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# Orthocentre Common Hand Conditions

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# Common Hand Presentations

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- Hand injuries and complaints are common in general practice
- Optimal hand function is essential for daily life and for recreation



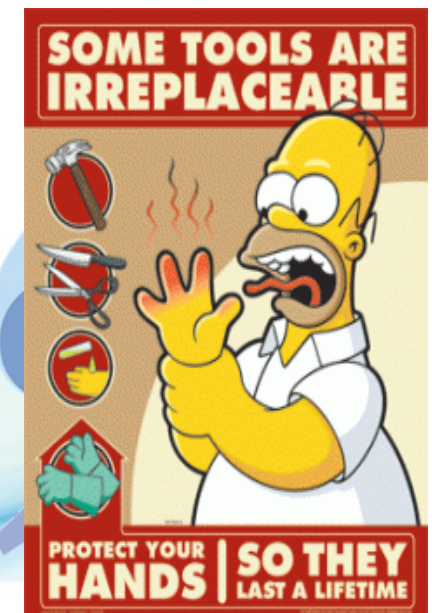
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# Common Hand Presentations

- Carpal Tunnel Syndrome
- Skier's thumb
- PIP and DIP joint injuries including arthritis
- Dupuytren's contracture
- Base of thumb arthritis
- Scaphoid fractures/non-unions
- Wrist fractures



# Case 1

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- Cally, 44 years of age, is a mother of three children. She is annoyed about the 'pins and needles' in her thumb and first three fingers of her right hand.
- Over the past 4 months she has needed to shake her hand when she gets up in the morning to 'get it going'. The pins and needles used to go away after shaking, but now persist into mid morning.

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# Case 1

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- She is also finding it more difficult to use her hands in every day activities such as gardening. In the past fortnight, a similar problem has started in her left hand.
- Generally healthy and not taking any regular medication. Over the past year her weight has increased from 63 to 68 kg (body mass index: 27.2 kg/m<sup>2</sup>) and she feels she has less energy than previously.

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# What is the diagnosis?

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- Carpal tunnel symptoms (median nerve compression)
- Other compressive neuropathies should be considered: ulnar neuropathy at the elbow or cervical nerve or root compression in the cervical spine.
- Rarely, a vasculitic illness may present as mononeuritis of the median, ulnar or both nerves.

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# What is the cause?

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- Most cases are idiopathic, occur more commonly in women than men in middle aged and elderly
- Diabetes is the most common association. Repetitive trauma can damage the wrist and cause compression. In the younger woman, pregnancy can cause oedema in the carpal tunnel. In middle aged women, diabetes or hypothyroidism are likely contributors

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# What are the clinical features?

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- Parasthesiae over radial three digits, worse with compression. Can be worse at night or in the morning.
- Phalen's test / Tinel's test / Durkan compression test
- Wasting of thenar muscles. Weakness of APB
- Difficulty opening jars and knobs

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# What investigations to perform?

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- Investigations should target the common conditions that cause carpal tunnel syndrome. In Cally's case, checking hypothyroidism and diabetes would be indicated (thyroid stimulating hormone and fasting glucose respectively). If she had symptoms consistent with arthritis, rheumatoid factor, erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) would be appropriate.
- Nerve conduction studies. These are also useful to provide a baseline for postoperative evaluation of the beneficial or ill effects of surgical intervention for medicolegal purposes.

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# When to refer?

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- Referral to a Hand Surgeon can be done at any point but must be done before wasting is evident in the thenar musculature.
- Once wasting has occurred it is very difficult to improve grip strength and pinch strength.
- Surgical decompression is highly effective in treating nocturnal symptoms. This can be either open decompression or endoscopic (key-hole)

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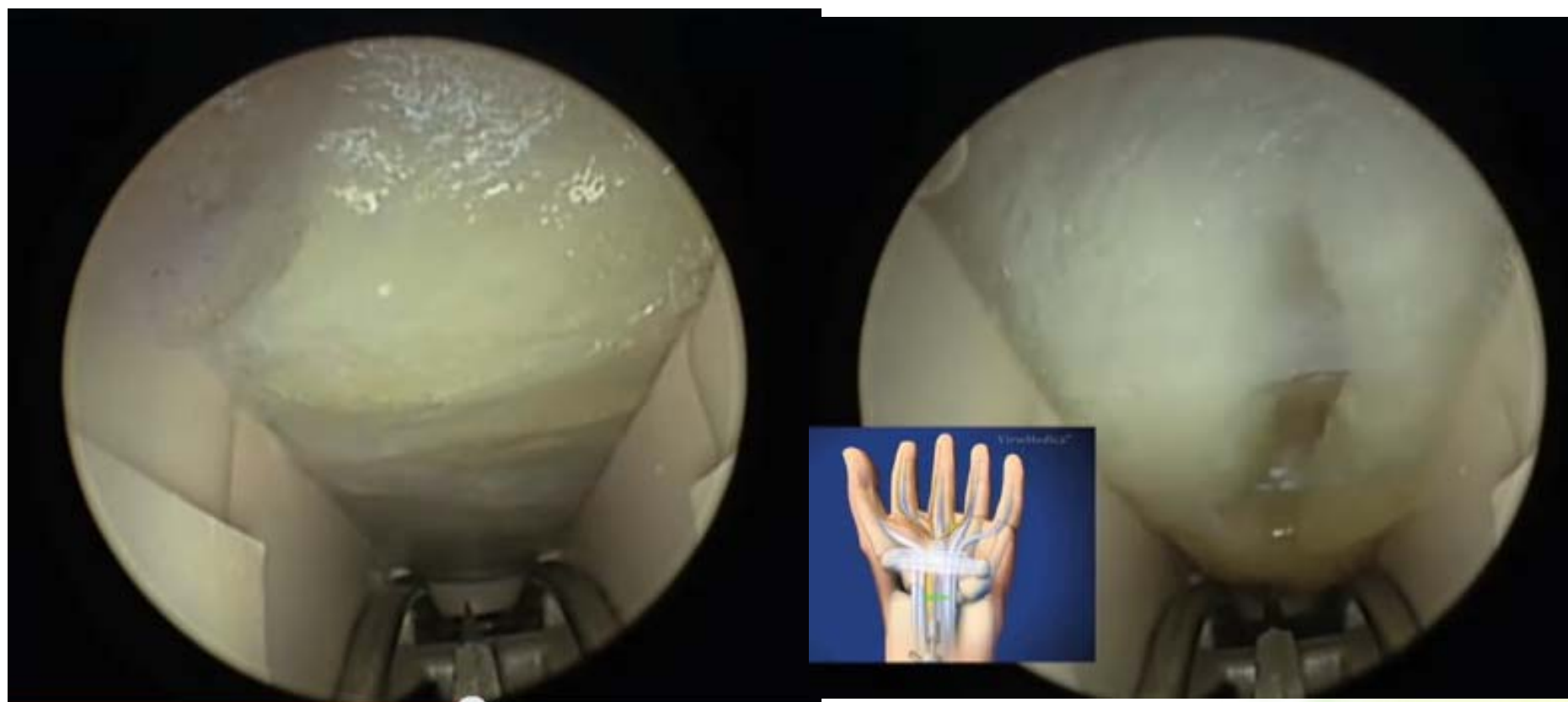


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## Case 2

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- Edward is a 29 year old plumber who presents 1 week after an injury to his right hand sustained while at work. He has a non-painful deformity of his middle finger

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# Question 1

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**Which of the following clinical findings would be most consistent with a diagnosis of mallet finger:**

A. significant functional disability

**B. inability to actively extend the distal interphalangeal joint**

C. significant bruising, swelling and tenderness over the joint involved

D. inability to correct deformity with passive movement toward full extension

E. flexion deformity of the proximal interphalangeal joint.

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## Question 2

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**Clinical findings in Edward confirm a likely mallet finger injury. True or False**

A. if presentation is delayed for 1 month after injury, splinting will not be successful and long term finger deformity is likely

**False**

B. the most likely mechanism of injury is forced extension of a flexed finger

**False (Forced flexion of an extended DIP)**

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## Question 2

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C. bony involvement reportedly occurs in more than half of these patient

False

D. plain X-ray is mandated in all patients presenting with mallet finger

True

E. approximately two-thirds of mallet finger injuries occur in the nondominant hand

False

## Question 3

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**An X-ray of Edward's hand shows no bony involvement. You treat the injury using an extension immobilisation splint.**

**True or False**

A. Edward is able to continue his sporting pursuits, as long as he removes the splint before the activity and then reapplies the splint immediately after

**False**

B. the 'Stack' splint has been found to have significantly improved outcomes compared with other splints for mallet finger

**True**

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## Question 3

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C. any flexion during the 8 week treatment period requires the period of splinting to restart from zero

**False**

D. splints should immobilise both the distal and proximal interphalangeal joints

**False - Must start PIP movement as soon as possible**

E. the splint should be used full time for 4 weeks, and then only at night for another 4 weeks.

**False - Full time for 6 weeks then night for 2-4 weeks depending on lag**

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## Question 4

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Edward returns following 8 weeks of splinting. Unfortunately there is ongoing flexion deformity at the distal interphalangeal joint. You consider referral to a hand surgeon. All of the following features are indications for surgical referral.

True or False:

A. absence of full passive extension of the joint

True

B. inability to reduce an avulsed segment

False - unreduced fragment can still be managed without surgery

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## Question 4

C. injuries with volar subluxation of the distal phalanx

True - Subluxation is an absolute indication for surgery

D. failure of appropriate conservative management (eg. splinting)

True

E. involvement of an avulsion fracture to greater than 10% of the articular surface.

True - more than 30% and >2mm gap



## Case 3

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Shane is 37 years old and was playing touch footy when he “jammed” his left ring finger against the ball today. There is swelling of the PIP joint and pain with movement



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# Question 1

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**Which statement about hand injuries is correct:**

A. Buddy taping of the phalanges is useful for immediate immobilisation

**False - can cause rotation of fracture fragments**

B. Follow up X-rays are recommended 1 week after most hand injuries

**True**

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# Question 1

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C. Hand fractures are seldom prone to displacement

False

D. X-ray evidence of intra-articular involvement is always an indication for referral

True - Intra-articular injuries need surgical review

E. Rotational deformities are best assessed radiologically.

False - Best assessed clinically

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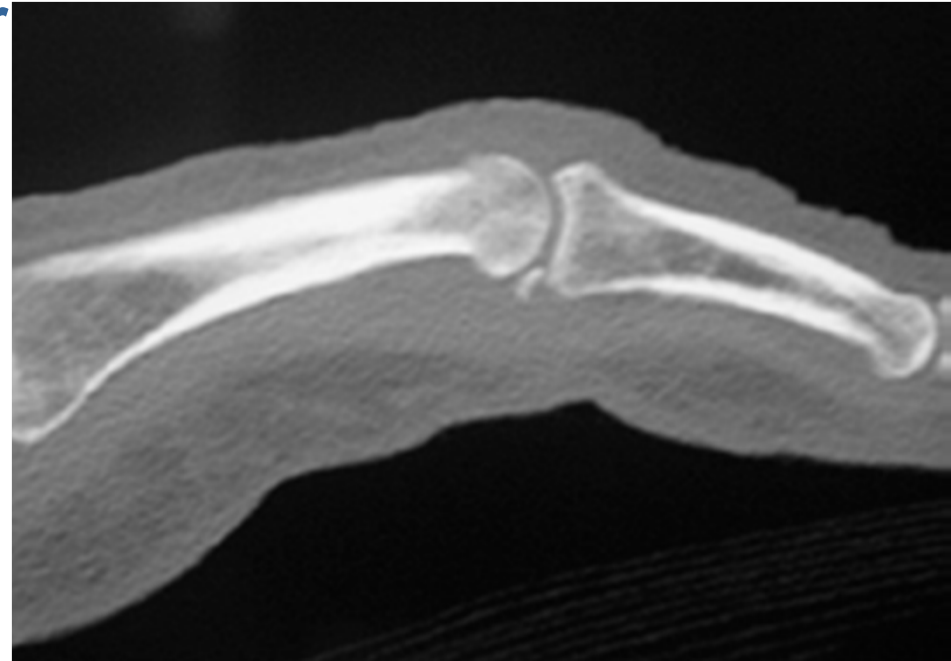
## Question 2

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This X-ray of Shane's finger shows:

- A. intra-articular fragment
- B. sesamoid bone
- C. volar plate avulsion fracture**
- D. calcified tendinopathy
- E. mallet fracture at the PIP joint.



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## Question 3

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**Shane has significant swelling and pain, which eased on immobilisation. What would you do next:**

A. assess for dislocation with active movements, referral for repair may be required

**True**

B. assess for rotational deformity, early mobilisation may be required

**True**

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## Question 3

C. buddy tape the finger till pain-free

False - extended splinting in extension is not ideal

D. immobilise of the hand in the 'safe position' for 1–3 weeks

True

E. splint in slight flexion for 1 week and repeat X-ray.

True - Safe to immobilise in flexion to avoid dorsal distraction force.

## Question 3

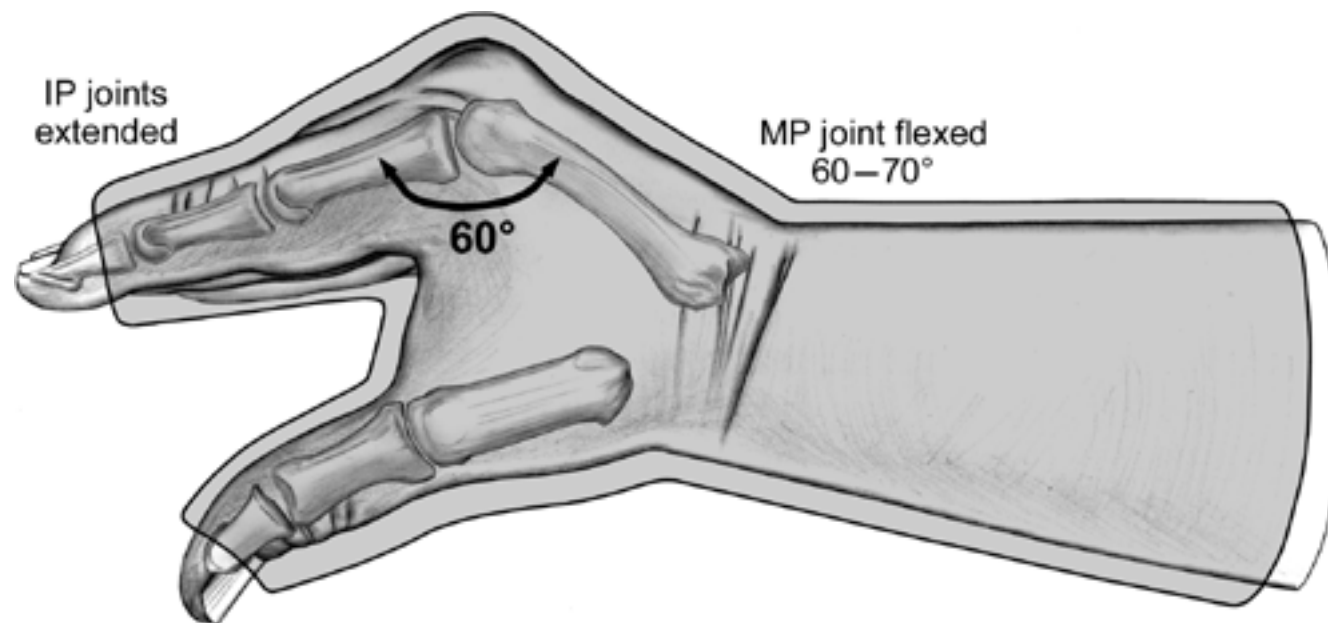
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### Position of safe immobilisation



## Question 4

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**Which statement regarding tendon injuries is correct:**

A. complete rupture of the extensor digitorum will result in the Boutonnière deformity

False - injury to central slip attachment at PIP. Needs PIP flexion and DIP extension

B. injury to the extensor tendon at the PIP requires immediate referral to a hand surgeon

True - tendon injuries should be reviewed early

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## Question 4

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C. splinting of the tendon injury must cease at 6 weeks so that active rehabilitation can begin

False

D. suspicion of flexor tendon injury should initiate X-rays and immediate referral to a hand surgeon

True

E. tendon lacerations are suggested by limitation of movement despite local anaesthetic infiltration.

True

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# References

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Thank you for your attention.

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