

# TIPS FOR MANAGING PRIMARY DENTAL TRAUMA

**Rachael O’Rorke, Specialty Dentist in Paediatric Dentistry  
and Nabina Bhujel, Consultant in Paediatric Dentistry**

## Introduction

Oral injuries account for 18% of all injuries suffered by 0-6 year olds, with traumatic dental injuries (TDI) being the most common type of oral injury.<sup>1</sup> The immediate management of dental trauma can be stressful for clinicians and upsetting for parents and patients, therefore it is essential that examination and treatment are efficient.

## History

1. **Get the full story:** Establishing an accurate history is essential. You must ascertain how, when and where the TDI occurred and if anyone witnessed the incident.
2. **Head injuries:** It is also important to check that the child did not sustain a head injury at the time of the accident. Common symptoms of head injury can include loss of consciousness, confusion, vomiting or visual disturbances. If you have any suspicion that the child may have had a head injury it is important to directly refer them to paediatric emergency services for review by a medical professional.
3. **Medical history:** The child’s medical history should be recorded and may contribute to future treatment planning or may give an indication of how likely a child would be able to tolerate treatment

or predict likelihood of repeated TDIs. You should also establish if the child has had a tetanus vaccination and if there are concerns of contamination you should direct them toward to an urgent care centre.

4. **Safeguarding:** Take some time to consider if the mechanism of injury matches the history given. If you have any concerns that the child may have suffered a non-accidental injury, escalate your concerns to a senior for a second opinion and document your findings clearly. If there is suspicion of non-accidental injury, then it may trigger safeguarding concerns and it is important for you to be familiar with the protocol followed at your institution.

## Examination

1. **Be systematic:** Young children can be distressed and in pain following a TDI. It is important to explain the examination process to the parent prior to starting so that they can be aware of what to expect and can assist you. You should be systematic in your approach to examining, so that no injuries are missed. You must remember to record any soft tissue or extra-oral injuries also. If there are multiple contusions or lacerations you may

find it easier to draw an annotated picture of the injuries.

2. **Knee-to-knee examinations:** Often, the most effective way to examine the injury is likely to be a knee-to-knee (head on lap) examination, whilst the child is sat on the parent’s lap. This allows for the child to be held by the parent, while also allowing the dentist to examine their injuries – crying and shouting is to be expected and is often useful in allowing us to visualise the TDI!
3. **Radiographs:** Radiographs can be useful to help identify root fractures or position of teeth which have moved. A size 2 film can be used to take an upper standard occlusal radiograph and is generally tolerated better by the patient than a bulky intraoral film holder.
4. **Utilise your nurse:** They can help to keep the patient calm and occupied whilst getting a full history from the parent. You should have everything you may need to hand prior to starting to examine the patient, as the child may only tolerate a brief exam.
5. **Discussions:** You should explain the possible sequelae of trauma to parents – particularly the risk of damage to the permanent successor teeth. If you are monitoring a tooth following TDI, it

is important that parents are aware of possible signs and symptoms of infection – pain, a sinus (encourage parents to lift the lip and assess the area occasionally) or discolouration. Discolouration alone is not an indicator for removal of a tooth and can be transient following certain injuries. You should encourage the parents to take photographs of injured teeth as they can be useful for comparison at review visits.

## Management of common primary dental injuries

### 1. Hard tissue injuries

These injuries involve the tooth breaking and can be divided into four categories: **Enamel fractures** – No treatment other than smoothing of edges if tolerated. **Enamel-dentine fractures** – Can cause some sensitivity, therefore if possible seal exposed dentine with a restorative material.

## ‘Young children can be distressed and in pain following a TDI. It is important to explain the examination process to the parent prior to starting.’

**Enamel-dentine-pulp fractures** – Extensive fractures involving the pulp are usually painful and generally the tooth will need to be extracted, however if the child can tolerate treatment, then a partial pulpotomy and placement of calcium hydroxide can be considered in certain cases.

**Root fractures** – If the coronal fragment is displaced or excessively mobile it should be removed and the remaining root left to resorb. If the tooth is not displaced or mobile you should continue to monitor the tooth.

### 2. Intrusions

The tooth appears shorter than the contralateral teeth and moved into the gingivae. You should try to ascertain through examination and radiographs the direction in which the tooth has moved. Remember that permanent successors to maxillary primary incisors generally develop superior and palatal to primary incisors, therefore if you suspect the

### Useful resources

- Dental trauma guide<sup>2</sup> – online resource. <https://dentaltraumaguide.org/>
- International Association of Dental Traumatology – dental trauma guidelines. <https://www.iadt-dentaltrauma.org/for-professionals.html>
- Tooth SOS app – mobile app with dental trauma guidelines available in multiple languages.

intruded tooth has interfered with the developing tooth, you should arrange for its extraction. Generally, these injuries can be monitored closely for spontaneous re-eruption of the tooth.

### 3. Lateral luxations

The tooth has moved in a palatal or labial direction. If occlusion is unaffected, the tooth can be allowed to reposition naturally. If occlusion is slightly affected, you can attempt selective grinding of the surface, dependent on co-operation of the child. However if occlusion is severely affected and is affecting the child's ability to eat, then the tooth should be extracted. Radiographs are helpful in distinguishing luxation injuries from root fractures with crown displacement.

### 4. Avulsions

An avulsion injury is when the tooth is completely moved out of the socket. You should not reimplant primary teeth as this risks damage to the developing tooth bud of the permanent successor. A radiograph can be useful in assessing if there are any retained root fragments.

It is essential to locate the tooth and its fragments to ensure that it has not been inhaled or become embedded within soft tissues.

### References

1. Day P F, Flores, M T, O'Connell A C, *et al.* International Association of Dental Traumatology guidelines for the management of traumatic dental injuries: 3. Injuries in the primary dentition. *Dent Traumatol* 2020; **36**: 343-359.
2. Dental Trauma Guide. Dental Trauma Guide – evidence based treatment guide. 2022. Online information available at: <https://dentaltraumaguide.org/> Accessed August 2022.

<https://doi.org/10.1038/s41406-023-0938-6>

## BDA Member Assistance Programme

Free, 24/7 confidential counselling and emotional support for you and your immediate family- online, over the phone or via the My Healthy Advantage app.

### WHAT CAN I USE THIS SERVICE FOR?



Access Support today

[bda.org/healthassured](https://bda.org/healthassured)

0800 030 5182

My Healthy Advantage app



The BDA is owned and run by its members. We are a not-for-profit organisation – all our income is reinvested for the benefit of the profession.