

Diet and Oral Health by Dr. Ryan Farah DDS (Hons.)

The foods you choose to eat can affect your general health and more specifically, the health of your teeth and gums. Maintaining your child's oral health is an important part of growth and development, and as such should start at an early age. Dental decay, or caries affects children of all ages, and can occur shortly after the eruption of their first tooth (~6 months). However, what you may not know is that dental decay is the most common chronic disease of children, affecting 60-90%! In fact, tooth decay is four times more common than asthma among adolescents.

So what is the cause of caries?

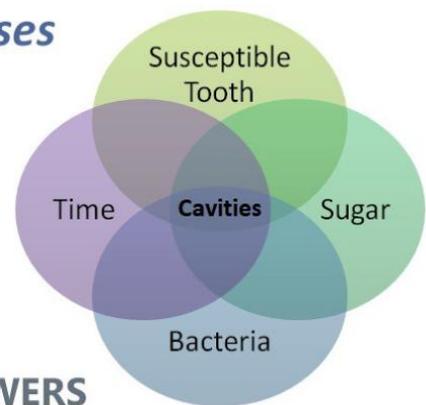
Firstly, we need a tooth for the decay occur on. These are readily available as most children by the age of three years old have 20 teeth, and 24 teeth by the age of six years old. With all those teeth, there is a selection decay to occur on. This leads us to the next part of the equation.

Bacteria! Our oral cavity has a healthy supply of these little critters. Over 700 strains of bacteria have been detected in our mouths, and while most of these are harmless, there are a few in the mix that cause problems. One such strain is called *Streptococcus mutans*, which is the main cause of caries in humans.

What Causes Cavities?



ORAL ANSWERS



This leads us to the most important part of this process which is sugar. This is the part which comes from our diet and is therefore highly controllable by us as parents. So what types of sugars are there?

Intrinsic sugars - These are sugars that are naturally found in fruits and vegetables. They are still contained within the cell structure of these foods, and are therefore difficult for bacteria to feed on and metabolise. These unprocessed sugars are the safest type. **Be aware that blending or drying of these foods may cause the cell structure to break down, releasing the "intrinsic" sugars which will then become more harmful.**

Extrinsic sugars - These are sugars that are added to foods, and found naturally in some. These are the leading cause of dental decay. They can be further divided into milk sugars (lactose - found mainly in dairy products), and non milk sugars.

Non milk extrinsic sugars or NME's (sounds like enemies!) are the real bad guys. Consumption of these is high amounts and frequency will cause your teeth to decay. They are found in soft drinks, table sugar, sweets, chocolates, candies and biscuits to name a few. Studies show that the frequency of intake plays a more important part in the caries process than the amount consumed. The WHO currently recommends that the frequency of intake of these sugars should be limited to less than 4 servings/day to reduce the risk of dental caries.

To sum this up, we look the cariogenicity of food and drinks. This is just a fancy word for comparing what causes cavities. Intrinsic sugars are the least cariogenic (least ability to cause decay), followed by milk extrinsic sugars, and finally non-milk extrinsic sugars.

Once sugars are available to the bacteria in your oral cavity, they use the sugars as a food source. During bacterial metabolism (or breakdown of food to produce energy), acids are produced. These acids then cause the minerals on your teeth to break down - a process referred to as demineralization. Luckily, our saliva acts as a buffer for this process, and causes just the opposite - remineralization. Once demineralisation outweighs remineralization, tooth decay occurs.

During the first years of life and well into adolescence, parents play a significant role in a child's eating behavior. Sugar intake during these years and throughout life is of great concern to the dentist due to sugar's role in the formation of dental caries. Parents are often targeted as preventative means since they influence children's developing preferences and eating behaviors. They have the ability to make certain foods available and act as role models of eating behavior. The process of weaning, described as gradually introducing an infant to what will be their adult diet is ultimately controlled by the parents. Good weaning practices by the parents in terms of limiting sugar intake can have a major influence on both immediate and future dental health. Recently published reports suggest children be weaned on foods and drinks with as little non milk extrinsic sugars as possible.

What dietary elements cause cavities?

Number and frequency of sugary drinks, length of time taken to consume acidic drinks, eating processed starches (bread, cereals, pasta, fries, chips etc), eating fermentable sugars (table sugar, candy etc), Intake of long lasting sources of sugars (hard candies, toffee, lollipops)

Dr. Ryan's Recommendations:

- Drink plenty of water - eight 8 oz glasses is a good starting point!
- Eat nutrient-rich, whole foods. Especially those loaded with calcium, phosphorus, magnesium, vitamin K and vitamin D. Foods in this category include leafy green vegetables, nuts, seeds, hard aged cheeses, plain yogurt, beans, mushrooms, fish and eggs.
- Increase the amount of arginine in your diet. Eat more spinach, lentils, nuts, eggs, whole grains, meat, seafood, and soy.
- Eat fruits and vegetables every day. such as lettuce, carrots, tomatoes, celery, pears, bananas etc.
- Raw veggies can help remove plaque from your teeth (apples, carrots, bell peppers, etc). Eating an apple after lunch will help to remove material that has adhered to the surface of your teeth. Apples also contain naturally occurring xylitol, which studies have shown help prevent cavities.
- *A quick word on xylitol - It's a naturally occurring sugar compound that does not contain the cariogenic potential of refined sugars. In fact, its action is quite the opposite, and can help prevent cavities! It can be used as a sugar substitute in food and drinks where sweetness is required.
- Limit snacking, and especially in between meal snacks. Remember that its more about the frequency of consumption rather than the amount of sugar consumed. A better snacking food are dairy products such as cheese and milk