

## Dental Caries

In Latin caries means rot or rotten. The word caries was used in medieval times to describe rot in bones and teeth. Rotten teeth are the signs of a disease called dental caries or tooth decay. Many people refer to tooth decay as cavities; however, a cavity, or a hole, is the end result of tooth decay or caries.

According to the CDC dental caries remains the most common chronic disease of children aged 6 to 11 years (25%) and adolescents aged 12 to 19 years (59%). Tooth decay is four times more common than asthma among adolescents aged 14 to 17 years (59% compared with 15%). Many adults also have untreated tooth decay—28% of those aged 35 to 44 years and 18% of those aged 65 years and older. Once dental caries has been established, the disease requires treatment. A dental carious lesion or a cavity only grows larger and more expensive to repair the longer it remains untreated.

Dental Caries is a bacterial disease. Caries is caused by acids produced by bacteria in dental plaque. Plaque is a soft, sticky, thin film of bacteria, and food debris that develops on the tooth surface about 24 hours after the tooth is cleaned. Mutans streptococci are a group of bacteria that grow in plaque and can cause caries. These bacteria adhere well to the tooth surface, produce higher amounts of acid from sugars than other bacterial types, can survive better than other bacteria in an acid environment, and produce extracellular polysaccharides from sucrose. Infection with mutans streptococci usually happens early in childhood via transmission from the mouths of parents or playmates. Eventually soft plaque mineralizes becoming calculus (hard plaque or tartar), which cannot easily be removed with a toothbrush.

Dental Caries is dependent on dietary sucrose or sugar. Mutans streptococci use sugar to produce acids which attack the tooth surface. The acids in plaque dissolve the enamel surface of the tooth and create holes in the tooth or dental cavities. A diet with a high sugar intake will increase caries risk. Caries risk is also dependent on the frequency of eating. Each time that plaque bacteria come into contact with food or drink containing sugar they use them to produce acids. If these acids are not buffered or neutralized by saliva they dissolve the surface of the tooth. People who snack throughout the day are at an increased caries risk.

Dental caries initially involves only the enamel and produces no symptoms. Symptoms produced by dental caries usually appear late in the process. As the caries reaches the dentin it causes pain, at first when hot, cold, or sweet foods contact the tooth. As the caries grows and becomes larger it can affect the nerve, requiring a root canal or cause a tooth fracture, which may require extraction. When caries becomes visible they are often visible as small holes or pits or discoloration on the tooth surface.

When caries has been detected the treatment is to have the tooth restored to prevent the caries from getting larger, which could lead to more extensive and expensive treatments, and infecting other teeth with caries as well. Treatment usually consists of removing the caries and filling the cavity that remains with a filling material.

Dental caries is a preventable disease for most people with regular brushing, at least twice a day, and flossing, at least once a day. Also drinking water with fluoride and using toothpaste with fluoride helps to remineralize and strengthen teeth. Finally, regular checkups and cleanings every 6 months with your dentist can help to keep your teeth healthy.

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