

Tooth Decay (dental caries)

What is dental decay?

Dental decay happens when the enamel and dentine of a [tooth](#) become softened by acid attack after you have eaten or drunk anything containing sugars. Over time, the acid makes a cavity (hole) in the tooth. 'Dental decay' is the same as tooth decay and is also known as 'dental caries'.



What causes dental decay?

Dental decay is caused by plaque acids that gradually dissolve away the enamel and dentine of the tooth. Decay damages your teeth and may lead to the tooth needing to be filled or even taken out.

What is enamel?

Enamel is the hard, protective outer coating of the tooth and is the hardest part of the body. It does not contain any nerves or blood vessels and is not sensitive to pain.

What is dentine?

Dentine lies under the enamel, forming most of the tooth, and it can be very sensitive to pain. Dentine covers the central 'pulp' of the tooth.

What is the pulp?

The pulp is a soft tissue which contains blood vessels and nerves and is in the middle of the tooth.

What is plaque?

Plaque is a thin, sticky film that keeps forming on your teeth. It contains many types of bacteria.

Why do my teeth decay?

Decay happens when sugars in food and drinks react with the bacteria in plaque, forming acids. Every time you eat or drink anything containing sugars, these acids attack the teeth and start to soften and dissolve the enamel. The attacks can last for an hour after eating or drinking, before the natural salts in your saliva cause the enamel to 'remineralise' and harden again. It's not just sugars that are harmful: other types of carbohydrate foods and drinks react with plaque and form acids. (These are the 'fermentable' carbohydrates such as the 'hidden sugars' in processed food, natural sugars like those in fruit, and cooked starches.)

Snacking between meals on sugary or acidic foods and drinks can increase the risk of decay, as the teeth come under constant attack and do not have time to recover. It is therefore important not to keep snacking on sugary foods or sipping sugary drinks throughout the day.

What are the signs of dental decay?

In the early stages of dental decay there are no symptoms, but your dentist may be able to spot a cavity in its early stages when they examine or [x-ray](#) your teeth. This is why you should visit your dentist regularly, as small cavities are much easier to treat than advanced decay.



What happens if I have a cavity?

Once the cavity has reached the dentine your tooth may become sensitive, particularly with sweet foods and drinks, and acidic or hot foods.

As the decay gets near the dental pulp you may suffer from toothache. If the toothache is brought on by hot or sweet foods this may last for only a few seconds. As the decay gets closer to the dental pulp the pain may last longer and you may need to take painkillers - paracetamol or ibuprofen - to control the pain. You must visit your dentist straight away as the tooth is dying and you may develop a dental abscess if it is not [treated](#).

What happens if I don't get it treated early?

Toothache is a sign that you should visit a dentist straight away, as it is a warning that something is wrong. If you don't do anything, this will usually make matters worse and you may lose a tooth that could otherwise have been saved.

What areas of my teeth are more likely to decay?

The biting surfaces of the teeth and the surfaces between the teeth are most likely to decay, as food and plaque can become stuck in these areas. But any part of the tooth can be at risk.

What treatment will I need?

If the decay is not too serious, the dentist will remove all the decay and restore the tooth with a [filling](#). Sometimes the nerve in the middle of the tooth can be damaged. If so, the dentist will need to carry out [root canal treatment](#) by removing the nerve and then restoring the tooth with a filling or a crown. If the tooth is so badly decayed that it cannot be restored, the dentist may have to take the tooth out.

Will I always need a filling?

No. In the very early stages of decay, your dentist may apply a fluoride varnish onto the area. This can help stop further decay and help 'remineralise' the tooth. However, it is important to follow the cleaning routine your dentist or hygienist suggests, using [fluoride](#) toothpaste to prevent decay starting again.

Is there anything I can do to protect my teeth against decay?

As each of the adult molars (back teeth) appears, and if the tooth is free from decay, a 'fissure sealant' can be used to protect the tooth. The sealant is a plastic coating that fills all the little crevices in the tooth surface, creating a flat surface that is easier to clean. This is called a '[pit and fissure sealant](#)'. Adults can also have this treatment if the teeth are free from decay. Your dentist will discuss whether this is right for you.

What can I do to prevent decay?

The best way to prevent dental decay is by brushing your teeth thoroughly twice a day with fluoride toothpaste, making sure that you brush the inner, outer and biting surfaces of your teeth. Children up to three years old should use a toothpaste with a fluoride level of at least 1000ppm (parts per million). Three-year-olds to adults should use a toothpaste that contains 1350ppm to 1500ppm of fluoride. Using 'interdental' brushes, or dental floss or tape also helps remove plaque and food from between your teeth and where they meet the [gums](#). These are areas an ordinary toothbrush can't reach.

Is there anything else I can do?

Visit your dentist regularly, as often as they recommend, and have sugary and acidic food and drinks less

often. Avoid snacking between meals to limit the times your teeth are under attack from acids.

Chewing [sugar-free gum](#) for up to twenty minutes after a meal can help your mouth produce more saliva, which helps to cancel out any acids which have been formed.

How can my dentist and hygienist help me prevent decay?

Your dentist or [hygienist](#) will show you what areas you need to take most care of when cleaning. They will also show you how to brush and floss correctly.