

Your Guide to Traumatic Dental Injuries

While most traumatic dental injuries occur in children and teenagers, people of all ages can be affected. Usually, such injuries are the result of sports mishaps, automobile accidents or bad falls. No matter what the cause, the type and severity of the injury will determine the treatment necessary.

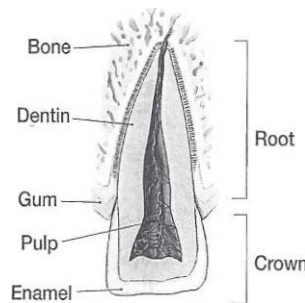
Correct first aid significantly reduces the risk of tooth loss. Dental injuries may affect the inner soft tissue of the tooth, known as the dental pulp. When the injured pulp becomes inflamed or infected, root canal treatment may be needed.

What is endodontic treatment?

"Endo" is the Greek word for "inside" and "odont" is Greek for "tooth." Endodontic treatment (involves) the inside of the tooth.

To understand endodontic treatment, it helps to know something about the anatomy of the tooth. Inside the tooth, under the white enamel and a hard layer called the dentin, is a soft tissue called the pulp. The pulp contains blood vessels, nerves and connective tissue, and creates the surrounding hard tissues of the tooth during development.

The pulp extends from the crown of the tooth to the tip of the roots where it connects to the tissues surrounding the root. The pulp is important during a tooth's growth and development. However, once a tooth is fully mature it can survive without the pulp, because the tooth continues to be nourished by the tissues surrounding it.



Who performs endodontic treatment?

All dentists, including your general dentist, received training in endodontic treatment in dental school. General dentists can perform endodontic procedures along with other dental procedures, but often they refer patients needing endodontic treatment to endodontists.

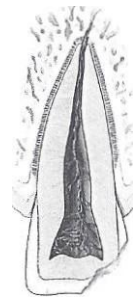
Endodontists are dentists with special training in endodontic procedures. They provide only endodontic services in their practices because they are specialists. To become specialists, they complete dental school and an additional two or more years of advanced training in endodontics. They perform routine as well as difficult and very complex endodontic procedures, including endodontic surgery. Endodontists are also experienced at finding the cause of oral and facial pain that has been difficult to diagnose.

Types of Injuries

Chipped teeth account for the majority of all dental injuries. Dislodged or knocked-out teeth are examples of less frequent, but more severe injuries. Treatment depends on the type, location and severity of each injury. Any dental injury, even if apparently mild, requires examination by a dentist or an endodontist immediately. Sometimes, neighboring teeth suffer an additional, unnoticed injury that will only be detected by a thorough dental exam.

Chipped or Fractured Teeth

Most chipped or fractured tooth crowns can be repaired either by reattaching the broken piece or by placing a tooth-colored filling. If a significant portion of the tooth crown is broken off, an artificial crown or "cap" may be needed to restore the tooth.



If the pulp is exposed or damaged after a crown fracture, root canal treatment may be needed. These injuries require special attention. If breathing through your mouth or drinking cold fluids is painful, bite on clean, moist gauze or cloth to help relieve symptoms until reaching your dentist's office. Never use topical oral pain medications (such as Anbesol®) or ointments, or place aspirin on the affected areas to eliminate pain symptoms.

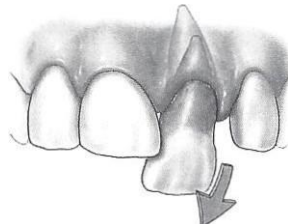
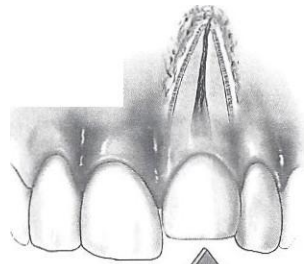
Injuries in the back teeth often include fractured cusps, cracked teeth and the more serious split tooth. If cracks extend into the root, root canal treatment and a full coverage crown may be needed to restore function to the tooth. Split teeth may require extraction.

Dislodged (Luxated) Teeth

During an injury, a tooth may be pushed sideways, out of or into its socket.

Your endodontist or general dentist will reposition and stabilize your tooth. Root canal treatment is usually needed for permanent teeth that have been dislodged and should be started a few days following the injury. Medication such as calcium hydroxide may be put inside the tooth as part of the root canal treatment. A permanent root canal filling will be placed at a later date.

Children between seven and 12 years old may not need root canal treatment since their teeth are still developing. For those patients, an endodontist or dentist will monitor the healing carefully and intervene immediately if



any unfavorable changes appear. Therefore, multiple follow-up

appointments are likely to be needed. New research indicates that stem cells present in the pulps of young people can be stimulated to complete root growth and heal the pulp following injuries or infection.

Knocked-Out (Avulsed) Teeth

If a tooth is completely knocked out of your mouth, time is of the essence. The tooth should be handled very gently, avoiding touching the root



surface itself. If it is dirty, quickly and gently rinse it in water. Do not use soap or any other cleaning agent, and **never** scrape or brush the tooth. If possible, the tooth should be placed back into its socket as soon as possible. The less time the tooth is out of its socket, the better the chance for saving it. Call a dentist immediately!

If you cannot put the tooth back in its socket, it needs to be kept moist in special solutions that are available at many local drug stores (such as Save-A-Tooth). If those solutions are unavailable, you should put the tooth in milk. Doing this will keep the root cells in your tooth moist and alive for a few hours. Another option is to simply put the tooth in your mouth between your gum and cheek. Do not place the tooth in regular tap water because the root surface cells do not tolerate it.

Once the tooth has been put back in its socket, your dentist will evaluate it and will check for any other dental and facial injuries. If the tooth has not been placed back into its socket your dentist will clean it carefully and replace it. A stabilizing splint will be placed for a few weeks. Depending on the stage of root development, your dentist or endodontist may start root canal treatment a week or two later. A medication may be placed inside the tooth



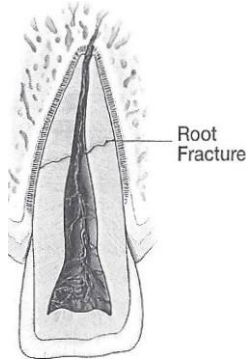
followed by a permanent root canal filling at a later date.

The length of time the tooth was out of the mouth and the way the tooth was stored before reaching the dentist influence the chances of saving the tooth. Again, immediate treatment is essential. Taking all these factors into account, your dentist or endodontist may discuss other treatment options with you.

Root Fractures

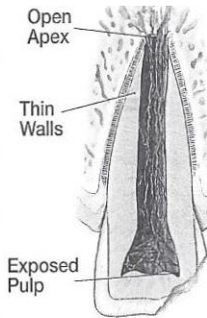
A traumatic injury to the tooth may also result in a horizontal root fracture.

The location of the fracture determines the long-term health of the tooth. If the fracture is close to the root tip, the chances for success are much better. However, the closer the fracture is to the gum line, the poorer the long-term success rate. Sometimes, stabilization with a splint is required for a period of time.



Do traumatic dental injuries differ in children?

Chipped primary (or "baby") teeth can be esthetically restored. Dislodged primary teeth can, in rare cases, be repositioned. However, primary teeth that have been knocked out typically should not be replanted. This is because the replantation of a knocked-out primary tooth may cause further and permanent damage to the underlying permanent tooth that is growing inside the bone.



Children's permanent teeth that are not fully developed at the time of the injury need special attention and careful follow up, but not all of them will need root canal treatment. In an immature permanent tooth, the blood supply to the tooth and the presence of stem cells in the region may enable

your dentist or endodontist to stimulate continued root growth.

Endodontists have the knowledge and skill to treat incompletely formed roots in children so that, in some instances, the roots can continue to develop. Endodontists will do all that is possible to save the natural tooth. These specialists are the logical source of information and expertise for children who are victims of dental trauma.

Will the tooth need any special care or additional treatment?

The nature of the injury, the length of time from injury to treatment, how your tooth was cared for after the injury and your body's response all affect the long-term health of the tooth. Timely treatment is particularly important with dislodged or knocked-out teeth in order to prevent root resorption.

Resorption occurs when your body, through its own defense mechanisms, begins to reject your own tooth in response to the traumatic injury. Following the injury, you should return to your dentist or endodontist to have the tooth examined and/or treated at regular intervals for up to five years to ensure that root resorption is not occurring and that surrounding tissues continue to heal. It has to be noted that some types of resorption are untreatable.