

CRACKED TOOTH SYNDROME

Cracked tooth syndrome relates to a variety of symptoms and signs caused by a crack in a tooth. To improve the chances of saving a cracked tooth, early diagnosis and treatment are important. Most cracked teeth can be saved. If a crack is located and treated early, your dentist may be able to prevent the crack from progressing through the tooth.

The dentist may use different terms to describe the crack, including craze, fracture, crack or split. Sometimes dentists use these terms interchangeably and sometimes to describe a specific type of crack.

Cracked tooth syndrome usually occurs in a molar or premolar but may involve:

- teeth with large fillings or restorations where the crack runs under a weakened cusp (the raised edge of a tooth)
- teeth with minimal or no filling where the tooth has been subjected to heavy biting forces due to grinding
- teeth that have suffered trauma.

Cracks may start in the top of the tooth and run downwards. These cracks may propagate and involve the pulp, nerve and root.

Symptoms and signs of a cracked tooth

- Sharp and erratic pain upon chewing (especially when biting on grainy food) or after release of biting pressure. Not all cracks cause pain.
- Pain or discomfort when the crack is exposed to cold or hot food or liquids.
- Sensitivity to sweet foods.
- Difficulty in pinpointing which tooth hurts or whether the pain is coming from a top or bottom tooth.
- The crack may not be visible to the eye or detectable on a dental X-ray film.
- If the crack extends below the gum, a pocket of gum disease may extend along the root surface.
- Often, a patient will present with a history of other cracked teeth.

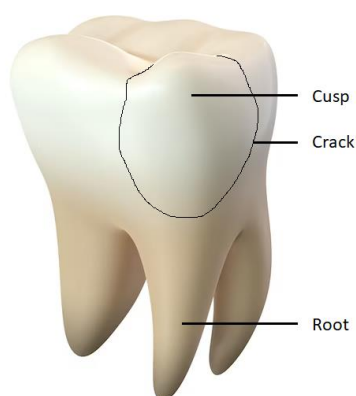
Causes of cracked tooth syndrome

- Cracked tooth syndrome has become more common because people are keeping their teeth longer than in previous generations. As a result, people often have decay and large fillings that have weakened the teeth and made them prone to fracture.
- Many people's lives are more stressful nowadays, leading to clenching or grinding of the teeth, particularly at night. This is called bruxism. Bruxism can cause teeth to crack.
- Over the years, daily wear and tear from clenching grinding and chewing can slowly cause cracks.
- Chewing on hard foods or substances such as ice, sweets or pencils.
- Trauma such as a blow to the teeth, especially if the upper and lower jaws have been rammed together

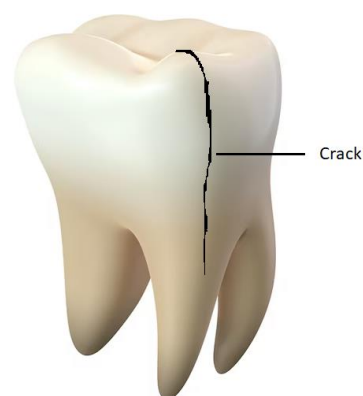
Normal anatomy of a molar



Fractured cusp of a molar



Crown fracture and root fracture of a molar



Diagnosis of cracked tooth syndrome

Diagnosis can be difficult because symptoms are not consistent. Also, cracks can vary greatly in length and location. Often, cracks are not discovered until a variety of symptoms are present. If a cracked tooth is suspected, your dentist will take your dental history and ask you questions about the sensitive tooth.

Diagnosis may involve the following.

The examination

Your dentist may check for:

- signs of tooth wear
- your "bite", that is, the occlusion between the top and bottom teeth
- cracks on the surfaces of teeth
- large fillings with weakened cusps.

Bite tests

Bite tests are helpful in locating the pain. As pinpointing the pain is often difficult, your dentist may ask you to bite on a hard object that is focused on one cusp. This will allow the dentist to localise your bite pressure to one tooth or part of the tooth. When you bite down on the part of the tooth that is cracked, or release the biting pressure, you are likely to feel pain.

Probing of the gums

Your dentist may probe the gums all around the suspect tooth. This sometimes helps to assess the extent of the crack.

Radiographic exam (X-rays)

The dentist may want to take an X-ray film to rule out other causes of tooth discomfort, such as decay. Cracks in teeth rarely show up on X-ray films. Cracks in the root may show up as a loss of bone around the cracked root or give the appearance of an abscess.

Removal of a filling

If the suspect tooth has a filling, your dentist may remove the filling. This will allow the dentist to determine if a crack is present and, if so, the extent and direction of the crack. Some dentists use a magnifying device or an operating microscope to inspect the tooth.

Staining

To test for the presence of a crack, your dentist may apply a coloured dye to the:

- surface of the suspect tooth
- tooth cavity after the filling has been removed
- root of the tooth.

Transillumination

Your dentist may place a special light directly on the tooth surface. If a crack is present, it will block the light. Teeth without cracks allow the light to shine through.

Temperature change

Your dentist may also use ice or hot or cold water to test which tooth is sensitive.

Treatment for a cracked tooth

Early treatment is important. Propagating cracks may be stopped or slowed down, improving the chance to save the tooth. Treatment depends on the extent and position of the crack.

Simple crack: The treatment for most cracked teeth involves removing the weakened cusp and placing a large filling or crown (cap) on the tooth. If more than one cusp is fractured or the tooth is heavily restored, a crown is an effective treatment.

The crown protects the tooth and often prevents the crack from progressing. When the tooth is prepared for the crown and a temporary crown put in place, the pain usually subsides quickly.

Sometimes, before a crown or filling is placed, a stainless-steel band is put in place with a sedative dressing to see if the tooth pain can be stopped. If the discomfort does not stop, the dentist may suggest root canal treatment.

Complex crack: If the crack has progressed to the pulp or has caused inflammation of the pulp, root canal treatment may be needed before the crown or filling is put in place. Root canal treatment requires two or three additional appointments.

If your dentist feels that your case is complicated and requires specialist treatment, the dentist may refer you to an endodontist or prosthodontist. If you have any further questions or concerns about treatment, your dentist will be pleased to discuss them with you.

Untreated cracked teeth

The longer a simple cracked tooth is left untreated, the more likely it will become a complex crack. The pulp inside the tooth may die, and infection in the tooth may occur. It will then be necessary to perform root canal treatment or, in some cases, extract the tooth.

In severe cases, the tooth may split in half. In this case, the tooth usually has to be extracted. A bridge, denture or dental implant may be needed.

Prevention

If you clench your teeth or grind them together (bruxism), particularly at night-time, you can have a special night guard made to protect your teeth. Your dentist can fit you with a night guard, also called an occlusal splint.

- Avoid chewing on hard objects such as ice, hard sweet, pens or pencils.
- Wear a protective mouth guard when playing contact sports.
- Practice good dental hygiene to minimise the need for fillings.

Even with these precautions, teeth can still crack