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## Tooth decay

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### Summary

- Tooth decay is a diet-related disease.
  - It is caused by the bacteria in your mouth converting sugar into energy and producing acid as a waste product.
  - Tooth decay can start as a white or dark spot on your tooth and develop into a hole.
  - The saliva in your mouth helps protect against tooth decay, and can repair tooth decay in its early stages.
  - If you have a dry mouth (for example due to dehydration, some medical conditions, or using certain medications or drugs) your risk of developing tooth decay is greater.
  - You can prevent tooth decay by eating a healthy diet, drinking plenty of tap water instead of sugary drinks, brushing your teeth twice a day using a fluoride toothpaste, and flossing.
  - Your dentist can treat tooth decay too. If you visit your dentist regularly (once or twice a year) you can discover tooth decay early before it needs a filling.
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### What is tooth decay?

Tooth decay (otherwise known as dental caries) is a common diet-related disease that leads to the loss of mineral from adult and baby teeth. In its early stages it can appear as a white or dark spot on the tooth, but as more mineral is lost a cavity or hole may appear.

Further mineral loss may lead to the cavity extending into the centre of the tooth (the pulp), which may lead to toothache.

### How tooth decay occurs

Many bacteria live in your mouth and on your teeth in the dental plaque. These bacteria use the sugars in the food you eat as the energy they need to live.

In converting sugar to energy, the bacteria in your mouth produce acid as a waste product. This acid dissolves the crystals of your teeth and causes mineral loss, which can lead to signs of tooth decay such as white spots and cavities.

Your saliva works to prevent tooth decay from occurring. It washes sugar out of your mouth and into your stomach, stops acid from causing damage, fights bacteria and can repair the early stages of tooth decay by repairing tooth mineral.

If the amount of acid from the bacteria on your teeth outweighs the protective effect of your saliva, then tooth decay will occur.

### Prevention of tooth decay

Tooth decay can be prevented by:

- eating a healthy well balanced diet
    - reduce how often you eat sugary foods or have sugary drinks
    - limit sugar intake to mealtimes
    - drink tap water (containing fluoride) rather than soft drink or juice
    - be conscious of hidden sugars such as in coffee or tea, snacks, and cereals
  - brushing twice a day and flossing – good oral hygiene will reduce the harmful bacteria. Remember that brushing alone will not remove all the bacteria, sugar and acid that have built up in between your teeth. If you
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forget to floss, that can be up to 30 per cent of each tooth you're forgetting to clean!

- using toothpaste containing fluoride and drinking fluoridated tap water – fluoride protects the teeth against acid
- chewing sugar-free chewing gum after meals to increase saliva flow – saliva is very important for protecting your teeth from decay
- staying well hydrated as this improves your saliva – remember that dehydration can reduce the amount of saliva you make so drink lots of tap water
- if recommended by your dentist, having the deep grooves on your teeth sealed with dental material called a fissure sealant – this has been shown to prevent tooth decay in the biting surfaces of your teeth
- avoiding putting any sweet drinks (such as juice, soft drink or cordial) in babies' bottles or toddlers' sippy cups. Even bottles of milk can cause tooth decay for babies if they grow accustomed to sipping on them throughout the night, as the sugars continue to wash over the tooth surface while they sleep
- if you have sugary food but are unable to brush your teeth soon after, drinking some tap water to wash the sugars out of your mouth. Wiping babies' teeth with a moist face cloth after their night bottle is ideal if they are too young to brush.

### Saliva helps prevent tooth decay

Saliva is a powerful natural defence against tooth decay. It can wash sugar out of your mouth into the stomach, stop the damaging effect of acid made by bacteria, fight bacteria and reverse the early stages of tooth decay by repairing tooth mineral. A reduced flow of saliva (dry mouth) can increase your risk of tooth decay.

Causes of dry mouth might include:

- medications – some **medicines** and **drugs** can affect your salivary glands and reduce the amount of saliva that they can make, leading to a dry mouth
- dehydration – working in a dry environment and not drinking water often enough can lead to a decrease in saliva production. Additionally, high intake of caffeine found in coffee, tea, chocolate and cola drinks can reduce fluid levels in the body and reduce saliva
- diseases or conditions that affect the saliva glands– for example **Sjogren's syndrome**.

If you have a constant dry mouth, consult your dentist to find the cause.

### Treatment of tooth decay

Early tooth decay is reversible. Saliva can deposit mineral back onto the tooth surface, and improvements in your diet and oral hygiene make a big difference. Your dentist can treat early areas of tooth decay with fluoride or other products to help with this process. Regular visits to the dentist (at least once or twice a year) are important so that decay can be identified at this early stage when a filling can be avoided.

In cases of more advanced tooth decay a hole may have formed that may require a 'filling'. Your dentist will remove the damaged part of the tooth and repair the tooth with a filling material. It is important to have this done early to help the strength of the tooth and prevent bacteria from damaging its centre.

As decay progresses, people often experience sensitivity to sweet, cold or hot food and drink. If you feel any such discomfort, consult your dentist as soon as possible to have the decay treated.

If your tooth has been aching then tooth decay may have reached the centre of the tooth and the nerve inside in the tooth may require treatment (root canal).

Your dentist will give you advice about how to eliminate the cause of your tooth decay. Just filling a hole will not stop tooth decay from occurring in other areas of the mouth or around the new filling. So if your dentist has found tooth decay, focus on the things that you can do to prevent further decay in the future.

### Where to get help

- Your **dentist**
- **Dental Health Services Victoria** provide public dental services through the **Royal Dental Hospital of Melbourne** and community dental clinics, for eligible people. For more information about public dental

- services, Tel. **(03) 9341 1000** or **1800 833 039** outside Melbourne metro
- **Australian Dental Association 'Find a Dentist'** or Tel. **(03) 8825 4600**

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