



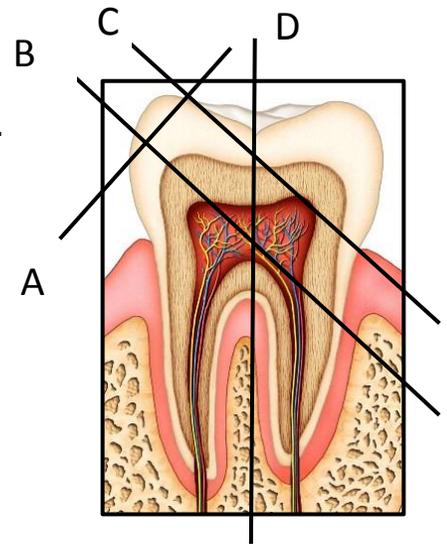
## CRACKED TEETH & HAIRLINE FRACTURES

It is not uncommon to develop cracks & hairline fractures within teeth. The affected teeth can range from those with large fillings to some with no fillings at all. People who clench, grind, have a compromised bite, or chew hard items like pens and ice can develop cracks. Some cracks are asymptomatic (pain free), while others elicit pain from biting, hot & cold foods, or just spontaneously.

### What are some of the type of fractures?

Fractures can range from above-the-gum to below-the-gum. Some may extend into the nerve, while others don't. This diagram shows some of these scenarios:

- A = Above the gum and through enamel only
- B = Above the gum and through enamel, dentin, and nerve
- C = Below the gum and bone, and through enamel, dentin, and nerve
- D = Vertical fracture through every component of the tooth, gum, & bone



### Are all fractures problematic?



No. "Craze lines" are fractures similar to the cracks you see in ice cubes. They are a common occurrence. The cracks you see in ice cubes do not mean the cube will fracture, but if it does break, it will occur along the fracture line. Teeth are similar in this sense. To the left is a tooth with multiple craze lines.

### Why can't you tell me with 100% certainty whether or not my tooth has a crack? Can't you see it?

Many fractures are microscopic and cannot be seen with the naked eye or x-ray. As dentists, we will usually diagnose the fracture by eliminating other possibilities. Oftentimes we will try one or two procedures to see if we can correct the problem,

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so you need to be patient and understand multiple visits may be required before we can come up with a final diagnosis and treatment plan.

On the left is an x-ray of an actual patient who reported mild discomfort for a few months. It was taken AFTER the extraction to show how fractures don't usually show up on films. After trying a few different things (bite adjustments, a filling, and finally a root canal), he decided to extract the tooth. You can see the vertical fracture straight down the root. Surprisingly, he never had extreme pain!



### **If my tooth is fractured, how do you fix it?**

The goal of fixing a cracked tooth is immobilization, similar to the way a cast immobilizes a broken arm. However, just because we immobilized the cracked tooth doesn't mean the pain will stop. This is why we oftentimes place a temporary crown onto the tooth first. If the temporary crown works, we can move onto a permanent crown. If the temporary crown doesn't work, there is no point in wasting your money on a more expensive permanent crown.

If the temporary crown does not work, we may suggest trying a root canal, or at least starting the root canal. This procedure eliminates the nerve of the tooth, and if its successful, a crown can be made. Again, we are not going to advise a crown, or even completing the root canal, if both procedures are unsuccessful in alleviating your pain. There is no point in a large financial investment if the pain won't stop.

### **If the crown works, am I done with treatment?**

Not necessarily. Cracks are an avenue for bacteria to work their way into a tooth. If the nerve becomes infected by the bacteria, you may require a root canal, if it has

not been done already. If there is a crown on the tooth, the root canal will be done through the crown and patched later on.

**If you're telling me I may need a root canal, why don't I have it done from the start?**

You can do this if you wish, but not all cracked teeth require a root canal. The root canal is another procedure that will cost you more time and money. While we are going through the "elimination" phase, we are trying to keep costs at a minimum for you. If the pain goes away after the crown, you don't need the root canal (at this point in time). If the pain doesn't go away, then you need the root canal.

**So if I have a root canal and crown, am I NOW done with treatment?**

Not necessarily. There is no guarantee that a fractured tooth will not become re-infected or develop pain in the future. And we cannot define "the future" for you. It could be a few months or a few years or many years. Fractured teeth are difficult to contend with, and there aren't any steadfast guidelines.

**What if I do all this work and the problems don't go away, get worse, or return?**

You will most likely have to extract the tooth.

**I am not willing to undergo all of this treatment for such a low success rate. If I choose to remove the tooth, what are my options to replace the missing tooth?**

1. Implant
2. Bridge
3. Partial denture
4. No replacement

In summary, please remember that fractured teeth can be extremely difficult and frustrating to deal with, for both you as the patient and us as the dental team. Time and patience are important. There are many unknowns and "what-ifs." If you are unable or unwilling to undergo the multiple steps to try to save your tooth, then sometimes the removal of the offending tooth is a more viable option. As always, we are here to help you and answer your questions.