

# Dental Injuries, Traumatic

## FAST FACTS

### 25%

of all school-aged children have experienced dental trauma of some sort

### luxation

most common trauma in primary teeth

### fractures

most common trauma in permanent teeth

### 33%

of adults have experienced a dental trauma before age 19

## WHEN TO REFER

When in doubt, contact patient's dentist, page the Cincinnati Children's on-call dental resident, or, if after hours, refer to Cincinnati Children's Emergency at Burnet ONLY.

For primary teeth, refer to Cincinnati Children's dentistry when there is visible pulp exposure in a fracture, teeth are moved out of position and interfering with biting down on back teeth, or where there is risk for aspiration of extremely loose teeth.

For permanent teeth, refer to Cincinnati Children's dentistry for avulsions (for reinsertion), complicated crown fractures, teeth out of position (for repositioning).

**For true dental emergencies, page the Cincinnati Children's dental resident on-call at 513-636-4200.**

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
- **Intrusion** — severe displacement of tooth into gingiva and bone, no longer visible

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 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.

If you would like additional copies of this tool, or would like more information, please contact the Physician Outreach and Engagement team at Cincinnati Children's.

# 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

**Displacement/Avulsion**

Does tooth position interfere with patient's bite?

**Yes** → Dental Emergency\*  
**No** → Is tooth excessively mobile OR is it an aspiration risk?

Is tooth excessively mobile OR is it an aspiration risk?

**Yes** → Dental Emergency\*  
**No** → No dental emergency treatment needed

- No dental emergency treatment needed
- Dentist follow-up within 24 hours

**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

**Dental Emergency**

**Avulsion**

- Verify tetanus status
- Prescribe antibiotics and chlorhexidine

**Yes** → Can tooth be replanted?  
**No** → Subluxation, concussion can follow up in 24 hours with dentist

Can tooth be replanted?

**Yes** → Clean with stream of saline

- Clean with stream of saline
- Do not touch root
- Replant in socket using digital pressure
- Have patient bite on gauze
- Call dentist immediately

**No** → Place in Save-A-Tooth

- Place in Save-A-Tooth
- Call dentist immediately

- Subluxation, concussion can follow up in 24 hours with dentist

**No, but tooth displaced**

**Dental Emergency**

- Lateral luxation, intrusion, extrusion, call dentist immediately

**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.