

Why do I get cavities?

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Q: My brother never brushes his teeth and eats candy all the time but never gets cavities, meanwhile I always eat right and take care of my teeth and I still get cavities! Where do my cavities come from?

A: Almost every family has a story just like this, some people seem to get more cavities than they should while others who should get away scot-free, and it just doesn't seem fair. "It's genetic" is a common explanation, and that's partly true. There's a lot of mythology about what actually causes cavities, but it's time to set the record straight.

Dental caries (cavities) are caused by acid. More specifically, they are caused by lactic acid produced by some species of bacteria. Cavities are not caused by candy, soda, sweet fruit, aliens, or Great Britain. Our mouths are naturally inhabited by an amazingly diverse ecosystem of bacteria that rivals even our gut! Thousands of species of bacteria naturally live in our mouths at all times, and they eat exactly what we eat (they just take smaller bites).

Bacteria, given time, will attach to our teeth and build a sticky glue (glucans) to hold it there. As it digests sugars in our food (specifically glucose, found in common table sugar) it creates lactic acid as a waste product which it releases into the space between itself and the tooth, which is sealed tight by the sticky glue (glucans). This is where the real problems begin, this acid begins to eat away at your tooth, demineralizing the enamel. Over time the acid eats a hole in your tooth, which we lovingly refer to as a cavity. Really acidic foods like soda, grapefruit juice, lemons, coffee, etc. have similar demineralizing effects, while the sugar in them also contributes to bacterial growth.

So how do we stop this process? First, brushing AND FLOSSING removes the built up colonies of bacteria by good old fashioned mechanical scrubbing action. Toothpaste is there to provide fluoride (and prom-ready fresh breath!). Fluoride in toothpaste helps replace missing minerals from MINOR acid damage and increase the strength of the enamel (fluoride mineralized enamel is more acid resistant

than normal calcium-mineralized enamel). So is it still worth your time to brush if you don't have toothpaste? YES! Bacteria removal is priority 1. After a few days with no brushing the bacterial colonies grow up enough that they require a professional cleaning to completely remove them.

Second, our saliva is a powerful tool of protection. Saliva serves as a buffer to neutralize the acid in things we eat and drink. This is why it's possible to drink a glass of orange juice without it destroying our enamel. However, the sticky glue produced by bacteria keeps our saliva away from the acid it produces. To counteract that, our saliva is full of proteins that coat our teeth and prevent bacteria from sticking. Different people make slightly different variations of these proteins, some of which don't work as well as others. So yes, your genes play a role in cavity prevention!

Third, different people naturally have different types of bacteria inhabiting their mouths, some of which are more harmful than others! This is why dental caries are considered an infectious, communicable disease, that is to say, cavities are contagious! The bacteria inhabiting your mouth you largely picked up when you were very young, probably from your parents and family. Sharing sodas, kissing, taking a bite of your friend's cheesecake when they're not looking, all of these things can serve to colonize yourself with exciting new microbial neighbors! Mostly, it doesn't make a difference, but it's possible to acquire more pathogenic strains of bacteria from those around us.

The most important way to prevent cavities is by forming good habits. Don't sip acidic drinks (diet soda) from your huge 96 ounce on your desk all day, brush after meals, don't forget to floss, and if dry mouth is a problem keep sugar free gum with xylitol (which has been shown to reduce cavities) handy. Make appointments for regular professional cleanings! Regular dental cleanings/checkups will catch problems while they're small, preventing excess time and money spent in a dental chair.

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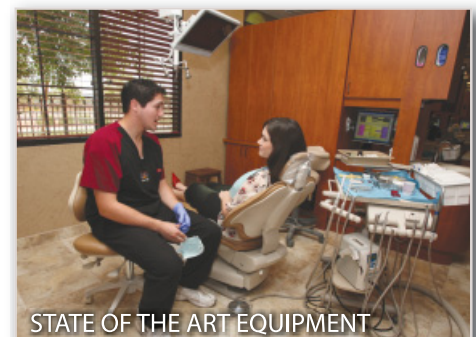
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Dr. David Rush attended Brigham Young University for Undergrad degrees and received his Doctorate from the University of Missouri-Kansas City School of Dentistry. After graduation, Dr. Rush and his family moved to Arizona, and opened Ahwatukee Family Dental. Dr. Rush is a member of the Central Arizona Dental Association, Arizona Dental Association, The Dental Organization for Conscious Sedation, The Academy of General Dentistry, and The American Academy of Cosmetic Dentistry. Just recently, Dr. Rush opened Fulton Ranch Dental in Chandler, located at 4909 South Alma School Road, Suite 1. You can reach the Chandler office at 480.895.7070. Dr. Rush's Ahwatukee Family Dental office is located at 11022 South 51st Street, Suite 105. The phone number there is 480.893.7674



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