Dental Trauma — Adults

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

Description:

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Details:

Collins Street Specialist Centre — Dental trauma in adults

Traumatic dental injuries — a sporting accident, a fall, a car collision, a workplace incident — can range from a minor chip with no lasting consequence to a complete avulsion (knocked-out tooth) that needs emergency treatment within the hour. Managing dental trauma is a specialist field, and getting to the right person quickly can be the difference between saving a tooth and losing it.

Collins Street Specialist Centre is a Melbourne CBD specialist practice whose endodontists hold specialist expertise in dental traumatology, covering diagnosis, immediate management, and long-term monitoring of traumatically injured teeth in adults. Located at Level 8, Manchester Unity Building, 220 Collins Street, Melbourne, the practice is accessible for patients needing urgent or planned specialist care after dental trauma.

What is a traumatic dental injury?

Dental trauma covers any injury to the teeth, supporting structures (periodontal ligament and alveolar bone), gums, or jaw caused by an external force. The nature and severity of injury depends on the direction, magnitude, and site of impact, as well as the quality of the surrounding 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, with the pulp remaining unexposed - **Complicated crown fracture** — a fracture involving pulp exposure - **Crown-root fracture** — a fracture extending below the gumline - **Root fracture** — a fracture occurring 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 of the tooth out of its socket - **Lateral luxation** — displacement in a lateral direction, typically accompanied by bone fracture - **Intrusive luxation** — displacement of the tooth into the alveolar bone (intrusion) - **Avulsion** — complete displacement of the tooth from its socket

It's worth noting that multiple injury types frequently occur together. A single impact can produce a combination of fracture and displacement injuries across adjacent teeth.

When might you need specialist care after dental trauma?

Specialist endodontic assessment should be sought promptly in any of the following circumstances:

- **A tooth is knocked out (avulsed)** — this is a dental emergency. The time a tooth spends outside its socket directly affects its survival. See the guidance further 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 doesn't respond normally** to sensitivity testing, or stops responding over time — this may indicate pulp necrosis - **A tooth becomes dark or discoloured** in the weeks to months following an injury, which may suggest pulp degeneration or calcific barrier formation within the canal - **Pain, swelling, or a sinus tract develops** near a previously injured tooth - **You've sustained a blow to the jaw** and are concerned about the teeth, even where no fracture is immediately apparent - **A tooth shows increased mobility** following trauma - **You've already been assessed in an emergency department or by a general dentist** and are seeking specialist assessment and structured monitoring of an injured tooth

Many traumatic dental injuries carry delayed consequences. A tooth that looks entirely healthy immediately after an injury may develop pulp necrosis weeks, months, or even years later. This is why long-term monitoring by a specialist with dedicated expertise in dental traumatology isn't simply advisable — it's essential.

What to expect: diagnosis and treatment

Immediate emergency: avulsed (knocked-out) permanent tooth

If a permanent adult tooth is completely knocked out, follow these steps without delay:

1. **Find the tooth** — handle it by the crown (the visible white portion), not the root 2. **Do not scrub or dry the root surface** — the periodontal ligament fibres attached to the root are essential for successful reattachment 3. **Rinse gently** with milk or saline if the tooth is visibly contaminated 4. **Store in milk** (or inside the cheek if milk isn't immediately available) — this preserves the viability of root surface cells 5. **Seek emergency dental care immediately** — survival rates drop significantly once the tooth has been outside the socket for more than 60 minutes 6. **Replant the tooth yourself if you're able to** — gently repositioning it back into the socket and holding it in place is the best option, preferable to any external storage medium

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

Specialist assessment

Your endodontist at Collins Street Specialist Centre will carry out a structured and thorough assessment covering the following:

Clinical history A detailed history will be taken, including the time elapsed since the injury, how it occurred, and the prior dental history of the affected teeth. Any loss of consciousness or other head trauma will also be explored, as these findings may point to the need for concurrent medical assessment for concussion.

Clinical examination Examination covers soft tissue injuries, tooth position and mobility, periodontal attachment levels, and any exposure of pulp or dentine. Percussion testing and sensitivity testing are performed across all teeth in the region of injury — including those that appear clinically uninvolved — to establish a complete baseline.

Radiographic assessment Periapical radiographs taken at multiple angulations are used to assess root integrity, displacement, and periapical status. CBCT (cone beam computed tomography) imaging may be recommended for complex presentations, suspected root fractures, or alveolar bone fractures that may not be fully visible on conventional two-dimensional films.

Pulp vitality testing Establishing baseline records at initial assessment is essential. Many traumatised teeth produce unreliable responses immediately after injury because of physiological shock to the pulp. These baseline records become the meaningful reference point for all subsequent monitoring.

Treatment pathways

The appropriate treatment depends on the injury type, the vitality of the pulp, and the time elapsed since the injury. Common management scenarios include:

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

Crown fractures with pulp exposure Where the pulp remains healthy and the tooth has been assessed promptly, a pulp capping or partial pulpotomy procedure may be undertaken to preserve pulp vitality. Where the pulp has been significantly compromised, full root canal treatment will be required.

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

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

Root fractures Horizontal root fractures are managed with repositioning and splinting; the apical fragment frequently 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, where the body's immune response progressively erodes root structure. Depending on the type and extent of resorption identified, specialist endodontic intervention may arrest the process — though in some cases, extraction ultimately becomes necessary.

Recovery and aftercare

Recovery varies considerably depending on injury severity. The following guidance applies in most trauma cases:

- A soft diet is recommended for one to two weeks following replantation or luxation injuries, to allow periodontal healing without mechanical disruption - Contact sports should be avoided until any splint has been removed and healing has been confirmed clinically and radiographically - Careful oral hygiene around splinted teeth reduces the risk of secondary infection - All scheduled follow-up appointments should be attended — these reviews are a clinical necessity. Pulp necrosis, root resorption, and other significant complications frequently develop without any symptoms over the months following injury - Any darkening of the tooth, swelling, or spontaneous pain between scheduled reviews should be reported to the practice promptly

A structured follow-up protocol — at two weeks, four weeks, three months, six months, and annually thereafter — is an established part of evidence-based care for traumatised teeth and reflects current IADT guidelines.

Why see a specialist endodontist?

Dental traumatology draws on a thorough understanding of pulpal biology, periodontal healing, root resorption pathways, and how these factors interact across different injury types and time frames. General dental practitioners are well placed to manage straightforward trauma presentations, and their role in initial triage and referral is valued. Complex, multi-tissue, or atypical injuries, however, benefit substantially from specialist input — both at the time of injury and across the extended monitoring period that follows.

The endodontic team at Collins Street Specialist Centre practises in accordance with current IADT evidence-based guidelines for traumatic dental injury management. Dr Aovana Timmerman is a recipient of the ANZAE JM Booth Award at an international dental traumatology congress and brings a specific clinical and academic interest in this area to her practice.

High-magnification microscopy enables detailed assessment of injury extent, crack detection, and precision in restorative and endodontic procedures following trauma — capabilities that are central to the quality of outcomes at Collins Street Specialist Centre.

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

Our specialists

Dr Gregory Tilley BDSc (Melb), LDS (Vic), FRACDS, MRACDS (Endo) With over 35 years of specialist endodontic experience across the full spectrum of endodontic presentations, Dr Tilley brings considerable depth to complex dental trauma cases. He holds the position of Honorary Senior Fellow at the University of Melbourne.

Prof Chankhrit Sathorn DDS, Grad.Dip.Dent, DClinDent, PhD, MRACDS (Endo) Prof Sathorn is an editorial board member of the *Dental Traumatology* journal, contributing to the international evidence base for traumatic dental injury management and 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 in Istanbul, Dr Timmerman has a specific clinical and academic interest in dental traumatology. She also serves as a clinical demonstrator at the University of Melbourne and is fluent in Mandarin.

Dr Areti Vrochari DDS, DrMedDent (Endo) Dr Vrochari's training in Athens and Freiburg covers the restorative management of traumatised teeth — an area where endodontic and restorative disciplines converge, and where integrated specialist thinking produces the most durable outcomes.

Related treatments

- [**Root Canal Treatment**](/procedures/endodontics/root-canal-treatment/) — Frequently required following luxation injuries, complicated crown fractures, or avulsion. - [**Internal Bleaching**](/procedures/endodontics/internal-bleaching-non-vital-tooth-whitening/) — Traumatised root-treated teeth often discolour over time; internal bleaching can restore a natural appearance without further structural compromise to the tooth. - [**Dental Crowns**](/procedures/prosthodontics/dental-crowns/) — Fractured or root-treated teeth typically require specialist prosthodontic restoration to achieve long-term function and aesthetics. - [**Dental Bridges**](/procedures/prosthodontics/dental-bridges/) — Where a traumatised tooth cannot be retained, a bridge or implant-supported restoration may be considered as part of a longer-term treatment plan. - [**Facial Trauma**](/procedures/oral-maxillofacial-surgery/facial-trauma-reconstruction/) — Dental injuries frequently accompany facial bone fractures. Our oral and maxillofacial surgery team manages the broader facial trauma component where required.

To make an appointment or discuss an urgent presentation, contact the practice on (03) 9650 2726. For a dental emergency during business hours, call ahead and the team will do their best to see you as

quickly as possible. Collins Street Specialist Centre is at Level 8, Manchester Unity Building, 220 Collins Street, Melbourne CBD — directly opposite Town Hall Metro station.
