**Screening and Referral Tools (SRTs)**

**TRAUMATIC and ACUTE HAND/WRIST PAIN**

*Hand/Wrist Pain References p.22*

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**RED FLAGS**

Call Ortho/OT to discuss any positive Red Flag findings:

**General**
- Unwillingness to move due to pain
- Wrist/hand edema
- Unable to actively flex/ext an individual digit
- Hand/wrist trauma + swelling/limited ROM

**Fracture/Dislocation or Major Soft Tissue Injury**
- History of fall on outstretched hand (FOOSH) with pain, TTP at anatomical snuffbox, or signs of dislocation
- Deformities of wrist/hand

**Infection or Septic Joint**
- Hold all antimicrobial therapy until discussion with ortho
- Kanavel signs present (see p.14)
- Acute pain with fever
- Hx of recent infection anywhere
- Signs or symptoms of septic arthritis: acute joint swelling, pain, erythema, warmth, joint immobility (see p.15)
- Exudate or signs/symptoms of infection with/without constitutional symptoms
- Bites – human or animal
- Puncture wound to hand

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**Patient Reports With Traumatic or Acute Wrist/Hand Pain**

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**A/P and Lateral of wrist/hand Call Ortho/OT to discuss management**

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**SPECIAL TESTS EXAM**

**Tenosynovitis**
- (+) Finkelstein’s

**Artery Occlusion**
- (+) Allen’s test

**Nerve Compression/Neuropathy**
- (+) Tinel’s at wrist
- (+) Phalen’s

**Other**
- (+) Mallet finger/ganglion/trigger finger
- (+) Bone tenderness

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**HAND/WRIST EXAM**

1) **Observe**:
- Symmetry and resting position
- Edema*
- Location of soft tissue injury
- Color/skin texture abnormalities may suggest nerve injury
- Vascular status – assess capillary refill, check radial and ulnar pulses

2) **Sensory Assessment**

3) **Motor and tendon screening**:
- Able to individually raise each finger and flex/extend each finger joint – remember to block digit joints for individual finger function

4) **Bones and Joint Assessment**

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**RICE**

Relative rest as designated on profile

**Ice** compress 2-3 times daily for 20 minutes

**Compression** by elastic bandage

**Elevation** of affected joint above heart during periods of rest

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**PROFILES**

**Sample severe (A) and moderate (B) hand/wrist injury profiles on eProfile.**

(A) **Severe hand/wrist injury examples**:
- Fracture
- Ligamentous instability/tendon rupture
- Neurovascular compromise

(B) **Moderate hand/wrist injury examples**:
- Pain throughout the range of motion or pain that limits motion
- Decreased hand/grip strength

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Minimal hand/wrist injury example:
- Pain at end range of movement without decreased hand/wrist motion or strength
<table>
<thead>
<tr>
<th>TEST</th>
<th>PROCEDURE</th>
<th>(+) SIGN</th>
<th>SN/SP</th>
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</thead>
</table>
| Infectious Tenosynovitis | Kanavel’s Signs | Signs of flexor tendon sheath inflammation/ infection  
1. Uniform, symmetrical swelling of digit or tendon  
2. At rest, digit is held in partial flexion  
3. Tenderness along the flexor tendon sheath  
4. Pain when passively extending the affected finger | Any of the signs listed at left. | NA |
| Tenosynovitis | Finkelstein’s Tests for de Quervain’s tenosynovitis, or stenosing tenosynovitis of the abductor pollicis longus (APL) and the extensor pollicis brevis (EPB) tendons in the first extensor tunnel. The patient makes a fist with the thumb held beneath the clenched fingers. The examiner ulnarly deviates the patient’s wrist. | Pain at the APL and EPB tendons that reproduces the patient’s symptoms.\(^1,2\) | Data not available |
| Arterial Oclusion | Allen’s test | Tests for occlusion of the ulnar or radial artery. The patient clenches and unclenches the hand several times, then squeezes tightly into a fist. The examiner holds one thumb on the radial artery just proximal to the wrist, and one thumb on the ulnar artery just proximal to the wrist. While maintaining pressure on both arteries, the examiner instructs patient to relax the fist, then checks whether the palm and fingers have blanched (turned pale or white). Palm and fingers should blanch when examiner places sufficient pressure on both arteries. After ensuring sufficient pressure on both arteries, examiner directs patient to relax the fist. Examiner then releases pressure over one artery and checks for color change in the palm and fingers. The test is repeated from the beginning for the other artery. | Hand does not flush red within 5 seconds. | SN = .76  
SP = .82\(^1,3\) |
| Neuropathy | Tinel’s test for the median nerve at the wrist | Tests for carpal tunnel syndrome. The examiner taps the median nerve/carpal tunnel at the palmar wrist with his/her fingers or reflex hammer while assessing for symptoms. The examiner taps the median nerve at the wrist in an attempt to elicit symptoms either Tingling in the distribution of the median nerve. | SN = .23-.75  
SP = .58-.91\(^4-9\) |
| Phalen’s test | Tests for carpal tunnel syndrome. Patient places flexed elbows on table, then places dorsum of hands together as hands fall into maximal wrist flexion. Patient holds this position for at least 60 seconds. | Symptoms in the distribution of the median nerve. | SN = .34-.88  
SP = .40-.81\(^4-9\) |
| Other | Observational findings can heighten the examiner’s suspicion of conditions such as mallet finger (inability to extend the distal interphalangeal joint –DIP- or tip of finger because the extensor tendon has ruptured or the distal insertion of the extensor digitorum has torn away from the distal phalanx with possible bony avulsion), ganglion cyst (may occur in multiple locations, but commonly recognized as a firm cystic, pea-sized nodule on the dorsal or volar wrist), and trigger finger (flexor tendon nodule “catches” in the tendon’s sheath or pulley during finger flexion or extension).\(^1,10\) | | |