MANAGEMENT ALGORITHM FOR HARD TISSUE DENTAL TRAUMA
(Enamel, Dentine and Pulp Injuries)
Based on IADT 2020 Guidelines

Patient presents with traumatic injury to a permanent tooth

INITIAL ASSESSMENT
- History of the injury (time, mechanism, location, medical history)
- Clinical and radiographic examination (including sensibility testing as baseline)
- Assess for associated soft tissue and periodontal injuries
- Exclude root fracture (radiographs from different angles)

HARD TISSUE INJURY IDENTIFIED
Classify the type of fracture

ENAMEL INFRACTION (Enamel crack)
No loss of tooth substance
Craze lines

MANAGEMENT
- No treatment required
- Polish if roughness present

FOLLOW-UP
- Routine review

UNCOMPLICATED CROWN FRACTURE (Enamel only)
Loss of enamel only
No dentine exposed

MANAGEMENT
- Smooth sharp edges
- Consider composite reshaping (aesthetic)

FOLLOW-UP
- Routine review

UNCOMPLICATED CROWN FRACTURE (Enamel and dentine)
Loss of enamel and dentine
No pulp exposure

MANAGEMENT
- Cover exposed dentine (adhesive restoration)
- Consider reattachment if fragment available
- Monitor pulp status

FOLLOW-UP
- Clinical and sensibility tests at 6–8 weeks
- Then 6, 12 months and annually for at least 5 years

COMPLICATED CROWN FRACTURE (Pulp exposure)
Loss of enamel and dentine with pulp exposure

MANAGEMENT
- Partial pulpotomy (preferably) (within 24 hours)
- Direct pulp capping (small exposure)
- Cover with biocompatible material (e.g. calcium silicate)
- Restore (composite or reattach fragment)
- Root canal treatment if pulpal healing not possible

FOLLOW-UP
- Clinical and sensibility tests at 6–8 weeks
- Then 6, 12 months and annually for at least 5 years
- Monitor for signs of pulpal necrosis and periapical pathology

PROVIDE PATIENT INFORMATION
- Explain diagnosis, treatment, prognosis and need for long-term review
- Advise on preventive measures (e.g. mouthguard for at-risk individuals)

MANAGEMENT ALGORITHM FOR DENTAL LUXATION INJURIES

(Concussion, Subluxation, Lateral, Intrusive, Extrusive and Avulsion)

Based on IADT 2020 Guidelines

Patient presents with a traumatised tooth (suspected luxation injury)

INITIAL ASSESSMENT

- History (time, mechanism, medical history)
- Clinical examination: position, mobility, percussion, displacement, soft tissue injuries
- Sensibility testing (baseline)
- Radiographs (periapical from different angles – exclude associated fractures)
- Assess for alveolar bone and soft tissue injuries; check for other dental injuries

CLASSIFY THE TYPE OF LUXATION INJURY

Based on clinical and radiographic findings

CONCUSSION

(Injury to supporting tissues without increased mobility)

Tender to percussion
No increased mobility
No displacement
Normal radiograph

MANAGEMENT

- No active treatment
- Advise soft diet and avoid further trauma

FOLLOW-UP

- Clinical and sensibility test at 2 weeks
- Then 6, 12 months and annually for at least 5 years

SUBLUXATION

(Increased mobility without displacement)

Tender to percussion
Increased mobility
No displacement
Normal radiograph

MANAGEMENT

- No active treatment
- Advise soft diet and avoid further trauma

FOLLOW-UP

- Clinical and sensibility test at 2 weeks
- Then 6, 12 months and annually for at least 5 years

LATERAL LUXATION

(Displacement in any direction)

Displacement (usually palatal/lingual)
Increased mobility
Often tender
Radiograph: PDL widening ± alveolar fracture

MANAGEMENT

- Reposition gently to correct position
- Flexible splint for 4 weeks
- Check and manage associated injuries (e.g. alveolar fracture)
- Consider antibiotics and tetanus update

FOLLOW-UP

- Clinical and sensibility test at 2 weeks (splint removal)
- Then 6, 12 months and annually for at least 5 years (monitor for pulpal necrosis and root resorption)

INTRUSIVE LUXATION

(Axial displacement into alveolar bone)

Tooth appears shortened or not visible
Often tender
Radiograph: tooth displaced apically

MANAGEMENT

Mature permanent tooth:

- Allow spontaneous eruption (monitor)
- If no movement after 2–4 weeks: orthodontic or surgical repositioning

Immature permanent tooth:

- Allow spontaneous eruption (preferred)
- Consider orthodontic repositioning if required

FOLLOW-UP

- Clinical and sensibility tests at 4 weeks
- Then 6, 12 months and annually for at least 5 years (monitor for pulpal necrosis, root resorption and ankylosis)

EXTRUSIVE LUXATION

(Partial displacement out of socket)

Tooth appears elongated
Increased mobility
Often tender
Radiograph: partial displacement

MANAGEMENT

- Gently reposition to original position
- Flexible splint for 2 weeks
- Check for associated injuries
- Consider antibiotics and tetanus update

FOLLOW-UP

- Clinical and sensibility test at 2 weeks (splint removal)
- Then 6, 12 months and annually for at least 5 years

AVULSION

(Complete displacement out of socket)

Tooth completely out of socket

MANAGEMENT

Immediate action:

- Handle by crown
- Rinse gently if dirty (no scrubbing)
- Replant immediately (if possible, within 60 min)
- If delayed: store in cold milk, HBSS or saline
- Flexible splint for 2 weeks
- Antibiotics and tetanus update
- Assess need for root canal treatment (usually within 7–14 days)

FOLLOW-UP

- Clinical and sensibility tests at 2 weeks
- Then 6, 12 months and annually for at least 5 years (monitor for replacement resorption)

GENERAL CONSIDERATIONS AND PATIENT INFORMATION

- Check and manage associated injuries (soft tissue, alveolar bone, other teeth)
- Provide verbal and written instructions (oral hygiene, diet, avoid further trauma)
- Discuss prognosis, potential complications (pulpal necrosis, root resorption, ankylosis)
- Long-term review is essential (minimum 5 years)
- Use a flexible splint and avoid rigid splints for extended periods

Based on IADT 2020 Guidelines