

## Dental Decay - Causes and Prevention

Below is some information that will help you to understand why people get decay (caries) in their teeth, and things that can be done to prevent this.

Dental decay is caused by bacteria that lives naturally in the mouth, this bacteria is very prevalent and concentrated in **bacterial plaque** (the thin layer of dirt that forms on the teeth daily). The fuel for this bacteria to cause decay in the mouth is **sugar** from food and drink. Dental decay is gradual process requiring **time**. It starts with repeated very small amounts of damage to the teeth, and accelerates as the decay grows bigger.

So to put it simply, dental decay requires the presence of bacterial plaque, sugar and time.

A small amount of damage occurs each time we consume food or drink that contain sugars, or those that can be broken down into sugars. If we do not eat or drink these things for around 5 hours after the last exposure, minerals in saliva are able to repair the very early damage. However, if this repair process is interrupted by adding more sugars, increased damage will occur along with the lack of repair. Repeated exposure to this damage process accumulates over time and will cause tooth decay no matter how well we clean our teeth.

Once decay has penetrated the outer enamel layer, it can no longer be repaired by saliva or fluoride toothpaste and will require a filling to stop the decay from progressing towards the nerve of the tooth.

The **frequency and timing of sugar intake** is more critical in causing decay than the total amount of sugar. For instance, somebody having 5 sugars in coffee with breakfast, lunch and dinner but no other sugars and regular effective cleaning with a fluoride toothpaste will unlikely experience tooth decay. Somebody with equivalent cleaning and only having half a sugar in coffee for morning tea and afternoon tea, is far more likely to experience tooth decay if this habit persist over time.

If you want to prevent tooth decay, **you should avoid sugary foods and drinks in-between meal times** for the bulk of the week. If you are having sugars, it is far safer to consume them with or after main meals such as for a dessert or a sugary drink consumed with your meal. It is ok to have some sugars once or twice a week maximum in-between meals. Cleaning your teeth after sugar exposure will not eliminate the risk of it causing decay.

There will always be some occasions when sugar exposure may increase for a short time such as Christmas, Easter and studying for exams! As long as this is not too frequent or for too long, you should still be able to indulge now and again without major damage to your teeth. Just try your best to be mostly good most of the time.

Some people are unfortunately more prone to tooth decay as a result of factors such as: aggressive bacteria naturally in their mouth, deep fissures and pits, weak or poorly formed tooth structure, poor saliva flow, existing restorations. These people should be even more vigilant to avoid all possible sugar consumption in-between meals.

Tooth structure doesn't weaken in the way bones can over time. It is an old wives' tale that calcium is sucked out of teeth with age or pregnancy. Females can certainly experience more tooth decay during pregnancy as an indirect result of altering their dietary and snacking habits due to the effect pregnancy has on the body. Increased consumption frequency of sugar containing foods due to nausea or poor energy levels will increase the risk of decay. Erosion of tooth enamel due to excessive vomiting, or inability to clean teeth well with fluoride toothpaste due to nausea will also increase the risk of tooth decay. If you are pregnant, it is entirely safe to attend the dentist for treatment, examinations and most importantly preventative advice that is most appropriate to your own personal situation.

Removal of bacterial plaque daily by cleaning of teeth is an important step in the prevention of tooth decay. It is just as important to apply **protective fluoride** at this time in the form of toothpaste. Fluoride at the correct dose is scientifically proven to be a safe and extremely effective medication for the prevention of tooth decay. If you use an “alternative” or so-called “natural” type toothpaste such as charcoal, not only will you lose the protective benefits of fluoride, but you may also be causing yourself harm. “Alternative” medicines and products are not subject to the same rigorous safety testing that therapeutic goods must go through. We have unfortunately witnessed first-hand many patients in our practice who have experienced significant decay following poor advice to use non-fluoride containing toothpaste for an extended period of time.

Patients at an increased risk of tooth decay may be advised to use a higher concentration fluoride toothpaste or a daily mouthwash at a separate time of day to normal brushing, to aid with increased protection against and repair of dental decay.

**The most important time of day to clean teeth is before sleep.** For most people this is night time, but for shift workers it could be any time of day. You should not rinse out all of the protective toothpaste but it is ok to drink water afterwards. You should not eat or drink anything else other than water after cleaning your teeth before sleep, if you do, you should clean your teeth again.

It is extremely important for the health of your child’s teeth that you do not give them milk after cleaning their teeth at night. This includes breastmilk, bottled milk and formula. Lactose in milk will readily turn to sugars that cause tooth decay. If they have a bottle in bed, it should only contain water. This may be difficult for many parents who can only get their child to sleep by giving milk. Unfortunately the consequence of this is often painful toothache, infections and treatment under a general anaesthetic. Most of the dentists at Dental Centre Maroochydore are parents themselves, and would be happy to offer advice on how to best deal with this situation.

It is also important that the in-between meal snacks that you give your child, as well as those you eat yourself, do not contain sugars.

The following is a list of regularly consumed foods and drinks containing sugars that can cause tooth decay. **These should be avoided on the whole in-between meals:**

Fizzy drinks and energy drinks; Juice and cordial; sugar, syrups or honey added to hot drinks; flavoured milk and iced coffee; hot chocolate and mocha; dried fruit; chocolate, lollies and biscuits; sugary mints and chewing gum; potato chips; cakes, pastries, muffins and doughnuts; flavoured yoghurt, ice cream, icy-poles etc.....

**Less damaging foods and drinks could be:**

Water; Tea or coffee without added sugars; milk (not at night); cheese and plain crackers; nuts, fresh fruit or vegetables; sandwich or toast; sugar free yoghurt; sugar free mints or chewing gum etc.....

Grazing on even the less damaging foods throughout a day will lead to an increased risk of tooth decay. Complex intrinsic sugars in many healthier foods will be slowly broken down into sugar by enzymes in saliva over time. If having a snack, it is better to consume it over a shorter period of time so that repair can start happening sooner.

If you are unsure if food that you or your child eat regularly are damaging to your teeth or not, consider keeping a diet diary for a few days of every single thing that you eat or drink. We are always happy to discuss with you ways in which you can reduce your risk of tooth decay.