

A sunburst graphic with numerous thin, light gray lines radiating from a central point behind the text.

Healthy Moms Podcast

BY **Wellness Mama**[®]
simple answers for healthier families

Episode 3: How to Improve Your Oral Health

Katie: Hi, I'm Katie from wellnessmama.com. Welcome to episode three of the Wellness Mama Podcast where I provide simple answers for healthier families. This episode is the oral health episode. And our interesting fact today is that the average human produces 25,000 quarts of saliva during their lifetime. That's enough to fill two swimming pools. And saliva is important for protecting tooth enamel, which is the hardest part of the human body.

Today's episode is actually an interview that I did several years ago. It was part of the Healthy Mouth World Summit, along with dental experts from around the world. I'm interviewed by Will Revak of orawellness.com. And this is replayed with permission. If you wanna find out more about the Healthy Mouth World Summit, go to wellnessmama.com/go/healthymouth. And here's the interview.

Will: So let's just jump right into this. How did you become interested in oral health to begin with?

Katie: It's been kind of a gradual process for me, actually. As I switched to a more natural diet and lifestyle as part of my wellness journey, it came naturally. But I also resisted it for a long time, since I'd always been under the impression that oral health was somewhat separate of nutrition and it revolved mainly around brushing-and-flossing care. So as I started to read this information and see it in my own mouth, I was fascinated, but also a little hesitant.

And I'd had a lot of cavities as a kid, and I knew I wanted to avoid this for my children. And I read books like "Cure Tooth Decay" and "Nutrition and Physical Degeneration" by Dr. Weston Price. And they talked about the role of nutrition in oral health, and the possibility that you could actually heal or reverse tooth decay, and improve overall oral health with nutrition and lifestyle changes. And the pieces started to fall into place in my own life. And it just started to make a lot of sense that just as the rest of the body is capable of regenerating itself that the teeth would be able to do this also if we gave it the right tools.

Will: Yeah. Exactly. Very well put. So what personal experience have you had with improving your family's oral health?

Katie: It's been pretty drastic. To give you a little back story, as a kid, I had my fair share of dental problems. Starting with, I had a piece of tough tissue between my front teeth that let me have a lovely embarrassing gap between them for most of the beginning of my life. And a dentist eventually cut that and pulled my teeth together with rubber bands, which was painful. And then after that, I had really inflamed gums there for a very long time and a scar that was really noticeable in my gums, and it didn't seem to be healing. And later on, I had to have two baby teeth pulled because they wouldn't fall out on their own. I had four impacted wisdom teeth pulled. And I had braces for almost three years, including the gamut of headgear, rubber bands, the plate on the top of my mouth, the whole shebang. Prior to braces, my teeth were horribly out of alignment. I actually asked my mom to try to find a picture of my teeth before braces so I could show you guys. And she couldn't find one because just I didn't smile, basically.

And the whole time I had braces and for months afterwards, my gums were always really inflamed and painful. And I later partially tied this to a latex allergy that was from the rubber bands and the braces. But I did, I brushed and flossed religiously prior to having braces, while I had braces, and it didn't ever seem to do anything good for the puffy gums. And when my braces were removed, the pieces of the surface of my teeth were actually pulled off with the brackets that they've been glued to the teeth, and I got several cavities in the months that followed that. And my teeth also became really sensitive, and I couldn't even eat cold food or

drink something cold without cringing. And the thought of biting into a popsicle, just thinking about it, made me literally shiver.

So in high school, I continued to brush and floss twice a day, regularly per dentist's instructions. My diet was definitely very far from optimal, and I continued getting cavities, but I attributed this to the sugar sitting on my teeth. Which is what my dentist had explained was the cause, that you know the sugar sitting on your teeth, and the plaque opens the door for dental problems.

So fast forward past college and getting married, and my diet had improved some. But I continued to still get the occasional cavity. And with the pregnancy with our first child, my teeth became even more sensitive and several cavities cropped up, and my dentist explained that this was just normal during pregnancy. Now in hindsight, that probably should have been my first clue that there was some role of nutrition in oral health. Because, obviously, there's an increased need in the body for minerals, and vitamins when you're pregnant, since the baby needs those. So important nutrients from my body, or the foods I was eating were getting passed to the baby. And if they weren't enough for me, then things like my health or my teeth would suffer. So that should have been a clue.

But over the next couple of years and through my next two pregnancies, I continued to find information that contradicted the conventional training I'd had in nutrition school. And also, they contradicted with what the dentist was saying. And so I slowly moved away from low fat, high fiber diet that still contained sugar to a high healthy-fat diet with moderate protein and most of my carbs came from vegetables, or fruits, or starches like sweet potatoes instead of processed foods or sugar. And I focused on eating for health and for replenishing nutrients not just for food and for being full. So I tried to choose foods at meals that would actually boost my nutrients levels, not just fill me up.

And during this time, I didn't develop any new cavities even through these two more pregnancies which, at the time, I just thought was because I wasn't eating sugar and starchy foods. And I figured that's why the cavities had stopped. But as I learned about traditional foods and the role of gut health, I also started eating fermented foods and healthy fats like coconut oil, and ghee, and tallow, and grass-fed butter, oily fish. And I also started taking high-quality probiotics. And I saw improvement in many areas of my life, my skin, my hair, how well I could tan, but my teeth were the most surprising part. Not only did I continue not to get cavities, but my tooth sensitivity was slowly vanishing. And my teeth were getting whiter even though I wasn't doing anything external to whiten them.

And I'd had yellowish teeth since antibiotic use as a child. So that was shocking to me, because I had been told that was a pretty permanent thing. So during this time, I'd also started making and using my own homemade dental products, including a remineralizing toothpaste and a tooth powder that I made. I occasionally brushed with baking soda, but it was mostly the remineralizing toothpaste, and this seemed to whiten my teeth even more. And when I added in the oral wellness blend to the toothpaste and started using that daily, the last of my tooth sensitivity went away, and my puffy gums went away. And my teeth also continued to whiten without any commercial products. So I found that fascinating.

But what really cemented the idea of nutrition and oral health for me, was I had a stressful time in my life when I was traveling a lot and nutrition wasn't as optimal, and my regular dental check-up revealed that I had some soft spots on my teeth, and the plaque had come back. But I also had one "official cavity," and it wasn't very bad, but they still suggested getting it filled pretty soon. So I wasn't in a huge rush but they also warned

me I had beginning stages of gingivitis in several places which, thanks to, like, Listerine commercials in the '90s, really freaked me out. So I had every intention of getting the cavity filled, and I was gonna continue with regular dental appointments, but, of course, life happened as it usually does. And I didn't get around to scheduling the appointment for several months.

And by the time I finally had time to schedule it, I had read more and more about the ability of teeth to heal. So I decided to hold off a little longer and try some of the more natural methods since it wasn't bothering me at all. And I reread the book "Cure Tooth Decay" by Ramiel Nagel. I read accounts of other people who had reversed dental damage, so I figured it wouldn't hurt to give it a try as long as I wasn't having any other pain or problems. And so I gave myself a specific diet and supplement regimen that I was just gonna stick to for a few months and see if it helps. And I noticed that my teeth did seem stronger, and there was no plaque on my teeth. The rough spots on front of my teeth from where I had had braces also became whiter and smoother again, which was surprising.

But I also found out during this time that I was also expecting our fourth baby. So a side note, this diet also promotes fertility, just gonna put that out there. And I decided to continue on the regimen for the pregnancy since all of the things I was doing were also very supportive of a healthy pregnancy. And it also ended up being my easiest pregnancy by far, my easiest delivery. I don't think it's coincidence but I'm happy about.

And it was next fall before I finally got around making it back to the dentist. And I know, if any dentist were listening, every six months. I got it. I'll stick to that from now on. But I didn't mention to the dentist about the cavities or the soft spots, and he didn't mention it either. It only took the dentist about, or the hygienist, about five minutes to clean and scrape my teeth instead of the 30 minutes or 40 minutes it used to take them. And I thought she was still just checking and she told me she was done.

The hygienist actually asked me if I'd started using fluoride or fluoride toothpaste, and that's what had made the change because my chart indicated that I didn't want them to use the fluoride treatment on me. And I told her, "No, I'm not using fluoride but I've been trying to take better care of my teeth." Which was true, but it was from the inside not the outside. And when the dentist checked my teeth, he didn't mention any of the problem areas or the cavity that he had seen before. And he did remark that my gums looked great. So I was...that's what cemented it for me is that it actually had...my body had actually been able to heal that cavity. And since then, I haven't had any dental problems and I continue to get, you know, good check marks on my gum health.

Will: So let me recap this. You didn't get the best genetic tendency towards, you know, I mean, it's not like you had the pristine genetic health and didn't have your share of dental issues in the beginning. It's beautiful excellent, excellent. I didn't know that story, that's so cool.

Katie: Yeah, so now that you know my dental history...

Will: Yeah, really, wow. So, obviously, you have experience of this. What role does nutrition play, from your understanding, in achieving optimal oral health?

Katie: This is the part that was so fascinating to me. My background is in nutrition so I am a little biased towards it. But what I found in my research and my experience is that nutrition made a huge difference in my oral health transformation. And what's interesting, since I posted about this on my own blog, I've gotten

dozens of emails from readers who have had similar results. And if you think about it, it makes a lot of sense that what you put into your body and what goes into your teeth internally would have an impact as much as you put on them externally.

In my research, what fascinated me was the work of dentists like Dr. Price, who documented the oral health of people around the world and compared their native diets. And he found populations who didn't have any kind of oral care like brushing or flossing, some who even filed their teeth down to a point, but they had very low rates of tooth decay. And a lot of them had wonderfully faced white teeth, and they didn't have access to modern dental care.

And he found this across several different populations across the world so it wasn't just a genetic thing. And what was an interesting note, he also found that when these people were removed from their native environment and their native diet, they would also get tooth decay at the rate that the rest of us would. So on the opposite end of this spectrum, he found all these modern populations who were brushing and flossing, and who did have access to modern dentistry, but even the children were becoming wildly affected by tooth decay. So he theorized and he later tested that nutrition played a really big role in oral health. And that certain traditional foods can make a big difference in oral health.

And at this point, I also read about the work of Dr. Edward Mellanby and his wife, Dr. May Mellanby. Dr. Edward Mellanby actually discovered vitamin D and discovered that it was...deficiency was linked to rickets. And they discovered that tooth structure is determined during the child's growth even in utero, and that poorly formed teeth are more likely to decay which is pretty logical.

So these doctors all reached similar nutritional conclusions after all their years of research. Mainly that tooth structure and health is largely determined not just by the external factors, but by diet as well. And the three main factors that seemed to be pretty common amongst both of those, Dr. Price and the Doctors Mellanby, was that the dietary factors that affected oral health were the presence of enough minerals in the diet, the presence of especially fats soluble vitamins in the diet.

And Dr. Price especially focused on vitamin K2, which he called activator X, and which we now know as present, especially in raw grass-fed dairy and grass-fed meats. And also, the third thing was how bio-available these nutrients were and how well the body was absorbing them. Which they found was partially linked to the presence of phytic acid in the diet which blocked mineral absorption. So, for me, this made a lot of sense.

From my own dietary changes and the resulting oral health changes in my switch to more nutrient-dense food, I had started consuming a lot more minerals from foods mainly bone broth soup, seafood, which has a lot of iodine and magnesium. And I had added in a whole lot of healthy fats, like fermented cod liver oil, grass-fed butter, grass-fed meat, and tallow, a lot of pastured eggs and organ meats, which all have fat soluble vitamins. So the additional of probiotic rich foods and the gelatin from the bone broth also helped that third factor, which was how well my body was absorbing them. And since I removed the processed foods, I had gotten rid of the biggest sources of phytic acid from grains, and beans, and nuts, and I had also gotten rid of sugar.

So Dr. Price and even modern researchers like Ramiel Nagel, they explain that the diet can even affect tooth spacing and the formation, and I'm so curious to watch this with my own children. My husband and I both had cavities in our life, and we both had braces for a long time. And so far, our children, especially the younger

ones, who've had the most benefitted from my switch in diet have very well-formed teeth and wider jawlines than either one of us had. So I'm really fascinated to watch how that develops throughout their childhood.

But to me, this nutrition based model makes a lot more sense than the theory that tooth decay is simply from bacteria in the mouth that are eating simple sugars that produce acids that ruin our enamel. Certainly, I think the external factors, like sugar on the teeth and that acid, are definitely a part of the story. But if you think about it logically that doesn't make sense that it could be the whole story. Because like the rest of our bodies, our mouths are breeding ground for good and bad bacteria. And they are an ecosystem, in a sense, in themselves. So despite our best brushing and flossing regimen, even if we are swishing with hydrogen peroxide every 10 minutes, we're still inhaling and exposed to thousands of germs per hour, so there's really no way to completely eradicate the bacteria. But, perhaps, we can, from the inside, strengthen our teeth to resist that. And there are numerous examples of populations that Dr. Price studied that consumed carbohydrates in large amounts but they didn't even brush their teeth at all. But they didn't suffer from tooth decay.

And the other thing that I've thought about lately is we've got the most recent surveys are showing that upwards of 90% of the U.S. population suffers from tooth decay or gum issues in some capacity. So we could either surmise that only 10% of people are actually brushing and flossing their teeth and following their dentist's advice. Or we can consider that other factors are involved, and start going back to the traditional methods and looking what could be the root of this not just the external cause. And from the research I've done, these external factors, they don't just include diet, but the balance of minerals in our body, our blood chemistry, our hormone levels, and the quality of our saliva, which is a living substance, it's actually nourishing out teeth from the outside but it's created from the inside. So my theory is that until we stop focusing solely on the external, but also evaluate the internal then we're gonna continue seeing deterioration.

Will: So from your perspective, what would an optimal diet? I mean, you've discussed a lot of the points here. But let's really get down to the brass tacks here. What would an optimal diet for healing the mouth be from your angle?

Katie: It's a great question. And fortunately, I think the diet that's best for oral health is also gonna promote health in so many other areas like weight control, obviously, fertility in my case, brain health, gut health, and even the body's ability to absorb and use vitamin D, which is also important for oral health. And I just mentioned the rising rates of tooth decay among the population so, obviously, the standard diet that we're eating is not the most supportive of oral health.

What I found to be the most beneficial in my own family is the similar diet to the one suggested by Dr. Price, and Ramiel Nagel, and a lot of other natural health practitioners that are now promoting this. And I was so excited to find their scientific explanations because it was giving me the backing to what I had discovered in my own life and helping me to understand why it was working. We can probably all agree that a high sugar diet is not good for our teeth or our body, internally or externally. But a diet that is truly supportive of oral health, it goes deeper than just getting rid of sugar and processed food so they are not sitting on our teeth. But that is a great first step.

Some recent studies I've seen have reported that many of us are deficient in minerals like calcium, magnesium, and phosphorus. And sugar-containing foods and processed foods that are devoid of minerals actually deplete these minerals in our body. So that's another logical reason why these foods would be causing

tooth decay not just that they are sitting at our teeth.

So, as I mentioned before, a diet that supports oral health is one that optimizes those three factors that Dr. Price and the Doctors Mellanby found, mainly minimizing phytic acid, increasing the consumption of mineral rich foods, and increasing fat soluble vitamin levels. So minimizing phytic acid would be done by reducing or eliminating the foods that contain high levels of phytic acids. which most noticeably are grains, beans, legumes, and nuts, especially, foods like sesame seeds, unblanched almonds. Soy products of all kinds are very high in phytic acid, and as are oats, and wheat, corn, peanuts, and brown rice.

And there are ways to reduce and not completely eliminate the phytic acid content of these foods. If we use the traditional methods of soaking, and sprouting, and fermenting. But in my experience, and for those that are trying to reverse tooth decay, it seems much better just to avoid them all together, at least temporarily. So that's part of what works for me.

Another factor that I've seen to be important for us is increasing the body store of minerals. And I've talked in-depth on my blog about the importance of various minerals, especially magnesium, which it seems many people these days are deficient in. And calcium, and magnesium, and phosphorus are especially important for tooth health. So for me, I had to supplement with transdermal magnesium in the form of magnesium oil on my skin and eat a lot of seafood and green leafy vegetables to bring my levels up. And I actually noticed a really big difference in my sleep quality when I did that. But I believe that also made a difference in my oral health.

And consumption of sodas, and caffeine, alcohol, and processed foods are all things that deplete the body's stores of magnesium and other minerals, as does stress. So these factors all have to be considered as well whereas foods like vegetables, seafood and fermented foods are great sources of replenishing these minerals. But probably the most important factor I noticed, dietary wise, that supports oral health is the consumption of enough fat-soluble vitamins, which, as I mentioned, were A, D, E, and K2. And the top sources of these include grass-fed meats, raw grass-fed dairy and butter, wild caught seafood, and especially organ meats from healthy land and sea animals.

And as a society, we've kind of eschewed these foods and we have replaced them with vegetable oils, and processed foods, and pasteurized dairy. So to stop or reverse the rate of decay, we're gonna have to turn back to these traditional foods to support not only our oral health, but the health of our whole body, which will in turn boost oral health.

So when I found all this information, these types of dietary changes definitely seem daunting. And it certainly can be overwhelming at first, if you're gonna jump in with two feet. I've actually compiled a list of resources to make the transition easier on my blog. So you'll go to access that resource page. And I've also found tips for our family that involve fast and easy preparation of these foods.

For us, personally, we try to eat organ meats at least once or twice a week, if not more. And yeah, don't mention that to my husband and kids, I usually try to sneak it in with ground beef, or in chili, or strong-tasting things. So they don't usually notice but I think they are adjusting. And we also eat seafood a few times a week, especially wild caught salmon with the bones in for lunches, which is also an easy lunch to make...salmon salad. We eat oysters and fatty fish, and when possible, we buy our meat just from local farmers who are exclusively grass-fed and that way there's a higher concentration of the fat-soluble vitamins.

And practicality speaking, we do a whole lot of soups in the winter and stews because you've got the benefit of the bone broth, the fat-soluble vitamins from the meats, and also lots of vegetables. Plus, they are easy for me because I can make a huge pot and reheat it easily. And the rest of the year, we do a lot of stir fries and casseroles that have grass-fed butter or tallow cooked into them to boost those beneficial fat levels

Will: And it sounds like our house here, same type of game, you know, it's a constant bone broth being worked. And you know, plus the bottom line is, folks, and if you don't know this yet, for those of you who are eating a nutrient-dense diet, you already know this, they just taste better.

Katie: Oh, absolutely. Yeah.

Will: Yeah. It's like there's a reason that when you think about your grandmother's or your great-grandmother's, you know, pot of stew, it's like, it makes your mouth water. Well, it's because it's really good for you.

Katie: Absolutely, and the reason you crave that when you're sick, warm soup, it's got all those minerals.

Will: Exactly, exactly. So you've mentioned phytic acid, you've mentioned vitamin D. What role do you see phytic acid and vitamin D playing in oral health?

Katie: Yeah, this has been fascinating in my research. And I'll try to keep the nerd in me from coming out too much. But phytic acid is a molecule phosphorus that's tightly bound with other molecules and it makes a compound that is not easily absorbed by humans. In the Weston A. Price Foundation, actually talks a lot about phytic acid. But it's a principal storage form of phosphorus and it's in many plant tissues, most notably the bran of a lot grains, and seeds. And it's basically just phosphorus, which is tightly bound in a molecule. But in humans and other animals with only one stomach, the phosphorus isn't really available to us. And so, in addition to blocking the phosphorus in our body, it also binds with minerals like calcium, and magnesium, and iron, and zinc. Which make them unavailable to us as well.

And when they bind like that that's called a phytate. So phytic acid is found in grains, nuts, seeds, and legumes, and, in smaller amounts, in other fruits and vegetables. But as it enters the body, it converts into a phytate when it binds to our minerals, and this is unabsorbable when it takes these minerals from our body. So those who consume a high amount of these are more likely to see a mineral deficiency because of that. And according to Dr. Price's work, people who consume large amounts of phytic acid, which is most Americans, in the form of grains, seeds, nuts, or legumes, have higher rates of tooth decay, and mineral deficiencies, and osteoporosis.

So just as lack of vitamin D and poor calcium absorption can cause malformation of the bones of the legs, in the case of rickets. The same effect can be seen in the jaw bone of children, if it forms poorly. And this can lead to spacing problems, and the need for braces in a child, which Dr. Price found in his work. And as a parent, this was so exciting to me because since both of us had braces, the possibility that our children might not need that and we could nourish them in utero was just amazing.

But sadly, the most common eaten diet in America these days is high in grains, and sugars, and vegetable oils, and low on animal fats and fat-soluble vitamins, which is exactly the opposite of what these doctors had found

to be helpful. But the good news is that teeth and bones are able to heal themselves in a process called remineralization. And basically, specialized cells in the tooth are able to regenerate from the inside while the outer layer can remineralize from the minerals in the saliva on the outside.

And to prove this theory, the doctors I spoke about earlier, the Mellanbys, did a study on children who had existing cavities and they put them into three groups. And the first group of children were given their regular diet but they added oatmeal, which is higher in phytic acid. And the second group of children had a regular diet but they were given vitamin D, which is seen to have a protective effect on the teeth. And then the third group was put on a low phytic acid diet plus vitamin D. And interestingly, they even noted the third group, they were still eating sugar and it wasn't even a limited carbohydrate diet. They've just limited the phytic acid.

And what they found was fascinating. The group that consumed the phytic acid with no supplemental vitamin D continued to get cavities with little to no healing. The group that just supplemented with vitamin D but didn't reduce the phytic acid saw some healing but they also saw some new cavities. And the group that consumed no phytic acid and then supplemented with vitamin D showed very few new cavities, and they actually saw cavities heal, which you don't easily get told by a dentist but these doctors were able to see these results in children. And Dr. Price was able to see this in populations around the world.

So to recap, they were doing those three factors. They were increasing the minerals in the diet, they were increasing the fat-soluble vitamins, and they were making everything in the diet more bioavailable by reducing the phytic acid. So practically for us, it's not possible or even necessary to eliminate phytic acid completely but what we should consider is taking care to minimize the foods that contain the highest amounts of phytic acid.

And there are preparations like soaking, and fermenting that reduce the phytic acid content even of the foods that contain high amounts. And certainly, I'd recommend that if you're gonna be eating these foods. But in many cases, it's better and easier, in the case of healing teeth, just to avoid these foods in the short term. So nuts for instance have a high phytic acid content, many of them. But if you're gonna eat nuts you could reduce the phytic acid content by soaking the nuts in salt or lemon water over night and then rinsing and dehydrating in the oven, which is a time-consuming step. But it gets even more time consuming when you're dealing with grains or really small seeds that take longer to do that with.

So you might notice that meats, eggs, vegetables, and healthy fats have not been mentioned on that phytic acid list. I mean, as I mentioned before, these foods contain really high levels of vitamins and minerals, and they are more nutrient dense anyway whilst being good sources of vitamin D when you're talking about seafood, and grass-fed dairy. So and Weston A. Price Foundation has a lot of good resources, if you're gonna continue to eat the foods with phytic acid of how to reduce them and make them less harmful. But especially for children who are still in the process of developing their tooth and bone structure, I find it was easiest and best to just remove the sources of phytic acid, the highest sources in the short term, so their teeth could heal, and regenerate, and get stronger.

Will: Right, right. This is so perfect, Katie. Thank you for all this information. And putting it so well put together here. What I'm getting real clearly and what I wanna kinda hammer home here is, not only if a person is eating a processed or a heavily-grained based diet like the U.S. ADA likes to promote to us, not only are they not getting the nutrients that they need, but actually the foods they're eating are inhibiting the absorption of nutrients in whatever nutrients that they still do get in their diet.

Katie: Exactly. And you probably heard the expression that so many of us are overfed but under nourished, and it's because we're consuming, volume wise, a ton of food. But we're not absorbing it and it doesn't even have those minerals that we need when we are absorbing it.

Will: Exactly. Which, you know, we joke about this quite often, you know, the idea of a low-fat diet. The reason that people will so commonly over eat is because their bodies are saying, "Give me more because I'm starving here because I don't have the fats that I need."

Katie: Exactly.

Will: Yeah. So what other factors have you found affect oral health?

Katie: I've seen several from my own experience and just as with the other aspects health and nutrition that I've looked at, it seems like there's never a single cause or solution and nothing works in isolation. So just like just brushing your teeth alone won't fix it or just improving your diet doesn't fix it, there are other factors that weigh also. And oral health is dependent, logically, on the overall health of the body and vice versa. So things that affect our overall health will impact our oral health as well. And the factors that I've seen that make the biggest difference for me are: hormone levels, how much sleep we're getting, stress levels, and also saliva quality.

And there seems to be a lot of emerging research I've seen lately that hormones are playing a critical role in oral health. And it's pretty logical if you think about it. People often experience more cavities or changes in their oral health during puberty, when hormones are changing. During pregnancy, you're at higher risk for a tooth decay. After menopause or during stressful times, when your hormones are affected by your cortisol levels.

But in the statistics I've seen, indicate that at least by modern dental standards, women are more likely to take care of their teeth with brushing, and flossing, and regular oral care. But on average, men tend to have better oral health. So that, again, causes us to look at the hormone connection there.

And one of the theories is that the changing hormones over the course of a woman's life - through puberty, and her monthly cycle, and pregnancy, and menopause - as levels of progesterone and estrogen and other hormones fluctuate, can cause an increased blood flow to the gums. They cause pH changes in the mouth and all of this can affect tooth and gum health, especially if she's not getting enough minerals.

And since stress hormones like cortisol affect other hormones, including estrogen, and progesterone, and testosterone, it's easy to see why stress would have the same effect. And stress also, as we know, depletes the immune system and makes us less likely to be able to fight any infection, including an oral infection. And it can change the pH of our bodies and our mouths which increases the risks of our oral health problems as well.

And pregnant women are at higher risk for gum disease and tooth decay. And I've seen many statistics that periodontal disease can put a mother at higher risk for low birth weight babies, or preterm labor, which is another indication the important internal factors that affect oral health and how drastically our oral health can impact the rest of our body as well.

And women on hormonal contraceptives can also have some of the same risk factors simply because these

contraceptives mimic the symptoms and the hormones of pregnancy in the body. So the hormonal changes at menopause can also have the well documented effect. And we hear about that most often referring to women's bone health at menopause, but factors that support oral health, like the diet, and supplements, and lifestyle factors, can also help strengthen a woman's bones during this time in her life and prevent bone loss.

What surprised me the most to find in my own life and also to find the research that backed it though, was that factors like sleep and stress can have just as big an impact on oral health. In fact, I found one study in the "Journal of Periodontology" that listed sleep as one of the top factors that has the biggest impact on oral health. And they listed smoking as the number one risk factor, and a lack of sleep was a close second for the highest risk factor for periodontal disease. And they found that participants who slept eight hours a night had a much lower risk of oral health problems than those who slept less than six hours.

So there are so many factors that impact that. And lack of sleep also impairs the immune response, it changes hormone levels, which can lead to oral health problems and other health problems. And we've seen the evidence that lack of sleep is linked to higher risk of obesity, higher risk of heart disease, and diabetes. And I think as more information comes out about the connection between systemic disease and periodontal disease, I think we're gonna see the link with stress and sleep becoming even more important. So...

Will: Yeah. I agree, I agree. It's, that's an excellent recap there of a lot of the research that we've also done in OraWellness. This is awesome. So, you know, our background is in the Chinese longevity arts. I'm always, you know, we have a video out there called Mouth Probiotic, which helps people bring awareness to the importance of the quality of saliva. How does, from your perspective, someone optimize saliva quality to improve their oral health but also their whole-body health which it affects?

Katie: Yeah, actually, I love the video that you guys have out. And this is a factor that dentists are very aware of, and I mentioned also, is that the saliva is very important for overall oral health. Not only does it keep the mouth and gum tissue moist and prevents infection that way, but it controls the oral pH, it has an antimicrobial effect, and a cleansing activity on the gums. But most importantly, from what I found, is it carries the minerals to our teeth that allow them to remineralize and to keep their strong enamel.

And saliva is actually a part of the digestive process as it begins the breakdown of carbohydrates. So while most of us might think a saliva is simply just spit that keeps our mouth wet, it's an important part of the mouth's ecosystem and it can actually be an indicator on a lot of other things in the body as well. In fact, there are diagnostic tests that are able to determine hormone balance and steroid or sex hormones through saliva tests alone. And tests are now using the presence of bacteria, or yeast, or viruses in the saliva to help in diagnosis of oral or systemic disease infection.

So, I don't know if you've seen the research, but I've been told by my dentist that a mother can pass on harmful bacterial in her mouth to her child by sharing food or licking a pacifier or a bottle. And this is because saliva, like the rest of the mouth and the rest of the digestive system, it has a delicate balance of good and bad bacteria, which can actually be transferred. So for this reason, like cavities and oral health problems, can actually be considered like a communicable infection or disease because it can be spread.

So from an oral health perspective, saliva carries the minerals that help our teeth remineralize, including, as I've spoke of before, calcium, magnesium, and phosphorus. And this is why you'll see low saliva production or dry mouth could be increased risk factor for cavities, or gum problems, or other oral health issues. There have

been studies I've seen that have linked adequate saliva production with reduced risk of oral health problems and many of these studies actually suggest chewing sugar-free gum as a way to increase saliva production. I'm not a big fan of chemicals in my gums so, well, that's one external factor that does.

I found that, actually, your World One Expression Blend seems to immediately increase my saliva production. But also, that internal factors have influenced that as well. Most noticeably, drinking enough water which is pretty logical. But building the body's fat-soluble vitamins seems to normalize saliva levels and make that much more common for me. So the absence of important minerals in the saliva can lead to a more acidic saliva as well, and that can contribute to tooth demineralization. Which I've heard several dentists tell me personally. So, simply put, the absence of healthy saliva puts a person at a higher risk for oral health issues.

And the things that have helped me the most with improving my saliva and my oral health pH measurements have been drinking enough water, getting enough minerals from my diet or from supplements, and, especially, those fat-soluble vitamins and minerals from the healthy fats.

Will: Right on the mark. So this really has been all about solutions. Let's get into some specifics with you and your family and what you found. From your perspective as a stay-at-home mom of four kids with a heavy background in the wellness lifestyle like you're sharing with us here, are there any special considerations you have found beneficial when dealing with your children's oral health in your own family?

Katie: Yeah, the great thing with kids is they seem to respond much more quickly than adults to any health changes, including oral health changes. I'm a firm believer that optimal oral health for children begins before the mother gets pregnant. And I only wish I knew now, or I knew then what I know now when I had my first child. And it's been amazing to watch our family as we've had children. And the younger children who've had the benefit of me eating a higher nutrient diet, their teeth are naturally wider, they're smoother, their jaw lines are wider. But I also am seeing changes in my older children who didn't have that benefit. And this coincides with the information I've seen from Dr. Price about diet having a tremendous impact on oral health and tooth spacing.

So in my kids, especially the older ones, their teeth have gotten whiter as our diets improved. And my oldest actually had his teeth starting to wear down in the front. And this had gotten to the point where the dentist no longer worries about it because they've hardened and gotten stronger and whiter. So the dentist is not concerned about them. And the older kids also had a couple of spots that I wondered if they might be the start of cavity. And since our switching to more nutrient dense diet, the dentist has never been able to find a cavity or problem in their teeth. But I think we should be especially mindful of our children's oral health because there's so much emerging research that's showing a link between oral health and overall health.

And children under age 10 are the part of the population where we see the fastest increase in rates of tooth decay and gum disease. And if they are already seeing them at this age, it's going to become a serious problem later in life. But fortunately, children are the easiest to help stop or reverse the problem and they do tend to adapt more easily than adults. So what I've seen tend to help my kids in our kind of daily oral health routine is a simple combination of diet, supplements, and our external oral support that easily just fit in our schedule now.

We all brush in the morning with our home-made toothpaste or toothpowder and a few drops of the Orawellness brushing blend. And for anyone who's interested I have those recipes in my resource page. But

we support our overall and oral health with high-nutrient meals, usually consisting of, pastured eggs for breakfast cooked in coconut oil or grass-fed butter. And the kids have adapted really well to this, they seem to really crave and want those healthy fats and healthy proteins.

One thing I need to boost my husband and my fat-soluble vitamin levels is if we drink coffee or tea in the morning, usually tea, I'll put it in a blender and add a tablespoon of coconut oil. So it's an easy way to get that healthy extra fat, and it also keeps you full for a very long time. And at breakfast, we all take the fermented cod liver oil, and any other vitamins, which was definitely an easy adjustment for our kids than for us. They don't mind the taste at all and I'm still adjusting. And we give them also probiotics and homemade multivitamin that I make. And the kids get about half a teaspoon of the fermented cod liver oil, my husband and I both take about a teaspoon a day. When I'm pregnant or nursing, I take about two teaspoons a day.

And then at night, we just brush again with the homemade toothpaste, toothpowder and OraWellness blend. And when I'm having a specific oral health concern or one of the kids is, or if I just want to whiten my teeth, I also brush with activated charcoal powder, which seems crazy and a little weird. In fact, it generated a lot of heat on my blog because people were like, "Why would you put that on your teeth?" But it's able to remove and kill toxins from the outside and it also has the effect of whitening teeth.

So a word about, real quick about the homemade toothpaste we use, I created both of these recipes not...after I couldn't find a good option in the store that I was satisfied with. And this was before I found you, guys, or I probably wouldn't have created them. But I'm sure you have had other presenters who will address the possible problems with conventional toothpaste much better than I could. But I had a friend who had a scare with fluoride toothpaste and her child had ingested it. And the things the Poison Control Center had told her about the levels and what would be easily fatal to a child, made me really not wanna have tubes of fluoride toothpaste sitting around my house. But as I saw the information about the link between thyroid problems and fluoride use, I also wanted to avoid it since thyroid problems tend to run in my family.

But every natural option I was finding had glycerin in it, which I've seen a lot of information that this could coat the teeth and keep them from even benefiting from remineralization efforts. So I didn't want to use a toothpaste with glycerin in it, I didn't wanna use a toothpaste with fluoride, and this left a homemade option. So I set out to create one and that's how both of those were born. We started using those and the kids have adjusted to those really well. In fact, I think they'd eat them, if I didn't watch them because they really like the taste and I think they know, like, intuitively, kids seem to know that there's something healthy about that.

Will: And the good news is there would be no harm in them eating them.

Katie: Exactly, yeah.

Will: Wow. So what about children and sweet foods? How have you navigated that with your family?

Katie: Well, my poor deprived kids live in a world pretty much without cake, or soda, or candy, or other sweet treats. This really hasn't been that hard for us, but I think it's actually harder on my husband and I than the kids because we had all those sweet foods growing up and in college, and we know what it tastes like. And there's always that taste from where you know what they taste like if you see them. But especially our younger ones have never really tried sweet foods much, so they don't expect them or want them.

But one thing that is sort of a soapbox for me is the way that kid-friendly foods are marketed constantly. And there's perception that kids either can't or won't eat the healthy foods that adults either like or what eat because know they're healthy. And it makes absolutely no sense to me that we would provide kids with these processed, sweet foods, or we would provide kids processed chicken nuggets at a restaurant and fries, while the adults ordering grilled chicken and vegetables. Because we are creating that perception that they are not gonna like those healthy foods. And in my opinion, kids don't need specially packaged juices or treats that are full of sugar or, you know, they don't need a toy packed in their lunches.

So for birthdays and other events, we try to focus on the experience rather than the food that is usually associated with that. So we let them choose a place to go on special events rather than a food. So we might go to a park, or the zoo, or an orchard and let them pick the activities for the day. So we kinda shy away from having a cake or sugary treats. And my hope is that we're building the emotional connection to these experiences not to...we're not building an emotional connection like, "On days that I'm happy or we're celebrating, we eat food." Because I don't wanna create that mental connection there.

To clarify, though, I do occasionally make either coconut flour pancakes or waffles, and we'll use real maple syrup and lots of butter. Or we'll make muffins or cinnamon rolls from coconut or almond flour. And we've made homemade ice-cream with coconut milk or raw milk, and egg yolks, and maple syrup, and then we flavor it with strawberries, or vanilla, or mint from our garden. But I try to make these treats somewhat rare and still make them from healthy ingredients when we do make them. Just so they don't become accustomed to them and learn to crave them like did as a kid.

Will: All right. Well, well put. So what about those who are pregnant, or nursing, or have a weakened immune system. What do you have as suggestions for them?

Katie: Another great question since I definitely tend to be in this category myself pretty often. As I mentioned before, pregnancy can affect oral health in many women, but it can create an increase risk for gum disease or tooth decay. And a lot of Dr. Price's research looked into the diets of these native people around the world and how this affected their bone structure. And he found in the mother's diet during pregnancy actually impacted the child's oral health and tooth formation. And there seems to be some emerging modern evidence of this as well. But at the very least, it seems wise to me support a healthy pregnancy in every way possible, both for mother and baby.

Then logically, as mother's body supports baby through pregnancy and nursing, she's gonna have an increased nutrient need. And so often we think this is just an increased need for calories or food. But really, especially during pregnancy and nursing, the quality of those is vitally important. Since a woman's body is designed to nurse the baby during this time, her body is going use its available stores of nutrients to support the baby. And if she's not replenishing those nutrients at the right levels, even if the baby doesn't suffer, her body will suffer. So it's extremely important to replenish those.

So for me, the lifestyle factors that I found that helped the most, all the time, but especially during pregnancy and seemed to have made my pregnancies a little easier in the past... Like I've mentioned before, eating lots of healthy sources of fat, which ironically has made me gain less weight during pregnancy, the more fat I eat than when I was eating the whole low-fat, you know, yoghurt thing all the time. And this supports the oral health remineralization as well as supporting the baby's healthy brain development because the baby needs all those beneficial fats, and you hear about the DHA, and the RHA for brain development.

And for me, this means getting about two to four tablespoons of coconut oil a day during pregnancy and nursing. And also using grass-fed butter daily. And I try to consume organ meats from clean sources at least once a week, but more often during pregnancy. And to get protein from eggs, and fish, and grass-fed beef, or pastured poultry daily. And I also take during pregnancy or nursing, a teaspoon or more of fermented cod liver oil and high-vitamin butter oil to provide for the baby's needs and also for mine. I also consume a lot of bone broth during pregnancy which gives all those minerals the baby needs for development. And that's a great source of calcium, and magnesium, and gelatin, and other compounds that support both the mother's oral health and the healthy pregnancy.

And I've seen a little bit of research correlating this to oral health, specifically. But one thing I'll mention on a side note is that I always make sure to get an adequate magnesium during pregnancy, and this has probably made the biggest difference in my morning sickness or lack of thereof, recently, in my last pregnancy. As magnesium is so important for the baby's development, but it also helps replenish the mother's stores so that morning sickness never hits. And I tend to get magnesium oil on the skin when I'm pregnant just because it's easier to absorb than the internal ones, which can cause bowel disturbances, which most pregnant women prefer not to have.

So I also try to get vitamin D from sun exposure when I'm pregnant. And really focus on minimizing stress and maximizing sleep. Since that restorative of time is so important when you've got a developing baby.

Will: Wow. So how have you been successful? I wanna hear more about you and your family, and how you guys eat, and all that. How have you been successful in working these nutrient-dense or health-giving foods, or really foods that we need to be eating if we wanna live optimally vital lives into your family and your children's diets?

Katie: I would probably be considered a mean mom, actually, by a lot of standards. But as I've learn more about health and wellness, I have just implemented the changes kinda cold turkey. But the kids have adjusted without a problem, there was sometimes been a little complaining at first, but they seem to have adapted even faster than even we do. The one thing that I do think really helps is that when we, as parents, have a definite plan going into it and a resolve for the changes, and we commit to just making them without cajoling or pleading with the kids. We take the time with our kids to explain the reason, we eat the way we do since we are not simply...it's not just our job to feed our kids, but we're trying to build that lifelong nutritional foundation so that they will understand it and choose it for themselves as they get older.

I think we usually underestimate kids a lot. And their ability not only to try healthy food, but to choose them on their own. In fact, I found out from another mom that my five-year old has refused cookies or snacks at their house because they weren't healthy. So certainly, if a child is used to a certain way of eating, they may or may not be healthy, but the change can be more difficult. But I think we, as parents, approach it from a positive perspective and we're excited about the new way of eating, our kids will pick up on that. But on the other hand, if we approach it thinking that the kids are going to balk, or not accept the change, or that we have to convince them, or bribe them, or force them, they're gonna pick up on that and they're gonna resist.

So what's worked best for us was just a calm discussion on why certain foods were healthier and why we were choosing these. And we told them that we love them very much and we want them to have the best building blocks for building strong bodies. And so part of this was we were gonna try these new and exciting foods.

Granted, you can use a little more adult language, if your kids are older than five. But we took the kids to the farmers market, we took them to the local farms, and to the grocery store, and we let them see the difference for themselves between the healthier foods and the unhealthier foods.

We even let them try, like, real, organic raw cheese right next to pasteurized, processed cheese, and they could taste the difference. I usually let them help me pick meals they like in meal planning. And if I can, and it's not just boiling soup, I usually let them try to help me cook also. So for the most part, our kids are pretty adventurous eaters now.

We do actually have a couple of rules at the table, all that have gone a long way to making that adjustment easier. And with four kids so close together, if we have one of them that has a negative opinion of food then voices it out loud, it tends to go down the line pretty quickly. So our rules are that we put a small amount of everything we cook on each child's plate. And they have to try that one bite of everything before they can request a seconds of anything. And this way they know they have to try things, but it's not menacing because there's not a huge pile of liver that they're gonna have to eat if they don't love it.

And they're never required to eat if they truly aren't hungry because I don't wanna force food if they're truly listening to their body. But our family policy is that all of us will seat at the table during mealtime so that we can have a chance to talk as a family. And while they don't have to like or eat everything that's given to them, they are not allowed to complain about it, or spit it out, or make negative comments. And the example I've use with them is that, just like if they drew a picture or made artwork, or built a thing, and they were really proud of it and they brought it to me, I would never be like, "Oh, that's ugly I don't like it." Foods that I prepare for them is the way that I care for them and show them I love them. So when they're like, "Eww, I don't like it," that's a rude thing and they have to learn not to say that.

So I don't wanna sound like we're sticklers for the rules though. Most of the time, they're asking for extra broccoli, or more butter, or more fish, or more soup. The first couple of weeks were a little rough with the older ones, but now, it's rare that they don't like a food.

Will: Wow, that's awesome. That's awesome. So do you have any last-minute suggestions or tips for our listeners at this point?

Katie: Yeah, my encouragement to other moms and families or to anyone listening would be to just try adopting some of these dietary and lifestyle changes. We don't have a rampant increase in our oral health problems because we have a lack of fluoride in our diets, or because we have a lack of dental fillings, or a lack of root canals. But there's an underlying cause that's making us more likely to suffer from these problems in the first place. And for me, addressing the internal cause not only helped my oral health, but my overall health, and my children's' health so much. And it just makes sense that what we put into our bodies impacts all aspects of health, even our teeth and our gums.

The methods are magic. They're supporting a body and they are allowing it to heal and repair itself. So, at the least, removing the chemicals from our lives and improving our nutrition is gonna have positive benefits in so many areas. But it's also gonna have oral health boosting and effects as well. And I also just encourage everyone to do their own research, even of the things that I've said because we're in an exciting time and we're seeing the melding of new research that's emerging constantly, but it's fitting in with things that traditional cultures have said for years. So I think we're in a really exciting time.

Will: Absolutely.

Katie: Thank you so much for listening to this episode of the Wellness Mama Podcast. This interview, like I said, was part of a series. If you would like to hear the rest of the interviews about oral health, they have some of the world top experts. And you can find all of those at wellnessmama.com/go/healthymouth.

Thank you for listening to this episode. Please take a minute to subscribe so that you'll be notified of future episodes. I have some exciting guests coming on in the next few weeks. Also, I'd be honored if you would leave a review. And let me know how I'm doing and what you'd like to see in the future. Until next time, have a healthy week.