

ANKLE EXAMINATION

Learners Guide

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PRE-READING FOR LEARNERS

Please read / watch some of these resources before the session:

[DFTB Ankle Sprains overview](#) - Good and concise overview

[DFTB Minor Ankle Injuries](#)

[DFTB Understanding Ankle Injuries](#)

Ankle anatomy:

[Orthobullets page](#)

Ankle examination:

[Physio-pedia site](#)

[Stanford Medicine 25 Video for Ankle & Foot examination](#)

Note: This will not be a comprehensive XRay interpretation session. If you wish to refresh your ankle XRay interpretation skills, you can check these resources:

[DFTB Ankle XRay interpretation](#)

[Radiopaedia Ankle Radiograph](#)

SCENARIO DISCUSSIONS

CLINICAL SCENARIO 1

Ellen, a 15-year-old girl, presents to the Paediatric ED with her father, complaining of a painful and swollen right ankle. The nurse asks you if she should request an XRay and therefore you review her briefly in triage. The patient tells you that her ankle “twisted” and then she fell on the ground, while playing netball at school earlier on in the day. She demonstrates an inversion mechanism with her other foot. She has walked into her room, weight bearing on both feet, with a slight limp. On inspection, her ankle looks moderately oedematous. On palpation, there is tenderness in the malleolar zone, mostly anterior to the lateral malleolus. There is no bruising and no significant tenderness in the rest of the midfoot.

- 1. How do you answer the nurse’s question?**
- 2. How would you explain to Ellen and her father your rationale on requesting / not requesting an ankle XRay?**
- 3. How would you assess her injury clinically? What is the most relevant clinical ankle test, given the site of the maximum tenderness and oedema?**
- 4. If your examination does not yield any significant concerns, how will you manage Ellen? Would you give her any ankle support props?**
- 5. She asks when she can get back to playing sport. How do you address this question?**

CLINICAL SCENARIO 2

Noah is a 15-year-old boy that presents to ED stating that he has sprained his right ankle playing football in the afternoon. He is in a semi-professional football team and has had ankle sprains twice before on the same side within the last 18 months. His last injury was 6 months ago, after which he was followed up by physiotherapy. On examination, he has swelling all around his ankle and on examining him, you suspect a CFL and ATFL sprain.

1. What tests have you performed to assess those ligaments?

2. How will you manage Noah now in ED? Discuss your thoughts on the immediate management, further imaging, referral, follow-up.

CLINICAL SCENARIO 3

Sebastian is a 13-year-old seen in A&E after injuring his right ankle during a basketball game. He landed from a jump and collided with another player, twisting his right foot. He comes with significant ankle pain on walking, and swelling around his ankle. He is tender all around the ankle, mostly so anteriorly. The tenderness extends up to the distal tibia and fibula. XRays of his ankle and tib-fib do not show any fractures.

- 1. What is the main injury to be considered?**
- 2. How will you examine clinically?**
- 3. What will you look for in the XRays?**
- 4. How will you manage this kind of injury?**

CLINICAL SCENARIO 4

You have seen Ria in A&E, a 12 year old aspiring gymnast. She had an inversion injury of her right ankle during gymnastics, by landing awkwardly from the vault. Since then she has significant pain on walking. She is mostly tender on the base of the 5th metatarsal, and therefore you request foot XRays. You review the images and don't think there is a fracture. Due to the significant pain, you advise analgesia and give her a walking shoe for a few days.

Next week, you get the dreaded email from your Clinical Lead Consultant, informing you that her XRay was reported by the radiologist as a "pseudo-Jones" fracture. Your consultant informs you that it is not the first time that this kind of fracture gets missed in your department, and suggests that you read on this and deliver a short departmental teaching for everyone's learning.

- 1. What is a pseudo-Jones fracture? And what is the difference with the actual Jones fracture? (who is Jones, anyway? :)**
- 2. Why do you think the fracture was missed on the first instance?**
- 3. How would you manage Ria now?**

QUIZ

Question 1.

Regarding ankle injuries in children and young people, which statement is NOT correct:

- A: Lateral ankle sprains are the commonest types of injury
- B: Ligament sprains are commoner in younger children
- C: Tenderness in the midfoot area and inability to weight bear is an indication for XRays
- D: Most patients with ankle sprains can mobilise early on after the injury

Question 2.

Regarding Grade III ankle sprains, which statement IS correct:

- A: Are unlikely to recur
- B: Require early mobilisation and physiotherapy
- C: Usually require an MRI or USS
- D: The PTFL is the most commonly affected ligament

Question 3

Regarding imaging in ankle injuries, which statement is NOT correct:

- A:** The Ottawa Ankle Rules are not a very accurate tool for use in young patients
- B:** Fractures of the base of the 5th metatarsal can often be missed on XRays
- C:** Syndesmosis injuries can be difficult to diagnose on routine XRays
- D:** MRI is the preferred mode of imaging for suspected ligament ruptures

Question 4

Regarding ankle fractures in children, which statement is NOT correct:

- A:** Salter-Harris I malleolar fractures are easily missed
- B:** Missed Salter-Harris I fibular fractures often lead to long-term compromise of the affected joint
- C:** Further XRay views may be required for some fractures to be identified
- D:** Ankle fractures can be classified in the “Weber classification system”

Take-home messages

- 1 Not all ankle injuries require XRays. Remember the Ottawa Ankle Rules.
- 2 Perform the main ankle examination tests in all ankle injuries
 - don't forget to examine the base of the 5th metatarsal
 - more specific tests may be required depending on the findings
- 3 Remember that significant oedema may give the false impression of a stable ankle
- 4 Ankle sprains are the commonest injuries:
Grades I–III
- 5 Most sprains can return to gentle movement straightaway
 - some require graded rehabilitation
 - know who to refer to, if required
- 6 Know the basics of ankle fractures
 - you can use a cheat sheet [Radiopaedia Ankle Radiograph](#)

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