Dental Injuries, Traumatic

Traumatic dental injuries (TDI) account for 5% of all injuries to children and adults. Dental trauma to the primary teeth can affect developing permanent teeth. TDIs are split into two categories: (1) Luxations are TDIs that move a tooth out of place, including avulsions where the tooth is completely out of socket and (2) Fractures occur when a tooth is broken at the crown or root level and may be complicated (exposed nerve) or uncomplicated (nerve is not exposed). Multiple injuries can occur at the same time. Concomitant soft tissue injuries may also be present.

**ASSESSMENT**

Perform a standard history and physical exam (HPE) focused on the method and timing of the dental injury. Rule out concussion of any type. Confirm tetanus status and rule out child abuse (trauma to head/neck region). Determine if injury is to a primary (baby) or permanent (adult) tooth. Check for soft tissue lacerations/punctures or bruising.

Assess displaced tooth for:

- **Concussion**—normal mobility, tender to touch, not out of place
- **Subluxation**—increased mobility, tender to touch, not out of place
- **Intrusion**—appears pushed into gingiva, immobile
- **Extrusion**—displaced out of socket, appears elongated, increased mobility
- **Lateral luxation**—displaced laterally and out of place, usually not mobile, may seem locked in place, usually associated with a bony alveolar fracture

If a tooth is missing, assess for:

- **Avulsion**—tooth completely out of socket. Determine if caregiver has the tooth. If not, consider foreign body/chest film to rule out aspiration. If permanent tooth, immediately replant or place in Save-A-Tooth solution and call Cincinnati Children’s dentist immediately; never replant a primary tooth

If a tooth is fractured, assess for:

- **Uncomplicated**—fracture does not involve pulp (nerves/blood vessels of tooth), only involves enamel and dentin
- **Complicated**—tooth itself appears to be bleeding, from nerve/blood vessels of tooth, may present as a pinpoint area or larger

Some dental traumas can only be diagnosed with x-ray (root fracture) but may present as a mobile tooth.

**HPE (HISTORY AND PHYSICAL EXAM) RED FLAGS**

- If trauma seems inconsistent, rule out possible child abuse
- If floor of mouth shows bruising, consider jaw fracture

**MANAGEMENT/TREATMENT**

Treatment varies depending on injury and whether a primary or permanent tooth is involved. See algorithm on reverse for details.

For true dental emergencies, page the Cincinnati Children’s on-call resident at 513-636-4200.
Dental Injuries, Traumatic

**Patient Presents with Dental Trauma**

**Standard Workup**
- History of Present Illness
  - How injury occurred
  - Dental history/trauma
  - R/O concussion or other cranial nerve injuries
- Medical History
  - Tetanus status
  - Allergies
  - Current medications
- Family History
  - Physical Exam

**Refer to Cincinnati Children’s Plastic Surgery for soft tissue injuries beyond vermillion border.**

**Primary Tooth Injury**
- Fracture
  - Uncomplicated
    - No emergency dental treatment required
    - Dentist follow-up within 24 hours
  - Complicated
    - Dental Emergency*
      - Call or page dental team
      - Can refer to patient’s dentist of record for immediate treatment
    - Yes
    - No
      - Does tooth position interfere with patient’s bite?
      - Yes
      - No
        - Is tooth excessively mobile OR is it an aspiration risk?
        - Yes
        - No
          - Yes
          - No

**Permanent Tooth Injury**
- Fracture
  - Uncomplicated
    - No emergency dental treatment required
    - Dentist follow-up within 24 hours
  - Complicated
    - Dental Emergency
      - Refer to dentist immediately
      - Page/call dental team
      - Verify tetanus status
      -Prescribe antibiotics and chlorhexidine
    - Yes
    - No
      - Subluxation, concussion can follow up in 24 hours with dentist

**Notes**
- **NEVER** replant a primary tooth.
- If in pain, consult dentist.
- For soft tissue injuries in the mouth, consult dentist.
- For suspected jaw fractures, consult with oral surgery.

*Cincinnati Children’s dentistry is always available for consultation, but if the trauma does not require immediate treatment, patient can be referred back to their dentist of record if they have one.

For urgent issues, or to speak with the specialist on call 24/7, call the Physician Priority Link® at 1-888-987-7997.