy Strap Refer to TTC
Metacarpal Injuries	Neck	*Refer to ortho SHO on-call if any rotational deformity or scissoring of the digit* Neighbour/Buddy strap Refer to TTC
	Shaft	Futura splint Refer to TTC
	Base	Reduce if needed Backslab in Edinburgh position (intrinsic plus) Refer to TTC
Thumb Fractures	Distal phalanx	Reduce if needed Mallet splint Refer to TTC
	Bennett's or Rolando fracture (intra-articular)	Refer to ortho SHO on-call
	Extra articular fracture	Reduce if needed Thumb cast Refer to TTC

Ulna Collateral Injury of the Thumb		*look for an associated bony avulsion or physeal injury* If displaced refer to ortho SHO on-call Thumb spica wrist splint Refer to TTC
Scaphoid Fracture	Adult radial sided wrist and thumb base/pillar pain (different to the other side) following a fall suggests scaphoid fracture unless otherwise proven	Below elbow backslab Refer to TTC
	Displaced scaphoid fractures	Discuss with ortho SHO on-call Below elbow backslab Refer to TTC
Radial Styloid Fracture	Un-displaced	Below elbow backslab Broad arm sling Refer to TTC
	Displaced fracture or high energy impact injury	Discuss with ortho SHO on-call
Distal Radius Fracture	Extra articular Intra-articular (look for Galeazzi fracture – distal 1/3 radius with disruption of radio-ulna joint – refer to ortho on-call)	Check median nerve Reduce in ED (discuss with ortho on-call if unsure) Below elbow backslab Re x-ray in backslab to check position High arm broad arm sling Ref TTC

Adult Spinal Fractures

Fracture	Subcategory	A&E management
Cervical spine fracture		Refer to ortho on-call
Thoracic spine fracture		Refer to ortho on-call
Lumbar spine fracture	Stable wedge fracture	Refer to ortho on-call – please do not refer to TTC
	All others	Refer to ortho on-call
Spine sprains/whiplash injuries		Please do not refer to TTC, GP to refer into musculoskeletal (MSK) service if necessary
Non-traumatic back and neck pain		Exclude infection Do not refer to TTC GP review or refer to spine service as out-patient

Upper Limb

Types of sling



Broad Arm Sling



Single Collar and Cuff



Double Collar and Cuff



Polysling

Fracture	Subcategory	A&E Management
Sternum Fractures		Refer to cardio-thoracic team
Rib Fractures		Refer to cardio-thoracic team
Sternoclavicular Joint Dislocation		Polysling Analgesia Refer to TTC
Acromioclavicular Joint Injuries	Grade 1/2 – Minimally displaced	Reassurance and advice Polysling Physio referral Discharge no TTC referral required
	Grade 3	Polysling Analgesia Referral to TTC
	Grade 4-6	Discuss with ortho on-call if any concerns Analgesia Polysling Refer to TTC
Clavicle Fractures	Closed fractures (no neurological deficit)	Polysling Analgesia Refer to TTC
	Open fractures, tenting of the skin with impending breakthrough of fracture, floating shoulder or neurological deficit	Refer to ortho on-call team
Soft tissue shoulder injuries		Double Collar and cuff Analgesia Refer to TTC

Shoulder dislocations	Anterior	Shoulder series x-ray – AP, axial/lateral (always 2 views) Careful neurovascular examination and documentation before and after reduction Re x-ray post reduction AP/lateral Polysling Refer to TTC
	Posterior (NB. Can be missed on an AP x-ray 'lightbulb sign') more common with high impact injury, prolonged fitting and electrocution if bilateral;	Reduce Check reduction on x-ray AP/lateral Polysling Refer to TTC
Proximal humeral fractures	Greater Tuberosity	Double Collar and cuff Analgesia Refer to TTC
	Surgical Neck	Double Collar and cuff Analgesia Refer to TTC
	$\frac{3}{4}$ part displaced fractures	Discuss with ortho on-call Documentation of neurological examination Double Collar and cuff Refer to TTC
Humeral Shaft Fractures	Open or radial nerve injury	Refer to ortho on-call
	Closed and radial nerve intact	U Slab Single Collar and cuff Analgesia Refer to TTC

Distal Humeral Fractures	Undisplaced, extra-articular and no nerve injury	Above elbow cast 90 deg flexion Broad arm sling Analgesia Refer to TTC
	Displaced, intra-articular and/or nerve injury	Refer to ortho on-call Examine radial nerve (Holstein-Lewis)
Olecranon Fracture	Undisplaced	Above Elbow Back slab Single Collar and Cuff Analgesia Refer to TTC
	Displaced	Refer to ortho on-call
Radial Head/neck fractures	Radio-humeral head located and no associated fracture of ulna	Double Collar and cuff Analgesia Refer to TTC
	Radio-humeral joint subluxed or dislocated and/or associated fracture of ulna	Double Collar and cuff Analgesia Refer to ortho on-call
Dislocated Elbow		Relocate under sedation If felt to be unstable refer to ortho on-call Above elbow cast 90 deg flexion Broad arm Sling Analgesia Refer to TTC
Radial and ulna shaft fractures	Nightstick ulna (undisplaced)	Above elbow cast (90 deg flex, neutral rotation) Broad arm Sling Analgesia Refer to TTC
	All others	Refer to ortho on-call

Lower Limb

Fracture	Subcategory	A&E Management
Pelvic Fracture	Anterior Posterior Compression (APC), Lateral Compression (LC) or Vertical Shear (VS)	Follow ATLS algorithm If suspected pelvic fracture apply pelvic binder at the level of the greater trochanters. PV and PR examination (clear documentation) Treat hypovolaemia Refer to ortho on-call
	Low energy, elderly pubic rami fractures	Mobilise FWB Investigate cause of fall Discharge planning as per best practice Refer TTC
	Avulsion fractures	Analgesia Refer to ortho on-call
Acetabular Fractures		Refer to ortho on-call
Neck of Femur Fracture		If elderly refer to the #NOF pathway Refer to ortho on-call
Dislocated Hip		Do not reduce Call ortho on-call
Dislocated Total Hip Replacement	First Dislocation	Refer to ortho on-call For reduction in theatre
	Had previous dislocations	Reduce in A&E if possible or refer to ortho on-call Even if reduced and patient fit for discharge please give details to ortho SHO on call to make an out-patient appointment with appropriate consultant.

Hip pain post fall - no fracture on plain x-ray of lateral hip and pelvis	If able to fully weight bear	Discharge Referral to TTC
	Unable to FWB	Refer to ortho on-call
Femoral Shaft Fracture		Check for compartment syndrome (as may lose significant blood volume into thigh) Consider skin traction Refer to ortho on-call
Distal Femoral Fracture		Refer to ortho on-call
Thigh Injury or haematoma		Exclude compartment syndrome Refer to TTC
Soft Tissue Knee Injury's * History of injury and careful examination (not MRI scan acutely) gives important diagnostic information. Obtain XR – AP/lat and skyline to exclude haemarthrosis and OCD.	Mild soft tissue injury/low energy injury Able to weight bear and stable knee Able to extend knee from flexed position No haemarthrosis	Reassure likely to resolve with time Mobilise FWB See GP in 6/52 if still symptomatic
	Patella tendon rupture or quads tendon rupture Always examine carefully for quads rupture in the elderly patient	Refer to ortho on-call
	? meniscal or ligament (twisting injury/sudden valgus or varus force) – has full extension	Tubigrip or cricket pad splint Refer to TTC
	? meniscal or ligament injury with block to full extension or locked knee (inability to fully extend the knee from a flexed position)	NSAID's +/- small dose of benzodiazepine for spasm Refer to TTC (if weekend or bank holiday discuss with ortho on-call)
	Major instability and painful haemarthrosis or very high energy injury with no fracture	Cricket pad splint Refer to TTC

Atraumatic Swollen Knee	Pyrexial, raised CRP or WCC	Refer to ortho on-call
Patella dislocation	1 st Dislocation	Reduce by gently extending the knee XR – AP, lat and skyline to rule out OCD FWB, crutches if needed (No need for immobilisation) Refer to TTC
	Recurrent dislocation	XR – AP, lat and skyline to rule out OCD FWB, crutches if needed (no need for immobilisation) Refer to TTC
Patella fracture	Displaced	Refer to ortho on-call Cricket pad splint
	Undisplaced	If concerned re: extensor mechanism refer to ortho on-call If extensor mechanism intact - cricket pad splint Refer to TTC
Tibial Plateau Fractures		Refer to ortho on-call Above knee backslab
Fractures of the tibia		Refer to ortho on-call Above knee backslab
Soft tissue ankle injury/sprain * Any twisting injury of the ankle +/- ankle pain must have an X-ray and examination to exclude a Maisonneuve injury.		Tubigrip If severe provide a boot WB as tolerated Refer to TTC if requiring boot or severe (the majority of these injuries do not need to be seen in TTC and can be discharged to physio or the GP).

Ankle Fractures * For any patient advised to non-weight bear (NWB) or touch weight bear (TWB) please complete a full VTE assessment and manage accordingly.	Weber A fibula fracture	Boot FWB Refer TTC
	Weber B fibula fracture No talar shift	Boot WB as tolerated Refer to TTC
	Weber B fibula fracture Talar shift	Reduce Backslab VTE risk assessment Refer to ortho on-call
	Weber C No talar shift	Backslab VTE risk assessment Refer to ortho on-call
	Weber C Talar shift	Reduce Backslab VTE risk assessment Refer to ortho on-call
	Bi-malleolar/tri-malleolar fractures	Reduce if needed Backslab VTE risk assessment Refer to ortho on-call
	Isolated medial malleolar fracture Undisplaced	Check fibular tenderness proximal to distal to exclude an associated fibular fracture Boot Touch weight bearing VTE risk assessment Refer to TTC
	Isolated medial malleolar fracture Displaced	Refer to ortho on-call

<p>Foot Injuries</p>	<ul style="list-style-type: none"> • Foot injuries require AP, oblique and lateral x-ray. The axial or Harris view of the os calcis gives information about malalignment and width of heel fractures • Any major disruptions of the foot e.g. sub-talar, talo-navicular, Chopart fracture – are associated with high energy mechanisms of injury with significant swelling and bruising leading to compartment syndrome. Hind and mid-foot dislocations require urgent reduction which sometimes requires open techniques in theatre. Therefore, please refer urgently to the orthopaedic on-call team. 	
<p>Hindfoot Injuries</p> <p>* For any patient advised to non-weight bear (NWB) or touch weight bear (TWB) please complete a full VTE risk assessment and manage accordingly</p> <p>* All Achilles tendon rupture patients (regardless of risk) should receive 14 days DVT prophylaxis</p>	<p>Achilles Tendon Rupture</p> <ul style="list-style-type: none"> • Localised pain, palpable defect, cannot heel raise, positive Thompson test • Even if none of the above, but clinical suspicion, treat as suspected Achilles injury 	<p>In hours (MON-THURS 8.30-16.30; FRI 8.30-12) Prescribe 14 days DVT prophylaxis Send straight to Plaster Room (ext 2166) in Orthopaedic Out-patient department, with a cast request form, to be put in a walking boot with 4 wedges; crutches; weight bearing as tolerated Refer to TTC Out of Hours 30 degrees front slab equinus cast NWB 14 days DVT prophylaxis Refer to TTC who will advise patient to attend Plaster room to convert cast to boot with 4 wedges, start weight bearing as tolerated and review DVT risk profile.</p>
	<p>Talus fractures +/- dislocation - forced dorsiflexion with axial load</p>	<p>Below knee backslab NWB VTE risk assessment Refer to ortho on-call</p>
	<p>Small avulsion fractures of talus/calcaneus</p>	<p>Boot NWB VTE risk assessment Refer to TTC</p>

	<p>Calcaneus fracture – Undisplaced</p> <ul style="list-style-type: none"> • check contralateral foot and spine for associated axial skeletal injuries • Any swelling or fracture blisters may need admission for elevation +/- further imaging – contact ortho on-call if concerned 	<p>Discuss any intra-articular injuries with the ortho on-call team</p> <p>Boot NWB VTE risk assessment Refer to TTC</p>
	<p>Calcaneus fracture –Displaced</p> <ul style="list-style-type: none"> • check contralateral foot and spine for associated axial skeletal injuries • Any swelling or fracture blisters may need admission for elevation +/- further imaging – contact ortho on-call if concerned 	<p>Do not backslab patient until reviewed by orthopaedics</p> <p>Refer to ortho on-call</p>
<p>Midfoot Injuries</p> <p>* For any patient advised to non-weight bear (NWB) or touch weight bear (TWB) please complete a full VTE assessment and manage accordingly</p>	<p>Avulsion fractures of tarsal bones</p>	<p>Boot FWB Refer TTC</p>
	<p>Tarsal fractures - Undisplaced</p>	<p>Boot NWB VTE risk assessment Refer to TTC</p>
	<p>Tarsal fractures - Displaced</p>	<p>Backslab Refer to ortho on-call</p>
<p>Forefoot Injuries</p> <p>* For any patient advised to non-weight bear (NWB) please complete a full VTE assessment and manage accordingly</p>	<p>Lis-franc fracture/dislocation</p> <p>* Including suspected based on mechanism, swelling, plantar ecchymosis</p>	<p>If frank diastasis/fleck of bone discuss with ortho WB x-ray (gives most information) if tolerated ?CT</p> <p>Backslab NWB VTE risk assessment Refer to ortho on-call</p>

	Hallux metatarsal fracture	Boot NWB VTE risk assessment Refer to TTC
	Lesser metatarsal fractures – single 2-4	Super shoe FWB Refer to TTC
	Lesser metatarsal fractures – single 5th	Super shoe FWB Info sheet Discharge - no follow-up required
	Lesser metatarsal fractures - multiple	Examine lat x-ray to ensure no subluxation Boot NWB VTE risk assessment Refer to ortho on-call
	Hallux phalanx fracture – Intra-articular or displaced	Boot or stiff soled shoe FWB or heel WB Refer to ortho on-call
	Hallux phalanx fracture - Undisplaced	Boot or stiff soled shoe 3/52 Buddy strap FWB or heel WB Info leaflet Discharge - no follow-up required
	Lesser phalanx fracture	Buddy strap 2/52 FWB or heel WB Info leaflet Discharge - no follow-up required

	Toe Dislocations	Reduce Buddy strap 2/52 FWB or heel WB Discharge - no follow-up required
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Common Fractures in Children

Fingers	Beware the Seymour fracture - Salter Harris (I/II) fractures of the distal phalanx physis with avulsion of the proximal nail plate from the eponychial fold. These look like mallet injuries with the distal phalanx held flexed. Look for blood around the nail or a fingernail that looks longer than expected.	Analgesia Refer to plastics at St Georges
Wrist and Forearm	Greenstick: <ul style="list-style-type: none"> • Infants, young children- thick periosteum and excellent remodelling potential. 	Backslab – above elbow for very small children/ <3yrs Analgesia Refer to TTC
	Any – displacement, deformity, radiological angulation, translation or shortening	Refer to ortho on-call
	Salter Harris 2 fractures - please do not attempt reduction without discussing with the orthopaedic team. Physeal injuries do not tolerate repeated attempts at reduction and should only be carried out by someone confident in reduction techniques.	Refer to ortho on-call

Elbow	Supracondylar fractures	<ul style="list-style-type: none"> • Undisplaced - may only be visible by 'sail sign'- above elbow back slab and refer to fracture clinic. • Displaced- ensure a thorough vascular and neurological examination of median, AIN, ulnar and radial nerves before and after application. 	Above elbow backslab Analgesia Refer to TTC if undisplaced or refer to ortho on-call if displaced or concern for neurovascular supply
	Lateral condyle fractures - can have benign looking Xrays that hide very significant intra-articular cartilage injuries— displaced fractures must be referred to orthopaedics	Analgesia Above elbow backslab Refer to ortho on-call	
	Medial/Lateral epicondyle fractures - remember 'CRITOL' order of appearance of ossification centres. Correlate site of pain with any radiological abnormalities- ask ED middle grades for help.	Undisplaced epicondyle fracture <ul style="list-style-type: none"> • Above elbow backslab • Refer to TTC Displaced epicondyle fracture <ul style="list-style-type: none"> • Above elbow backslab • Refer to ortho on-call 	
Clavicle	Children's clavicle fractures 'always' heal- often with a palpable lump of fracture callus that disappears over a year-18/12.	Broad arm sling Information leaflet Refer to TTC	
Proximal and diaphyseal humerus	Children's proximal humerus fractures have excellent remodeling potential.	Collar and cuff Refer to TTC	
Femoral diaphyseal fractures	Always consider NAI in non ambulant children- call for help from paediatric SpR if any concerns.	Analgesia Backslab for comfort while in ED Refer to Ortho on-call for hip spica/gallows traction/ TENS nail as indicated	
Tibial fractures	Toddler's fractures - common spiral fractures of the tibial diaphysis	Above knee backslab Refer to TTC (will later be managed in an above knee weight bearing cast in the plaster room in office hours as	

		it is almost impossible to keep a toddler NWB)
	Cozen's fracture - children's fracture of the proximal tibial metaphysis that can produce valgus deformity	Above knee backslab Refer to TTC