

# Orthopaedic SAQs

Emergency Medicine Fellowship Program





## How to use this book:

### 1) Complete SAQs

- < 3 months until exam: Exam conditions – focus on clear answers ‘to time’
- 3-6 months until exam: Transition towards exam conditions
- > 6 months until exam: Open book is ok, ‘focus on good answers and developing knowledge acquisition

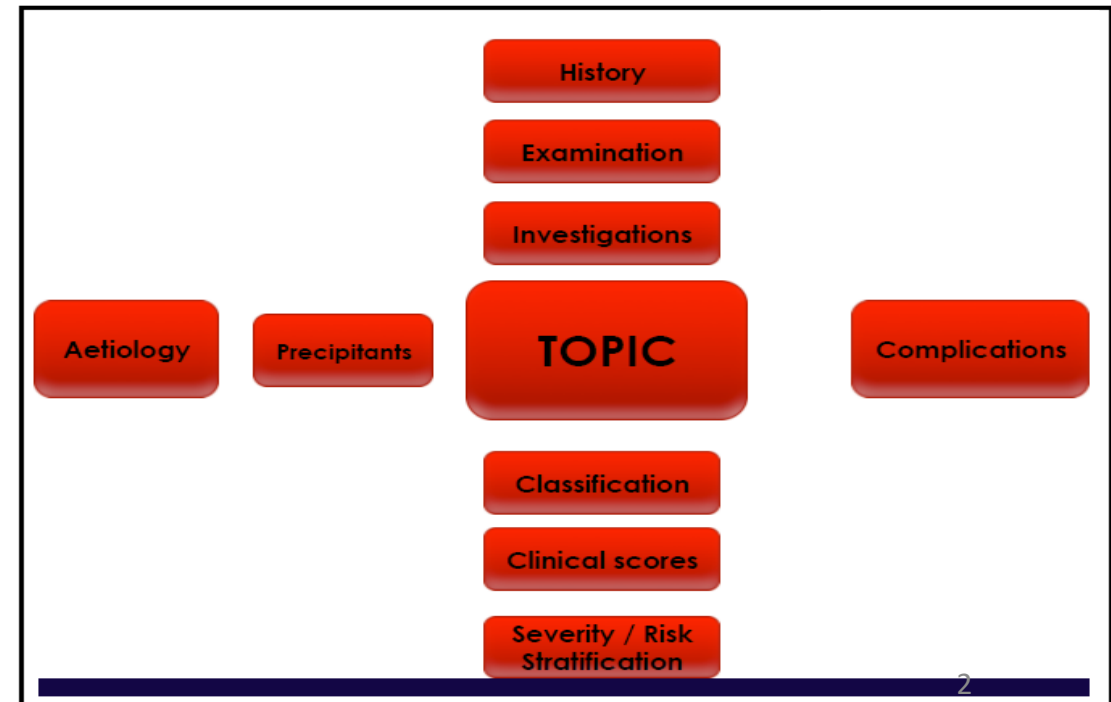
### 2) Read and study around SAQ

- Use each SAQ as motivation to study around the individual topic
- Think about the different ways the topic could come up in the SAQ exam (use the topic structure provided by APEM course)

### 3) Write SAQs to further develop this program

- Review syllabus of medical expertise
- Create SAQs relating to topics not covered in this book, please format to be in exam-format, include answers
- This will help further develop this program as well as help you think like an examiner
- Return to [ben.shepherd86@gmail.com](mailto:ben.shepherd86@gmail.com)

ALL THE BEST!



#### 4.8 Orthopaedic and Hand

a) General principles of fracture management T Ex

b) Paediatric considerations in orthopaedics T H

- i) Salter-Harris classification T H
- ii) Injuries about the elbow DIS H
- iii) The child with a limp DIS H
- iv) Bone dysplasia DIS G
- v) Connective tissue syndrome DIS G
- vi) Inflammatory arthritis DIS H
- vii) Injury rehabilitation T G
- viii) Metabolic bone abnormalities DIS G
- ix) Osgood/Schlatter disease DIS H
- x) Perthe's disease DIS H
- xi) Slipped capital femoral epiphysis DIS H
- xii) Transient synovitis DIS H
- xiii) Developmental hip dislocation DIS G

c) Casting techniques P Ex

- i) Short arm POP P Ex
- ii) Long arm POP P Ex
- iii) Short arm backslab P Ex
- iv) Scaphoid POP P Ex
- v) Bennett's fracture POP P Ex
- vi) Volar splint P Ex
- vii) U Slab P Ex
- viii) Short leg POP P Ex
- ix) Long leg cylinder P Ex

d) Splintage techniques including splintage procedures P Ex

- i) Application of a broad arm sling P Ex
- ii) Application of a collar and cuff P Ex
- iii) Application of a figure-of-8 bandaging P Ex
- iv) Application of a knee immobiliser P Ex
- v) Application of a Donway/ Hare splint P Ex
- vi) Application of a Thomas splint P Ex
- vii) Pelvic stabilisation techniques P Ex

e) Fractures DIS H

- i) Clavicle DIS H
- ii) Scapula DIS H
- iii) Proximal humerus DIS H
- iv) Elbow DIS H
- v) Forearm bones DIS H
- vi) Wrist DIS H
- vii) Carpal bones DIS H
- viii) Spine DIS H
- ix) Pelvis and hip
  - i. Pelvic fractures DIS H
  - ii. Sacral fractures DIS H
  - iii. Coccygeal fractures DIS H
  - iv. Femoral neck fractures DIS H
- x) Hip and femur
  - i. Femoral shaft fractures DIS H
  - ii. Supracondylar fractures DIS H

iii. Condylar fractures DIS H

iv. Fractured patella DIS H

xi) Tibia and fibula DIS H

xii) Ankle DIS H

i. Classification of ankle fractures T H

xiii) Foot

i. Talar fractures DIS H

ii. Calcaneal fractures DIS H

iii. Tarsal bone fractures DIS H

iv. Metatarsal fractures DIS H

v. Phalangeal fractures DIS H

f) Dislocations

- i) Shoulder DIS Ex
- ii) Acromioclavicular joint DIS H
- iii) Elbow DIS H
- iv) Pulled elbow DIS Ex
- v) Carpal–metacarpal bones DIS H
- vi) Phalanges DIS H
- vii) Cervical spine
  - i. Atlantoaxial DIS H
  - ii. Facet joint DIS H
- viii) Hip DIS H

ix) Knee DIS H

x) Patella DIS Ex

xi) Ankle DIS H

xii) Foot DIS H

xiii) Tarsal DIS H

xiv) Metatarsal DIS H

xv) Phalangeal DIS H

g) Soft tissues

- i) Shoulder
  - i. Rotator cuff tears DIS G
  - ii. Bursitis DIS G
  - iii. Tendinitis DIS G
- ii) Elbow
  - i. Bursitis DIS H
  - ii. Tendinitis DIS G
- iii) Knee
  - i. Bursitis DIS H
  - ii. Ligament injury DIS H
  - iii. Cruciate injury DIS H
  - iv. Meniscal injury DIS H
  - v. Bakers cyst DIS H
- iv) Ankle
  - i. Ligament injury DIS H
- v) Foot
  - i. Foot injury DIS H

h) Hand injuries

- i) Metacarpal fractures/dislocations DIS H
- ii) Phalangeal fractures/dislocations DIS H
- iii) Lacerations DIS H
- iv) Nail injuries DIS H

v) Extensor tendon injuries DIS H

vi) Mallet finger DIS H

vii) Boutonniere deformity DIS H

viii) Other DIS H

ix) Flexor tendon injuries DIS H

x) Infections

i. Paronychia DIS H

ii. Infective tenosynovitis DIS H

iii. Other DIS H

xi) Foreign bodies DIS H

xii) Amputations DIS H

xiii) Nerve injuries DIS H

xiv) High pressure injection injuries DIS H

xv) Crush injury DIS H

i) Overuse syndromes DIS H

j) Osteomyelitis DIS H

k) Septic arthritis DIS H

l) Complex regional pain syndrome type 1 (Sudeck's atrophy) DIS G

#### COLUMN "LO" – CATEGORIES OF LEARNING OBJECTIVES

DIS - Diseases/Injuries/Symptoms	D - Pharmacological & toxicological agents	Ex - Expert
E - Physical Examination	P - Procedures	H - High
I - Investigations	Eq - Equipment	G - General
M - Medical Interventions	T - Theories	
	S - Systems	
	NCI - Non-clinical/clinical interface	

#### COLUMN "LP" – LEVELS OF PRACTICE



A 32 year old male presents following a human bite to his metacarpophalangeal joint, sustained in an altercation 24 hours earlier

a) List four (4) organisms that may lead to acute infection in this patient . (4 marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

b) Complete the table below with your antibiotic preference (assuming no allergies) and dosing for this patient's wound (4 marks)

	Antibiotic	Dose
1		
2		

c) List four (4) indications for semi urgent (< 24 hrs) surgical intervention. (4 marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**A 20yo male attends with a grossly swollen painful hand from a punching injury at 36 hours. There is broken skin over the 3<sup>rd</sup> MCP joint.**

•What complications may arise from this injury? (20%)

•Outline your examination (20%)

•Given the appearance of the hand shown, what investigations would you request, assuming no comorbidities and that this is an isolated injury? (20%)

•What are the indications for admission? (20%)



A 22 year old man presents with a hand injury after coming off a motorbike. He is complaining of pain in his left wrist and has no other injuries.

An xray is taken and is shown below.



1. Describe his xray giving three (3) relevant findings.

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2. List 3 short term and 3 long term complications of this injury.

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3. Describe four (4) steps in your management.

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An 8yo boy presents to your tertiary ED following a fall from a trampoline.

His 2 X-rays are shown in PROPS Booklet, Page 5 .

a) State four (4) abnormal radiological findings on the two X-rays (4 marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

b) State four (4) immediate management priorities for this patient (4 marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_





- b) List four (4) potential acute complications from this injury. State one (1) finding on examination (or clinical finding) that would support each complication. (8 marks)

	<b>Acute complication</b>	<b>Assessment</b>
<b>1</b>		
<b>2</b>		
<b>3</b>		
<b>4</b>		

A 28 year-old man fell off his snowboard, landing on his outstretched left hand. He presented to the local clinic, where x-rays of the injured limb were taken . He was transferred to your ED.

**His Xray is shown in PROPS booklet ; page 10 .**

a ) State 5 key descriptors of this patient's injuries, as shown on x-rays (5 marks)

1. Fracture pattern \_\_\_\_\_

\_\_\_\_\_

2. Fracture site \_\_\_\_\_

\_\_\_\_\_

3. Boney displacement \_\_\_\_\_

\_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_



b ) State the summary of this injury AND the implications for treatment.(2 marks)

1. Summary:

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2. Implications for treatment:

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c ) Complete the following table about wrist fractures in adults. Assume these are isolated injuries..  
(diagrams will be impossible to mark as many will be equivocal) (12 marks)

Injury Type / Name	Typical mechanism(s) of injury one (1) for each	Fracture(s) Description as seen on x-ray two (2) for each
Colles		
Smith		
Dorsal Barton		
Volar Barton		



A 40 year old female has fallen from her bicycle and sustained the injury shown in the radiographs. There are no other injuries. Her vital signs are normal and she has no significant past medical history.

Her X-rays are below. There are two (2) images.



i. List four (4) features of these images.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

\_\_\_\_\_/4

ii. List four (4) early complications that would require urgent intervention.

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

\_\_\_\_\_/4

iii. List four (4) late complications of this injury.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

\_\_\_\_\_/4

A 54 year old man is brought to your emergency department after sustaining a low-speed motorbike accident. His only injury after his secondary survey is a painful, deformed right wrist. These are his X-rays.





i. List three (3) abnormalities on these X-rays.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

\_\_\_\_ / 3

iii. List three (3) elements of informed consent.

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

ii. A temporising reduction is to be performed in the emergency department. List five (5) treatments including doses to facilitate this procedure.

	Treatment	Drug dose
1		
2		
3		
4		
5		

A 35 yr old male presents to your Emergency Department following a motorbike accident. he has an isolated right wrist injury.

a. List 4 abnormalities seen on his x-rays (4 Marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

b. list 2 relevant negatives (2 Marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

c. List 8 complications associated with this injury (4 Marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_

7. \_\_\_\_\_

8. \_\_\_\_\_



A 68 yr old female presents to your Emergency Department following a fall. She complains of a painful left wrist. You have been asked by the orthopaedic team to manipulation and plaster this injury in the Emergency Department.

a. List 6 positive findings on the patient's wrist x-ray (3 Marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

b. List 2 negative findings on the patient's wrist x-ray (1 Mark)

1. \_\_\_\_\_
2. \_\_\_\_\_

c. List 6 factors that would positively influence your decision to perform the manipulation in the Emergency Department (3 Marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

d. List 6 factors that would negatively influence your decision to perform the manipulation in the Emergency Department (3 Marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_





A 34 yr old male presents to your Emergency Department following a fall off a bicycle. He complains of a painful shoulder.

a. List the most important positive and negative finding on the patient's x-ray (1 Mark)

Positive: \_\_\_\_\_

Negative: \_\_\_\_\_

b. List 4 key components of the clinical exam in this patient (4 Marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

c. List 6 techniques for reducing a shoulder dislocation (3 Marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

5. \_\_\_\_\_

6. \_\_\_\_\_



d. The patient's post reduction x-ray reveals a Bankart lesion and Hill-Sach's deformity. Define these abnormalities (2 Marks)

Bankart Lesion: \_\_\_\_\_

\_\_\_\_\_

Hill-Sach's Deformity: \_\_\_\_\_

\_\_\_\_\_

A 16 year old male presents after falling from his push-bike. He has a sore shoulder but no other injuries.



1. Describe the injury seen in the X-Ray (1 mark).

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2. List 4 complications for each of the types of clavicular injury in the table (4 marks).

Posterior sterno-clavicular dislocation	Mid-shaft clavicle fracture

3. List 3 absolute & 3 relative indications for operative fixation of mid-shaft clavicle fractures. (3 marks)

Absolute	Relative

4. List 4 complications of ORIF for a displaced mid-shaft clavicle fracture (2 marks).

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

A 60 yo woman presents with severe wrist pain after a fall.  
Her imagines are shown in **PROPS BOKLET ; PAGE 11.**

a) List six (6) bone abnormalities on these X-rays. (6 marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

b) With regards to distal radius fractures , list four (4) Xray findings that indicate need for operative management (4 marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

c) State the role of CT wrist in evaluating distal radius fractures. (2 marks)

1. \_\_\_\_\_
2. \_\_\_\_\_





A 6 year-old boy is brought in to your Emergency Department by his parents after a fall onto his outstretched hand with hyperextension at the elbow.

The child's X-rays are shown in **PROPS BOOKLET; PAGE 14**.

a) State three (3) abnormalities in his X-rays. (2 marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

a) List one (1) classification method for the type of injury that is depicted, which view the method is based on and of which bone. (3 mark).

Classification \_\_\_\_\_

View \_\_\_\_\_

Bone \_\_\_\_\_



b) List the three (3) classification types of this injury and state a short description for each (6 marks)

	<b>Class</b>	<b>Description</b>
<b>1</b>		
<b>2</b>		
<b>3</b>		

c) List four (4) indications for urgent orthopaedic referral in this injury. (4 marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

d) List four (4) potential complications of this injury. (4 marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

A four-year-old girl presents to the Emergency Department with an isolated Left Elbow injury after falling 2 metres from a climbing frame in a local park. She is in severe pain and refusing to move her arm.

1. Describe how you would manage her pain giving doses and routes of drugs. (4 marks)

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\*See image on [page 24](#) in separate book\*

2. Describe **four** abnormalities shown. (4 marks)

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_

(4) \_\_\_\_\_

3. List two immediate / early complications of her injury. (2 marks)

(1) \_\_\_\_\_

(2) \_\_\_\_\_



A 4 year old boy has been brought to the ED after falling off a couch at home. He has a painful right elbow.

His elbow x-ray is provided in the **PROPS BOOKLET**.

1. List 3 abnormalities in the x-ray.

(3 marks)

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2. Classify the radiological injury.

(1 mark)

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3. List the secondary ossification centres of the elbow in the appropriate chronological order of their appearance.

(6 marks)

1) \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

4) \_\_\_\_\_

5) \_\_\_\_\_

6) \_\_\_\_\_



4. List the details of 3 steps in your management of this patient.

(3 marks)

1) \_\_\_\_\_

\_\_\_\_\_

2) \_\_\_\_\_

\_\_\_\_\_

3) \_\_\_\_\_

\_\_\_\_\_

A 7 year old boy presents to your ED with an injury to his right elbow after a fall. The elbow is obviously deformed and swollen.

i. What are the immediate issues that need to be addressed (3 marks)

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ii. Describe the X-ray findings (3 marks)

**AN XRAY IS SHOWN IN THE PROPS BOOKLET, PAGE 11**

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iii. List 4 potential implications of this injury (4 marks)

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iv. Describe the course of the ulnar nerve at the elbow (2 marks) and list the forearm and hand muscles potentially affected by ulnar nerve injury (3 marks)

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A 45-year-old man presents post falling of a pushbike and hitting shoulder into road guardrail after sliding. He has left shoulder pain and no other injuries.

**\*See images on pages 7 & 8 in separate book\***

1. Describe the attached x-rays and your diagnosis. (2 marks)

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2. Describe your method of managing this injury. (4 marks)

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3. In what position would you immobilise this joint once the injury has been managed in ED? (2 marks)

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4. Name the COMMON complications of this injury. (2 marks)

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5. Name 2 UNCOMMON complications that can occur. (2 marks)

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A 7yr girl presents following a fall onto her outstretched hand and is reluctant to bend her elbow due to pain.



1. Describe 4 key features of this x-ray and state diagnosis (4 marks).

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

Diagnosis: \_\_\_\_\_

2. What are 6 potential complications of this injury? (3 marks).

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_

3. What are 6 indications for operative reduction of this type of injury? (3 marks).

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_
- vi. \_\_\_\_\_

A young man has fallen onto his left hand, which is swollen and generally tender. Neurovascular status is intact.

i. Interpret the Xray (3 marks)

**AN XRAY IS SHOWN IN THE PROPS BOOKLET, PAGE 11**

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ii. Outline 4 priorities in management (4 marks)

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iii. List 3 long term sequelae (3 marks)

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iv. The orthopaedic registrar requests your RMO to complete the consent for ORIF. Outline your response (3 marks)

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SAQ16. A 10 year old girl is brought to your emergency department with a sore arm after falling off a wall. On examination she has marked swelling and pain in the Right elbow and a graze on her left forehead.

Her lateral elbow is xray is shown below.



- a) List three features which are required to “clinically clear the neck” in the absence of radiological imaging. (3 marks)

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- b) Name 2 potential neurological complications of this injury and how you would test for each. (4 marks)

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- c) Name 3 other possible complications of this patients elbow injury. (3 marks)

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A 55 year old man with a history of diabetes mellitus presents with a one day history of increasing right knee pain.

i. Complete the reference table below regarding expected joint aspirate findings.

Lab findings	Normal	Infective	Inflammatory	Non-inflammatory
WBC/microliter	<200			
Neutrophils (%)	<25			
Microscopy	No abnormal features			
Causes (list 1 for each)	N/A			

ii. List three (3) management options for this patient you undertake in the emergency department, with an example and rationale for each.

	Management option	Example	Rationale
1			
2			
3			



A 50 year old man presents from home after an injury to his right knee with a circular saw whilst trimming a hedge. He is previously well with no medical problems, is on no medications and has an allergy to penicillin. He has no other injuries, and has presented via private vehicle.

i. Describe the clinical photograph giving three (3) positive and two (2) relevant negative findings.



1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

4 \_\_\_\_\_

5 \_\_\_\_\_

ii. Describe six (6) features of assessment relevant to this presentation. Give a justification for each.

	Assessment finding	Justification
1		
2		
3		
4		
5		
6		

iii. List three (3) structures that may be injured.

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

A 50 year old man presents from home after an injury to his right knee with a circular saw whilst trimming a hedge.

i. List two (2) major abnormalities on the x-rays.

1 \_\_\_\_\_

2 \_\_\_\_\_

ii. List five (5) essential management steps you would institute in the Emergency Department. Provide details.

	Management	Details
1		
2		
3		
4		
5		



The orthopaedic registrar advises you to do a washout, suture and discharge the patient. He will see them in outpatient clinic next week.

iii. Describe your response

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

An 84 year old man has a simple mechanical fall and is brought to your ED with a painful right knee. This is the only injury resulting from his fall.

He is normally well, on no medication, and lives alone independently.

A AP and lateral X-rays of his right knee are performed and are shown in the props booklet pages 6 and 7

i. List four (4) descriptive features of the injury shown. (4 marks)

- 1 \_\_\_\_\_
- 2 \_\_\_\_\_
- 3 \_\_\_\_\_
- 4 \_\_\_\_\_

ii. List three (3) neurovascular structures that may be compromised in this injury. For each structure state a clinical finding that would support compromise of the structure. (6 marks)

	Structure (3 marks)	Supportive clinical finding (3 marks)
1		
2		
3		



- iii. List five (5) methods of providing analgesia for this injury. Provide details including drugs doses and routes where appropriate. (10 marks)

	Analgesia method (5 marks)	Details (5 marks)
1		
2		
3		
4		
5		

A 78 yo female with PMH : Left total knee replacement, AF and GORD , presents after slipping over in the supermarket. She is very distressed. Ambulance treatment en route includes Normal Saline 500 mL, Air-splint to left leg and fentanyl 250 mcg . her vital signs on arrival:

BP 180/95 mmHg HR 110 bpm  
 Temp 36.5 °C GCS 14 (E3, V5, M6)  
 RR 12 breaths/min Sat 96% on 6L/min nasal prong

Her Xray is available in PROPS booklet ; page 6.

1. List five (5) abnormalities on the Xray (5 marks)

1. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
2. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
3. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
4. \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
5. \_\_\_\_\_



2. List four (4) options that you would utilise for pain management in this patient. (4 marks)

1. \_\_\_\_\_
- \_\_\_\_\_
2. \_\_\_\_\_
- \_\_\_\_\_
3. \_\_\_\_\_
- \_\_\_\_\_

3. List five (5) investigations that you would request for this patient . State one (1) justification for each choice. (5 marks)

	Investigation	Justification
1		
2		
3		
4		
5		

A 2 year old boy is brought to ED after jumping from a bed. He is refusing to weight bear on his left leg. An X-ray is performed and shown in PROPS BOOKLET ; Page 7.

a) State three (3) descriptive features of your abnormal finding. (3 marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

b) What is the diagnosis? (1 mark)

\_\_\_\_\_





c) State four (4) methods to manage this patient's pain. (4 marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

d) What is your disposition plan? (1 mark)

\_\_\_\_\_

e) List three (3) potential complications associated with this injury. (3 Marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

A 30 yo man presents after accidentally stepping off the back of a truck 1.5m above ground level. He is complaint of severe knee pain. His BP 160/80 mmHg and HR 110 bpm . His X-rays are available in PROPS BOOKLET ; page 10.

a) List three (3) abnormalities on this X-rays (3 marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

b) What is your diagnosis? (1 mark)

\_\_\_\_\_

c) List four (4) immediate (early) complications of this injury. (4 marks)

1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_



d) List four (4) Imaging options. State one (1) justification for each choice. (4 marks)

	<b>Imaging</b>	<b>Justification</b>
1		
2		
3		
4		

A 20 year old female presents to your ED after injuring her right lower limb in a soccer tackle.

Her X-rays is shown in **PROPS BOOKLET ; PAGE 9.**

a) List four (4) abnormal findings in her X-ray (4 Marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

The abnormality is reduced and immobilised in ED. Your registrar is concerned about compartment syndrome.

b) List four (4) clinical features of this complication (4 Marks)

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_



c) List two (2) methods to assist in confirming the diagnosis of compartment syndrome. List the normal ranges for each method.(4 marks)

	Method	Abnormal range
1		
2		

A 51 year old lady presented having been seen in your ED 3 days ago after an MVA. A senior registrar reviewed her and a full trauma assessment was performed. No major injuries were found. She complained of foot pain prior to discharge and an x-ray was performed. The discharge letter states no fracture, and she was advised to treat this as a sprain. She represents with ongoing pain and is now unable to weight bear.

**AN XRAY OF THE FOOT IS SHOWN IN THE PROPS BOOKLET, PAGE 3**

- i. Describe the main abnormality in this x-ray and the likely diagnosis (2 marks)

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- ii. List 3 fractures which can occur in association with this injury (3 marks)

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- iii. The patient is angry about the missed injury and states she is going to make a complaint. Briefly outline how you would address this complaint (6 marks)

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A 25-year-old gym owner presents to ED with a left lower leg injury after being tackled at football training. Impact was lateral with the opponent landing on him. He has intense pain and swelling of the lower leg. There is no disruption of skin. The initial X rays are provided.

**\*See images on pages 15 – 20 in separate book\***

1. List the abnormalities evident on the images. (5 marks)

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1. What are the potential acute complications with this injury? (2 marks)

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2. List 3 methods of providing analgesia in this case. (3 marks)

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_

3. List 3 methods of assessing for tissue compartment syndrome. (3 marks)

(1) \_\_\_\_\_

(2) \_\_\_\_\_

(3) \_\_\_\_\_







You are asked by the nurses to chart analgesia for a patient, seen by a colleague on the previous shift, admitted under orthopaedics and ready for the ward. You were not given a comprehensive handover and so review the notes:

42 year old man      Jetski injury. Jumped into air off wave and landed with heavy impact  
 Hyperextension injury to the left knee, patient reports knee dislocated  
 Subsequent deformity and significant pain

- i. List 4 relevant findings on the Xray (4 marks)

**XRAYS ARE SHOWN IN THE PROPS BOOKLET, PAGES 12-13**

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- ii. Complete the table identifying two potential complications related to this mechanism of injury and how you could assess for each (4 marks)

Complication	Means of assessment

- iii. A long leg cast has been applied and the leg is elevated. The patient is still in extreme pain despite opioid analgesia. List two possible explanations for his ongoing severe pain (2 marks)

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He is started on fentanyl PCA and transferred to the ward. He goes to OT the next day and the ED director, receives a call from the orthopaedic consultant advising that the POP backslab applied in ED was found to be a circumferential below knee POP and the patient needed a fasciotomy for compartment syndrome. The orthopaedic team have put in an incident notification.

- iv. List 4 steps involved in managing this incident (4 marks)

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A 57 year old male is referred in by his GP with a hot, tender, painful left knee.

His vitals are as follows:

Pulse 96  
BP 120/70  
Temp 37.6

1. List 5 diagnostic categories and one example of each as a cause for this hot red knee (5 marks)

i. Category: \_\_\_\_\_

Example: \_\_\_\_\_

ii. Category: \_\_\_\_\_

Example: \_\_\_\_\_

iii. Category: \_\_\_\_\_

Example: \_\_\_\_\_

iv. Category: \_\_\_\_\_

Example: \_\_\_\_\_

v. Category: \_\_\_\_\_

Example: \_\_\_\_\_

2. List 5 investigations you might perform and 1 pro and con for each (5 marks).

i. Investigation: \_\_\_\_\_

Pro: \_\_\_\_\_

Con: \_\_\_\_\_

ii. Investigation: \_\_\_\_\_

Pro: \_\_\_\_\_

Con: \_\_\_\_\_

iii. Investigation: \_\_\_\_\_

Pro: \_\_\_\_\_

Con: \_\_\_\_\_

iv. Investigation: \_\_\_\_\_

Pro: \_\_\_\_\_

Con: \_\_\_\_\_

v. Investigation: \_\_\_\_\_

Pro: \_\_\_\_\_

Con: \_\_\_\_\_

A 6 year old boy is brought to the ED after falling from his bunk. He has an isolated leg injury



1. List 2 features of the X-Ray (2 marks).

- i. \_\_\_\_\_
- ii. \_\_\_\_\_

2. Describe 4 ways you would deal with his analgesic requirements. Give specifics (4 marks).

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_

3. Describe in stepwise fashion the details of performing a femoral nerve block. Include doses. (4 marks)

- i. \_\_\_\_\_
- ii. \_\_\_\_\_
- iii. \_\_\_\_\_
- iv. \_\_\_\_\_
- v. \_\_\_\_\_

A 30 year old man presents following a MBA. As he swerved to avoid a car, his right foot impacted the ground with his knee fully extended. His only complaint is of severe right knee pain and swelling.

- i. List 5 relevant findings on the Xray (5 marks)

**XRAYS ARE SHOWN IN THE PROPS BOOKLET, PAGES 6&7**

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- ii. List 3 priorities in management (3 marks)

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- iii. List 4 anatomical structures that are likely to be injured which are not seen on plain Xray (4 marks)

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iv. List 3 specific complications you would look for (3 marks)

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A 23 year old woman presents having fallen 5m off a balcony. She has landed on her feet and is complaining of ankle pain.

1. What are the 3 indications for an ankle X-Ray as described by the Ottawa ankle rules?  
(2 marks)

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

2. What are the 3 indications for a foot X-Ray as described by the Ottawa foot rules?  
(2 marks)

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

3. Describe 2 abnormalities in the X-Rays above (2 marks).

i. \_\_\_\_\_

ii. \_\_\_\_\_

4. List 4 other injuries associated with falls from a height if landing on the feet (4 marks).

i. \_\_\_\_\_

ii. \_\_\_\_\_

iii. \_\_\_\_\_

iv. \_\_\_\_\_





A 40 year old woman presents with symptoms of a common peroneal nerve injury of her left leg following an ankle sprain.

- i. Describe the sensory and motor disturbance features of a common peroneal nerve injury (4 marks)

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- ii. Where is the commonest site of injury (1 mark)

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- iii. List 4 general causes of common peroneal nerve injury other than high ankle sprain (4 marks)

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- iv. How is this peripheral nerve lesion differentiated from an L5 radiculopathy (1 mark)

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3. A 25 year old woman presents to ED after a large wooden plank fell on her left foot. She describes pain in the mid-foot region.

a. What are the three components of the Ottawa foot rules (OFR's)?

b. What are the three exclusion criteria for the application of the OFR's?

c. Foot x-rays are taken and reveal an isolated un-displaced fracture of tuberosity of the navicular bone. What are 5 important features of your subsequent management?