

## Dental Caries

Dental caries is caused by acid erosion of tooth enamel. Many different types of bacteria normally live in the human mouth. They accumulate (along with saliva, food particles and other natural substances) on the surface of the teeth in a sticky film called plaque. Plaque forms especially easily in cracks, pits or fissures in the back teeth; between teeth; around dental fillings or bridgework; and near the gum line. Some of the plaque bacteria convert sugar and carbohydrates (starches) in the foods we eat into acids. These acids dissolve minerals in the surface of the tooth, forming microscopic pits or erosions that get larger over time.

The damage can occur anywhere the tooth is exposed to plaque and acid, including the hard outer enamel on the tooth crown or the unprotected root of the tooth that has been exposed by gum recession. [Caries can penetrate](#) the protective enamel down to the softer, vulnerable dentin (main body of the tooth) and continue through to the soft tooth pulp and the sensitive nerve fibers within it.

Early caries may not have any symptoms. Later, when the decay has eaten through the enamel, the teeth may be sensitive to sweet foods or to hot and cold temperatures.

The dentist will examine the teeth visually and will probe the teeth with an instrument called an explorer to determine if there are pits or areas of damage. Periodically, or if the dentist suspects hidden caries, X-rays will be taken by looking at the teeth.

How long caries lasts is determined by the stage at which it is found. White spots, indicating early caries that has not yet eroded through the enamel, may be reversed if acid damage is stopped and the tooth is given a chance to repair the damage naturally. Caries that has destroyed enamel cannot be reversed. Most caries will continue to worsen and deepen and with time, the tooth may decay down to the root. The amount of time the erosion takes will vary from person to person. Caries can erode to a painful level within months or it can take years to reach that stage.

Cavities can be prevented by reducing the amount of plaque and bacteria in the mouth. The best way to do this is by [daily brushing and flossing](#) and professional dental cleanings twice a year. You also can reduce the amount of acid in your mouth by eating sugary or starchy foods less frequently during the day. Your mouth will remain acidic for several hours after eating, so snacking throughout the day is more likely to lead to caries than avoiding between-meal snacks. Chewing gum that contains xylitol helps to counteract the acidity that occurs after eating.

Teeth can be strengthened by [fluoride](#). A dentist can evaluate your risk of caries and then suggest appropriate fluoride treatments. In children, new molars can be protected by having the dentist apply a sealant as soon as the teeth come fully into the mouth.

The standard treatment for caries is to [fill the tooth](#). After the dentist removes the decayed material in the cavity, the cavity is filled. If a cavity is large with extensive erosion, the remaining tooth may not be able to support the amount of filling material that would be needed to repair it. In this case, the dentist will remove the decay, fill the cavity, and cover the tooth with an artificial crown.

Sometimes the crown of the tooth remains relatively intact, and there is more damage in the interior of the tooth and will need root canal procedure. In this procedure, the dentist removes the tooth's pulp and replaces it with an inert material. In most cases, the tooth's natural crown will need to be replaced with an artificial [crown](#).

If a cavity goes undiagnosed, it likely will cause the tooth to erode significantly. Eventually, the tooth may be destroyed by uncontrolled decay.