Dental Trauma — Adults

Canonical: https://directory.collinsstreetspecialistcentre.com.au/procedures/endodontics/dental-trauma-adults/

Description:

--- title: "Dental Trauma — Adults" slug: /endodontics/dental-trauma/ type: procedure specialty: endodontics specialists: ["Dr Gregory Tilley", "Prof Chankhrit Sathorn", "Dr Aovana Timmerman", "Dr Are...

Details:

--- title: "Dental Trauma — Adults" slug: /endodontics/dental-trauma/ type: procedure specialty: endodontics specialists: ["Dr Gregory Tilley", "Prof Chankhrit Sathorn", "Dr Aovana Timmerman", "Dr Areti Vrochari"] related: - /endodontics/root-canal-treatment/ - /endodontics/internal-bleaching/ - /prosthodontics/dental-crowns/ - /prosthodontics/dental-bridges/ - /oral-maxillofacial-surgery/facial-trauma/ seo_target: "dental trauma specialist Melbourne knocked out tooth" ---

Dental Trauma in Adults

Traumatic dental injuries — from a sporting accident, a fall, a motor vehicle collision, or a workplace incident — can affect teeth in ways that range from a minor chip with no long-term consequence to a complete avulsion (knocked-out tooth) that constitutes a genuine dental emergency. The management of dental trauma is a specialist field in its own right, and timely access to expert assessment can be the difference between saving a tooth and losing it permanently.

At the Collins Street Specialist Centre, our endodontists have specialist expertise in dental traumatology — the diagnosis, immediate management, and long-term monitoring of traumatically injured teeth in adults.

What Is a Traumatic Dental Injury?

Dental trauma encompasses any injury to the teeth, supporting structures (periodontal ligament and alveolar bone), gums, or jaw resulting from an external force. The nature and severity of injury depends on the direction, magnitude, and site of impact, and on the quality of the supporting bone and soft tissues.

The International Association of Dental Traumatology (IADT) classifies traumatic dental injuries as follows:

Injuries to the hard dental tissues and pulp: - **Infraction** — an incomplete enamel fracture with no loss of tooth structure - **Enamel fracture** — loss of enamel only - **Enamel-dentine fracture** — loss of enamel and dentine, pulp not exposed - **Complicated crown fracture** — fracture with pulp exposure - **Crown-root fracture** — fracture extending below the gumline - **Root fracture** — fracture entirely within the root

Injuries to the periodontal structures: - **Concussion** — injury to the supporting structures without displacement or excessive mobility - **Subluxation** — injury with increased mobility but no displacement - **Extrusive luxation** — partial displacement out of the socket - **Lateral luxation** — displacement in a lateral direction with bone fracture - **Intrusive luxation** — displacement into the alveolar bone (intrusion) - **Avulsion** — complete displacement of the tooth from its socket

Multiple injury types frequently occur simultaneously in the same patient.

When Might You Need Specialist Care After Dental Trauma?

Seek specialist endodontic assessment promptly after any of the following:

- **A tooth is knocked out (avulsed)** — this is a dental emergency. Time outside the socket is critical to survival of the tooth. See guidance below. - **A tooth has been displaced** from its original position in any direction - **A fracture extends to or below the gum line** - **A tooth that was injured does not respond normally** to sensitivity testing, or stops responding over time (suggesting pulp necrosis) - **A tooth becomes dark or discoloured** weeks to months after an injury — this may indicate pulp degeneration or the formation of a calcific barrier within the canal - **Pain, swelling or a sinus tract appears** near a previously injured tooth - **You have suffered a blow to the jaw** and are concerned about the teeth even if no fracture is immediately obvious - **A tooth shows increased mobility** following trauma - **You have already been seen in an emergency department or by a general dentist** and want specialist assessment and monitoring of an injured tooth

Many traumatic dental injuries have delayed consequences — a tooth that appears healthy immediately after injury may develop pulp necrosis weeks, months, or even years later. This makes long-term monitoring by a specialist with expertise in dental traumatology essential.

What to Expect: Diagnosis and Treatment

Immediate emergency: avulsed (knocked-out) permanent tooth

If a permanent adult tooth is completely knocked out:

1. **Find the tooth** — handle it by the crown (the white part), not the root 2. **Do not scrub or dry the root surface** — the periodontal ligament fibres on the root surface are essential for reattachment 3. **Rinse gently** with milk or saline if the tooth is dirty 4. **Store in milk** (or inside the cheek if milk is unavailable) — this preserves root surface cells 5. **Seek emergency dental care immediately** — survival rates decline significantly after 60 minutes outside the socket 6. **Replant the tooth yourself if you can** — if comfortable doing so, gently replant the tooth into the socket and hold it in position. This is the best storage medium.

Do not store an avulsed tooth in tap water. Do not wrap it in tissue.

Specialist assessment

Your endodontist at CSSC will undertake a structured assessment including:

Clinical history Time elapsed since injury, where and how it occurred, previous dental history of the affected teeth, loss of consciousness or other head trauma (to screen for concussion requiring medical assessment).

Clinical examination Inspection of soft tissue injuries, tooth position and mobility, periodontal attachment levels, and exposure of pulp or dentine. Percussion testing and sensitivity testing are performed across all teeth in the region of injury — including those that appear uninvolved.

Radiographic assessment Periapical radiographs in multiple angulations are taken to assess root integrity, displacement, and periapical status. CBCT imaging may be recommended for complex presentations, root fractures, or alveolar bone fractures that may not be visible on two-dimensional films.

Pulp vitality testing Baseline records are essential, as many traumatised teeth give false responses immediately post-injury due to physiological shock. These baseline records allow meaningful monitoring over subsequent months.

Treatment pathways

Treatment depends entirely on injury type, tooth vitality, and the elapsed time since injury. Common management scenarios include:

Crown fractures with exposed dentine (no pulp exposure) Immediate placement of a bonded resin restoration to seal exposed dentine tubules and restore aesthetics and function.

Crown fractures with pulp exposure If the pulp is healthy and the tooth has been seen promptly, a pulp capping or partial pulpotomy procedure attempts to preserve pulp vitality. If the pulp is significantly compromised, full root canal treatment is required.

Luxation injuries (displaced but not avulsed teeth) Repositioning and splinting with a flexible splint to allow periodontal healing. Monitoring of pulp status is conducted at defined intervals — the likelihood of pulp necrosis developing varies with injury severity and is highest in intrusion injuries.

Avulsion — replanted teeth Root canal treatment is typically initiated within 7–10 days of replantation in mature teeth, as the pulp does not survive avulsion. Long-term management involves monitoring for external root resorption, which is the primary complication of replanted teeth.

Root fractures Horizontal root fractures are managed with repositioning and splinting; the apical fragment often remains vital. Vertical root fractures generally carry a poor prognosis for tooth retention.

Internal or external root resorption Resorption is a serious complication of dental trauma — the body's immune response erodes root structure. Depending on type and extent, this may be manageable with specialist endodontic intervention or may ultimately require extraction.

Recovery and Aftercare

Recovery varies substantially depending on injury severity. General guidance:

- Soft diet for one to two weeks following replantation or luxation injuries to allow periodontal healing - Avoid contact sports until any splint is removed and healing is confirmed - Maintain meticulous oral hygiene around splinted teeth to reduce infection risk - Attend all scheduled follow-up appointments — these are not optional. Pulp necrosis, root resorption, and other complications often develop silently over months without producing symptoms - Report any darkening of the tooth, swelling, or spontaneous pain between reviews immediately

A structured follow-up protocol (typically at 2 weeks, 4 weeks, 3 months, 6 months, and annually thereafter) is essential for traumatised teeth and reflects current IADT evidence-based guidelines.

Why See a Specialist Endodontist?

Dental traumatology requires a comprehensive understanding of pulpal biology, periodontal healing, root resorption pathways, and the complex interplay of these factors across different injury types. General dental practitioners are trained to manage straightforward trauma presentations, but complex, multi-tissue, or atypical injuries benefit substantially from specialist input.

The endodontic team at CSSC is trained in current IADT evidence-based guidelines for the management of traumatic dental injuries. Dr Aovana Timmerman is a recipient of the ANZAE JM Booth Award at an international dental traumatology congress and has a specific clinical and academic interest in this area.

High-magnification microscopy allows detailed assessment of injury extent, crack detection, and precision in all restorative and endodontic procedures following trauma — capabilities that are central to optimal outcomes.

Specialist registration can be verified through AHPRA at www.ahpra.gov.au.

Our Specialists

Dr Gregory Tilley BDSc (Melb), LDS (Vic), FRACDS, MRACDS (Endo) Over 35 years of specialist endodontic experience across the full spectrum of endodontic presentations, including complex dental trauma cases. Honorary Senior Fellow, University of Melbourne.

Prof Chankhrit Sathorn DDS, Grad.Dip.Dent, DClinDent, PhD, MRACDS (Endo) Editorial board member, Dental Traumatology journal. Prof Sathorn contributes to the evidence base for traumatic dental injury management at an international level, directly informing contemporary clinical guidelines.

Dr Aovana Timmerman BDSc (Melb), FRACDS, DCD (Melb), GCertClinTeach, MRACDS (Endo) Recipient of the ANZAE JM Booth Award at the 2013 IADT Congress, Istanbul. Dental traumatology is a specific area of clinical and academic interest. Clinical demonstrator, University of Melbourne. Fluent in Mandarin.

Dr Areti Vrochari DDS, DrMedDent (Endo) Training in Athens and Freiburg encompasses restorative management of traumatised teeth — an area where endodontic and aesthetic/restorative disciplines converge.

Related Treatments

- [**Root Canal Treatment**](/endodontics/root-canal-treatment/) — Often required following luxation injuries, complicated crown fractures, or avulsion. - [**Internal Bleaching**](/endodontics/internal-bleaching/) — Traumatised root-treated teeth often discolour over time; internal bleaching can restore a natural appearance without further structural compromise. - [**Dental Crowns**](/prosthodontics/dental-crowns/) — Fractured or root-treated teeth typically require specialist prosthodontic restoration. - [**Dental Bridges**](/prosthodontics/dental-bridges/) — When a traumatised tooth cannot be saved, a bridge or implant may be considered. - [**Facial Trauma**](/oral-maxillofacial-surgery/facial-trauma/) — Dental injuries frequently accompany facial bone fractures. Our oral and maxillofacial surgery team manages the broader facial trauma component where required.

Contact us on (03) 9650 2726. In the event of a dental emergency during business hours, call ahead and we will do our best to accommodate you. Collins Street Specialist Centre is located at Level 8, Manchester Unity Building, 220 Collins Street, Melbourne CBD — directly opposite Town Hall Metro station.