

Acute management of dental trauma for the Child Patient

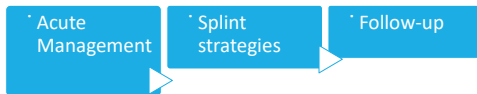
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RBHSC SEPT 2026

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At the end of this session delegates should be able to:

- Describe the **acute management** of traumatic dental injuries in children
- Consider appropriate **splint strategies** for traumatized teeth in the child patient
- Plan for appropriate **follow up** in dental trauma patients

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Trauma App – Tooth SoS



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BSPD membership includes Dental Trauma UK access and DTG access



CPD



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Emergency cover

On call availability

Immediate advice by telephone

- Urgency of treatment is critical in many injuries
- Time of accident usually out of working hours

Respond to

- Trauma
- Acute infections
- Bleeding

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Acute Management

History of the accident

- When, Where, How, Witnessed

Teeth/ fragments accounted for?

- Abdomen / Chest X-Ray / storage medium

Other injuries

- Loss of consciousness / Head injury / Medical Assessment indicated?
 - ** Triage system **Consider Priority of injuries**

Accompanying person - Consent

- Be aware of NAI (cc GMP)

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Acute Management

Medical History

- Including tetanus vaccination status
- Fasting? - consider maintain / occlusion

Previous Dental History

- Compliance
- State of eruption
- Previous dental trauma

Thorough examination & documentation of injuries, photographs

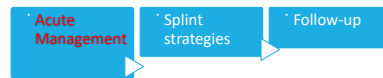
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Radiographs

It has been agreed in the Belfast Health and Social Care Trust that all patients should be examined by a dentist / dentally qualified OMFS surgeon prior to determining if radiographic exposure is required.

The Selection Criteria for Dental Radiography, FGDP (UK), is the accepted guideline to which dentists refer to across all specialties and services.

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Review acute management of

- **Injuries of the soft tissues**
- **Injuries of the primary dentition**
- **Injuries to the permanent dentition**
 - **Dental hard tissues**
 - **Periodontal ligament injuries**

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Soft Tissue Injuries

- Apply direct pressure to achieve haemostasis
- Debridement and suture if required
- Tongue-if no haemorrhage consider review after overnight
- Fluids, pain relief, oral hygiene advice (HSMW?/ chlorhexidine)
- Lacerations involving vermillion border – Refer to Plastic Surgery
- Under 5 yrs old- may require GA

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Soft tissue lacerations-

Tongue

Usually heal well with no intervention
As long as no bleeding leave overnight and review in a.m. fasting

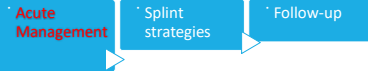
Degloving

Lift the lip to examine
Check in depth of sulcus

Lower lip

Check for through and through
Check for missing fragments.

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Injuries to Primary Teeth

First step - clean it up !- soaked gauze

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Knee to knee exam- See essential reading

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Behaviour support-Exam Protective stabilisation

Precautions

- cardiac instability
- pulmonary and respiratory instability
- musculoskeletal alignment issues or weakness- T21 atlantoaxial instability
- joint hypermobility EDS
- bone fragility Osteogenesis imperfecta
- cutaneous vulnerability to mechanical stress- Epidermolysis bullosa
- psychological instability
- thermoregulation disorders- ectodermal dysplasia
- psychotropic medications- antidepressants, stimulants etc

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Injuries to Primary Teeth

Fracture of tooth

- Enamel- smooth
- Enamel dentine- cover exposed dentine
- Pulp exposure – pulp therapy* / removal
- Crown-root #
 - restore
 - vs remove if unrestorable
 - pulp mx

* IADT guidelines

*Radiographs where +vely affect diagnosis or treatment

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Injuries to Primary Teeth

1. Root Fracture

- Crown not displaced- leave
- Crown displaced, no XS mobility ,+occ interference –leave
- Crown displaced, XS mobility, +occ interference-
extract coronal fragment vs reposition and splint 4/52

2. Alveolar fracture

reposition and splint (+/- splint 4/52)

3. Avulsion

do NOT reimplant primary tooth

*IADT if coronal fragment displaced and not excessively mobile, leave to spontaneously reposition even if occlusal interference.



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Injuries to Primary Teeth

Concussion / subluxation

- Monitor

Minor displacement (luxation)- most common

- No occlusal interference- Monitor
- If minimal occlusal interference- Leave + monitor
- Severe displacement - reposition with gentle finger pressure if unstable then splint for 4 weeks vs extraction

Intrusion

- Monitor
- Conservative approach

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Injuries to Primary Teeth

Extrusion

No occlusal interference- leave

>3mm- extraction

Severe displacement / mobility / root surface exposure

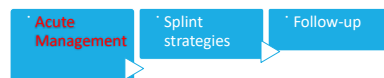
- Occlusion disrupted - extraction

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Home Care

- How to achieve haemostasis
- Soft diet / maintain oral fluids
- Analgesia
- Good OH / CHX swabbed bd 1/52- consider age of pt
- Antibiotics if PMH or if significant surgical intervention
- Monitor teeth - short and long term sequelae to primary teeth and successors
- Follow up arrangements

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Enamel dentine fracture

- Attend for treatment ASAP / ideally same day
- Bring broken fragments of teeth (advise re storage)

No exposure

- GIC or composite bandage if no fragment
- Indirect pulp cap, Calciumsilicate , Ca (OH)₂ + GIC bandage
- Keep fragment hydrated in milk rebond

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Enamel / Dentine Fracture pulpal involvement

If blood is seen in the crown please complete pulpal management at presentation e.g. pulp cap

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Complicated Crown Fracture

- | | |
|------------------------------------|-------------------------------------|
| • Pulp Cap | Pulpotomy |
| <hr/> | |
| – Complete /incomplete apex | • Incomplete / complete apex |
| – Exposure pinpoint | • Exposure > 1mm diameter |
| – < 24hrs after injury | • > 24hrs after injury |
| | • Vital pulp / not infected |
| | • Sooner the better |

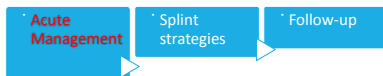
Aim is to maintain vitality and allow further root growth and development.

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Crown-root fracture

- | | |
|-----------------------|-----------------------|
| Uncomplicated | Complicated |
| Rebond fragment- FU | Management of pulp |
| | Rebond fragment- FU |
| Remove fragment | |
| Cover exposed dentine | Remove fragment |
| FU | Management of pulp |
| | Cover exposed dentine |
| | FU |

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Displacement injuries

- Concussion / Subluxation
- Extrusive or lateral luxation
- Intrusion
- Avulsion
- Root fractures

Aim of treatment

- Reposition teeth ASAP (if possible at the scene)
- Advise attend dentist immediately, splint if necessary

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Subluxation (mobile but undisplaced)

Treatment

- Assess mobility and occlusion
- Splint if necessary 2 weeks
- Monitor

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Lateral Luxation and Extrusion

Treatment

- Immediate reposition LA – finger/ forceps
- Review within 48 hours and treat complications
- Lateral- Splint 4 weeks
- Extrusion- Splint 2 weeks
- Splinting times may be longer if breakdown of marginal bone / alveolar socket#



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Intrusion

Was it erupted prior to accident?

- Radiograph

Basis of Immediate treatment decision

- Severity of Intrusion
- Degree of Apical closure
- Early Percussion findings

	Incomplete root development	Complete root development
Mild (<3mm)	Monitor	Monitor or orthodontic repositioning after 4 weeks* or surgical after 8 weeks
Moderate (3-7mm)	Monitor	Surgical (preferred) or orthodontic repositioning
Severe (>7mm)	Monitor	Surgical repositioning

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Avulsion

Telephone Advice

- Hold tooth by the crown (not the root)
- If dirty, rinse gently in milk, saline or tap water
- Re-implant the tooth as soon as possible
- Bite gently on handkerchief, to stabilize the tooth

ATTEND DENTIST IMMEDIATELY

IF NOT REIMPLANTED Store in MILK, SALINE, LABIAL SULCUS



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Replantation procedure

L.A. likely necessary

Prepare tooth

- Rinse to remove contamination

Prepare socket

- Rinse out old blood clot – do not curette
- Manipulate bone only if necessary

Insert tooth & functional splint up to 2 weeks

- Antibiotic
- <12 years Penicillin based AB unless allergic
- consider tetracycline/doxycycline >12 years
- Review

When not to re implant

Almost never – balance risk and benefit

Primary tooth

Unrestorable tooth

Other severe injuries

Medical history

- Impaired immune system
- Cardiac – type of defect

Very young child

- Open apices – short root

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Root Fractures

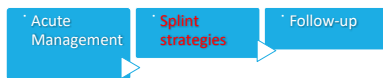
- Reposition coronal fragment if displaced
- Functional Splint until periodontal injury healed 4 wks
- Up to 4 months for coronal 1/3 of root

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Dentoalveolar (Tooth SOS)

- Reposition +/- suture
- Functional Splint until periodontal injury healed 4 wks

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Which type of splint?

Facilities available / site / weekend

- Emergency - in casualty
- Pressure formed - in lab
- Dental surgery - composite + orthodontic wire/TTS

Presence of other injuries

Teeth present / age of child

Future anticipated treatment

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Composite and wire splint



- Up to 0.016" / 0.4mm passive and flexible wire

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Hints

Consider occlusion

Reposition

- Hold position with gauze

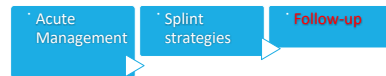
Suture

Splint

- Consider abutment
- Adjacent teeth then traumatised
- Consider gingival margins
- Consider occlusion
- Consider dark composite

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Titanium splint



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Follow-up Arrangements

Outpatient- GDP/ CDS (cc GMP)

HDS - RBHSC

- 07824549063 (DCT mobile on call phone)
- paeddentalreferral@belfasttrust.hscni.net
- Could be delay so phonecall better 9am -5pm

Admission

GA

Transfer of patients to UHD

Formal SLA in place

- Phonecall to DCT to confirm Maxillofacial Consultant On Call
- Consultant to Consultant discussion and agreed plan for patient
- If not being transferred then plan for assessment in RBHSC (ED / Ward)
- Haematological investigations - may have been done by ED. If maxfac require further bloods then this may be completed in UHD on transfer.

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Further Reading

Paediatric Dentistry - Welbury

Clinical Guidelines - update 19/5/2020

<http://www.dentaltraumaguide.org/>

<http://www.dentaltraumaguide.org/>
[Guidelines – International Association of Dental Traumatology \(iadt-dentaltrauma.org\)](http://www.dentaltraumaguide.org/)

American Academy of Pediatric Dentistry. Behavior guidance for the pediatric dental patient. The Reference Manual of Pediatric Dentistry. Chicago, IL: American Academy of Pediatric Dentistry; 2025:379-99.
https://www.aapd.org/globalassets/media/policies_guidelines/bp_behaviorguide25.pdf



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Essential reading



<https://www.bspd.co.uk/Portals/0/BSPD%20clinical%20holding%20guidelines%20final%20with%20flow%20chart%20250416.pdf>

The use of physical holds (clinical holding) to assist or support a patient to receive clinical dental care or treatment in situations where their behaviour may limit the ability of the dental team to effectively deliver treatment or where the patient's behaviour may represent a safety risk to themselves, members of the dental team or any other accompanying persons

https://www.aapd.org/globalassets/media/policies_guidelines/bp_behaviorguide.pdf

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