

# FACIAL TRAUMA

## Learners Guide

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### PRE-READING FOR LEARNERS

Expectation is for the learners to have read the following links prior to the session

<https://dontforgetthebubbles.com/orbital-fractures/>

<https://dontforgetthebubbles.com/facial-bone-x-rays/>

<https://www.rch.org.au/trauma-service/manual/maxillofacial-injury/#toc5->

**Some highly recommended optional extras:**

[www.ncbi.nlm.nih.gov/pmc/articles/PMC4155887/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4155887/)

[www.rcemlearning.co.uk/reference/zygomatic-and-nasal-injury/-1571914174387#f52a6ad3-5ffc](http://www.rcemlearning.co.uk/reference/zygomatic-and-nasal-injury/-1571914174387#f52a6ad3-5ffc)

## CASE 1: NASAL BONE FRACTURES

A 12 year old boy is brought into the department by his father. He was playing a rugby match and during a tackle he received a blow to the face. When questioned, he thinks he was elbowed in the nose. He had epistaxis on the pitch which has since stopped.

**What other questions would you like to ask regarding the history?**

**How would you examine this patient?**

**What investigations and management would be appropriate?**

## CASE 2: MANDIBLE INJURIES

A 6 year old girl is brought in by ambulance after falling off her bike. She has been crying uncontrollably since. The fall was witnessed, she did not lose consciousness and has not vomited. She is holding the left side of her face. Mum reports there was no blood at the scene.

**What is your first action in the management of this patient?**

**What clinical signs might give you a clue that a mandible fracture was present?**

**How would you investigate this injury?**

**What nerve can be damaged in this injury?**

**What follow up is required?**

## CASE 3: ORBITAL FRACTURES

An 8 year old boy is brought into the ED following a blow to the right eye when playing tennis. He is complaining of pain and has been vomiting.

Describe the anatomy of the orbit

**What investigations are appropriate in this case?**

**Why is this patient vomiting, and what other signs or symptoms might you expect?  
If the patient started complaining of severe pain in the affected eye, what might you consider?**

## CASE 4: MAXILLA FRACTURES

A 12 year old boy is brought in by ambulance following a road traffic accident. He was a pedestrian hit by a car moving at approximately 40km/hr. His GCS is 14 and he has obvious severe bleeding facial injuries.

Outline the initial management and stabilisation of this patient

No thoracic, abdominal, pelvic or long bone injuries are detected during the child's primary survey. Imaging of brain, c-spine and facial bones show a frontal subdural haematoma, a Le Fort II fracture and fractured C4.

**What does Le Fort mean?**

**What are the next steps required for this patient?**

## CASE 5: ZYGOMATIC MAXILLARY COMPLEX FRACTURES

A 14 year old girl is brought in by ambulance following a sporting accident. She was playing camogie\* without a helmet and was struck with a hurl (similar to a hockey stick) during a mid air challenge. She received good pre-hospital analgesia by paramedics and is now comfortable. She has significant bruising and a laceration to the left side of her face. You suspect a zygomatic maxillary complex fracture.

\*an Irish sport, sort of the female version of hurling (both Gaelic sports)

**What specific injury pattern would you expect in a zygomatic maxillary complex (ZMC) fracture?**

**What investigations are necessary?**

**What treatment should be instigated in the ED?**

## QUIZ QUESTIONS

### Question 1

**A patient with a mandibular fracture may also complain of:**

- A. Loss of taste
- B. Tingling or loss of sensation of the upper lip
- C. Trismus
- D. Tingling or loss of sensation of the lower lip and chin

### Question 2

**A patient with an obvious deformity to their left zygomatic arch also appears to have a facial droop. This is due to damage of what structure?**

- A. Cranial nerve V
- B. Cranial nerve VI
- C. Cranial nerve VII
- D. Infraorbital nerve

### Question 3

**A blowout fracture will cause inability of:**

- A. Lateral gaze
- B. Upward gaze
- C. Medial gaze
- D. Inferior gaze

## Question 4

Which of the following would require emergent intervention in a nasal fracture

- A. Dorsal swelling
- B. Septal deviation
- C. Septal haematoma
- D. Loss of sense of smell

## Question 5

Open fractures require:

- A. IV antibiotics
- B. Tetanus status assessment
- C. Thorough washout
- D. All of the above

## Question 6

Which of these is NOT part of conservative management of a ZMC fracture

- A. Avoidance of nose blowing
- B. Soft diet
- C. Prophylactic antibiotics
- D. Nasal decongestants

## Question 7

Which fractures of the mandible pose the highest risk of growth disturbance and joint hypomobility?

- A. Condyle
- B. Body
- C. Angle
- D. Ramus



## Take-home messages

- 1 Always use the ABC approach!
- 2 Treat all facial injuries as head injuries and assess for need for further imaging, and give written head injury and concussion advice
- 3 A full examination after appropriate analgesia including sensation and motor function is imperative – look for muscle and nerve entrapment!
- 4 Eye injuries require discussion with ophthalmology and a thorough visual acuity, fields and pupillary examination
- 5 Beware ‘white eye’ blowout fractures and the oculo-cardiac reflex The mainstay of management of paediatric trauma is to avoid secondary damage to the globe and brain, and reduce the risk of growth disturbance and deformity
- 6 Always ask about jaw closing and occlusion – do their teeth feel normal? Don’t forget good conservative management advice – soft diets, avoid nose blowing, decongestants Tetanus, tetanus, tetanus

## REFERENCES

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