



Episode 573: Nadine Artemis on Natural Oral Health and the Power of Sunshine

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Katie: Hello, and welcome to "The Wellness Mama" podcast. I'm Katie from wellnessmama.com and wellnesse.com, that's Wellnesse with an 'e' on the end. And I'm here today with Nadine Artemis who is the author of two books including, "Renegade Beauty" and "Holistic Dental Care." She is the creator of Living Libations, which is a luxury line of organic and wildcrafted non-GMO serums, elixirs, and essential oils that are the purest botanical natural health and wellness beauty products on the planet. She's considered a beauty philosopher, she's an aromacologist and a botanical expert, and she believes in simplicity and a natural rhythmic approach to beauty. She opened her first full concept aromatherapy store when she was just 22 and she's a frequent beauty contributor to many mainstream media outlets. She's been described by Alanis Morissette as a true-sense visionary.

And today we go deep on the topic of natural oral care and the power of sunshine. We talk a whole lot about the oral microbiome and how your oral ecosystem works, why the acid theory of cavities is wrong, and what we need to understand instead, how diet and lifestyle affect oral health, ways to keep the beneficial bacteria in the mouth without killing them and still keeping the bad ones in check, whether cavities are reversible, how to get white teeth naturally, and I'll give you a hint, it's from the inside-out, not the outside-in, what oil pulling is and how to use it, why we need more sunshine and not less, why 67% of wisdom teeth removals are not needed, and what to keep an eye on if you've ever had teeth removed, including your wisdom teeth or had a

root canal. She has such a wealth of knowledge. I have been researching the topic of oral health for almost 15 years, and I learned a lot in this episode, so I know you will too. And without any further wait, let's join Nadine. Nadine, welcome. And thanks for being here.

Nadine: Thank you. I'm so happy to be here.

Katie: I'm really excited to chat with you because in researching for this podcast, you have so many areas of expertise, and including a couple of my favorite topics that we're gonna get to go into. And before we jump into all the fun science, I have a note that your great uncle inspired and edited the James Bond series, and that "Goldfinger" is dedicated to him. And that's amazing. I would just love to hear a little bit about that.

Nadine: Oh my God. Yeah. That's so fun. Well, yes. So, his name is James William Plomer, or is it William? Oh my God. Now, I'm not remembering. William Plomer. It's William Plomer. And his first book, he actually wrote, I believe he spent a significant amount of his time in South Africa. And he actually wrote the first book that had an interracial love story. And Virginia Woolf was his editor for his first book. And then later, he actually did a lot of editing himself. I think for that same editing company. And a young, Ian Fleming, wrote him a letter about his books and stuff. And he really encouraged it and helped to develop that and edit his books. And, yeah, "Goldfinger" is dedicated to him. And another fun book that he did the poems for is a book called "The Butterfly's Ball, and the Grasshopper's Feast," which later became, it's funny because he was quite old then, but it became a rock opera by, oh, I can't remember who? Purple, 60s, 70s Purple something. Anyway. Yeah. And so I love that because it had all these great illustrations, and it was a book that I could understand as a kid. But he wrote all the lyric poems for that as well. He was nominated for a Poet Laureate in England, at some point as well. So, yeah. He was a pretty esteemed author.

Katie: That's such a cool story. Very talented family. The genes are strong with you guys. Well, you have your own expertise in many areas. One of them is oral health, which has been a research topic for me for over a decade since I first... With so many pregnancies in a row, I started getting cavities. And had always been told, of course, the mouth can't heal, and that this was just inevitable. And my background was in research. And so I started researching that and realized, perhaps there's more to this story that we've been told and there's at least a lot more factors than I was told in my dentist's office back then. So, I'd love to sort of unpack some of these ideas today. The first being the role of the dental microbiome. And some of the listeners may have at least heard of the concept of the oral microbiome, but I would love for you to kind of explain it at a high level, and then we'll kind of get into some of the more nitty-gritty of it.

Nadine: Yeah. I love that. And that's such a great place to start with the oral microbiome, which is definitely something we didn't even know about growing up. And understanding microbiome has really come into focus really in the last 10 to 20 years. So, it's really important. And then I love researching too. And whenever I'm going into an area of the body, because I'm really like low maintenance, like, I like to not put effort into things. I've got other things to do than, you know, just beautify myself all day. So, I like to look at, like, what's the natural design of the body, and where are we getting in the way? So, to me, it's like, well, we weren't born with a toothbrush in our hands. There's gotta be systems in the body that care for our oral microbiome or, like, you know, not that we always knew about the microbiome, but our oral mouth. And what can we do besides doing what the dentist said, which is brush your teeth and come see me, you know, twice a year. And it's also important to know that because I didn't really get this growing up because you feel like your teeth are formed, so they're kinda, like, rocks in the mouth and they're not necessarily connected. But, of course, the teeth are fully connected to the body with the roots, and the blood system, and through the microbiome.

So, what I also learned through just studying other dentists and their research is that there's something that I like to call the invisible toothbrush. And what affects the microbiome and what's connected to that is there's a whole dentinal lymph system. And that's pretty revolutionary. So, it's really this dental lymphatic system that brings nutrients to the tooth. So, when we chew, the substrates, you know, they're activating. We're chewing, and there's a whole bunch of chemical messages happening. And the parotid glands, which are right, sort of, like, in the jaw, by the ear, you know, they're receiving messages, they connect to the hypothalamus. The hypothalamus then sends out messages. You know, as we're chewing the food, it goes down, you know, into the blood system, it's digested by the stomach. And then the tooth is like a tree with roots, and then the blood's, you know, traveling to the teeth, and then the roots are picking up that blood, bringing it into the tooth. In the tooth is a core called the pulp chamber. And in there, there's the dentine and all that juicy stuff. And to me, that's really kind of the heart and soul of the tooth. That's where we really need to think about when we're caring about it.

And then that blood runs up into the tooth. And then in that pulp chamber, there's a stuff that happens, and that blood fluid gets fenestrated and pushed, and it changes into a lymphatic, a clear lymphatic liquid. And then odontoblast, which are like these little pumps inside the tooth, they pump out this lymphatic liquid, which is drawn into the tooth and then kind of is in a centrifugal fashion, comes out and onto the surface of the tooth. So, the teeth kind of have this like lymphatic microscopic sweat that comes into the surface of the tooth. And then that coalesces with the saliva to kind of be a toothbrush, to clean the tooth, to prevent cavities. Or if there's an area that's weak like a cavity is coming, it will help, you know, repair that area with the saliva. So, then that system, if we're stressed, if we're having, like, you know, sort of peak hormonal times of teenage days, or pregnancy, or if there's chemicals in our diet, or if we're eating a lot of sugar. And this isn't about the sugar sitting on the teeth, this is about the sugar that is then affecting our blood sugar levels. If that happens, that system, that dentinal lymphatic system goes stagnant, which isn't good because then you're not getting the nutrient circulation. If that stress and that stagnancy continues, the dentinal lymphatic system actually reverses. And then our teeth become like straws sucking into the tooth from the mouth, all the stuff that's in the mouth. So, that's like virus, bacteria, etc. And then that is actually the genesis of how a cavity is formed, and that's the beginning of not healthy teeth.

And so that's like a deeper and understanding of the body system, how it's all connected than sort of what the American Dental Association decided in the 1940s, because they were kind of debating at that time. Is it systemic? Is it not? And what one in that those days was the acidogenic theory, which is... That's where we are today is that acids and sugar...like, you know, sugar or soda sitting on the teeth is the cause of cavities, which, again, that's not ideal for our teeth, but it's deeper than that. It's the whole system, right? And having an acidic body or, you know, sugar that's affecting the blood sugar levels. So, I feel like that's just such a good thing for people to know. And then, of course, within the oral environment, there's a whole balance where we wanna have, like, a nice homeostasis for our oral oasis and that is the microbiome. And so many of our modern Americans for dentistry, you know, just walk down that drugstore or aisle, and all of the tricks of that aisle really are disruptive to the oral microbiome. For example, your basic mouthwash that's in the drugstore. They create with a synthetic alcohol over 30... I mean, this is like a 10-year-old stat, so I'm sure it's increased, but 36,000 cases of oral cancer a year are created by these synthetic alcohol mouthwashes. For example, you know, that because why it's throwing off the microbiome of the mouth. So, is the triclosan in toothpaste, or the saccharin, or the sodium oral sulfate creating receding and bleeding gums. So, literally, then the tools of the trade are making it a vicious cycle, an uphill battle to kind of get a grip on the oral microbiome.

Katie: That was such a great explanation. And it brings so many important points to light. I think of the comparison with how the conventional approach to dentistry reminds me of how often people think of

skincare, where they think just, oh, I'll treat the outside topically, but so much more comes from the inside and what we're putting in our body, not just on our skin. And the same, of course, is true in the mouth. And I think when you explain it so well like that, it becomes much more logical that, of course, we wouldn't want to kill the oral microbiome, just like we wouldn't wanna continually take antibiotics and kill our gut microbiome. People understand that. But that all of these really harsh things that we're often told to use in our mouth might actually be creating more problems than they're solving. And from my understanding, you can probably explain this better. There's kind of almost competing things going on when we're talking about problems like gingivitis versus cavities, and that's kind of different bacteria that can get out of balance that make one or the other more problematic. Am I right about that? And if so, what are some of the ways we can address those imbalances?

Nadine: Yeah. And I feel like there is a whole bacterial imbalances playing out. And on one level, we don't need to know the specifics of the bacteria, on one level because we wanna bring things into balance yet, it's really good that we now understand the microbiome in the mouth because it's so key. For example, everybody has strep in their mouth, and that's a cavity-causing bacteria. Everybody has it. Some people get cavities from it, some people don't. So, what researchers are now starting to understand is that perhaps then that person or that mouth is missing the ancestral bacterial buddies, so to speak, that would keep the strep in balance. So, that's why we don't wanna have a scorched earth policy with the interior of our mouths because, actually, we need a mouth of bustling bacteria to kind of keep the dentist away, which seems kind of crazy. But I also say with skincare because we have a skin microbiome, the bacteria are the beautician. And we can't, like, benzoyl peroxide and exfoliate our microbiome away and expect good conditioned skin, right? So it's the same with our mouths.

And what I also find so fascinating is many of the herbs and botanicals that have been used for thousands of years for oral care, like clove and cinnamon, and rose, and tea tree, and frankincense, and, you know, just depending what culture, what region of the earth. And those are things that I love using in oral care ingredients. But now with the study of the microbiome, we've got researchers that show that these ingredients, like the essential oil of clove, which is so classic for oral care, they contain quorum sensing inhibitors. So, pathogens, like oral pathogens or pathogens in the body are sort of free-floating around like phytoplankton sort of in the ocean of our bodies. And then when, you know, immune system's down or whatever, you know, when there's imbalance, then these pathogens gain traction through the quorum sensing. So, the quorum sensing helps them to find their buddies and group, and form biofilms, and, you know, help the pathogen's gene expression. So, a quorum-sensing inhibitor is something that inhibits all of that.

So, your clove, your cinnamon, your tea tree, they're inhibiting the quorum sensing, the grouping, and the gene expression of the pathogens, which is awesome. And to me then things like an essential oil become the perfect medicine for balance because they're able to clean up the pathogens, yet work with the beneficial bacteria without depleting it like an antibiotic would. And so they're able to clean up the pathogens, but keep the beneficial bacteria intact, which really what else do you want? Right? And then the other great thing about a lot of these beautiful botanicals is that they also help to stimulate the gums. You know, they're vulnerable, so they can help. You know, the tissue in the mouth is one, it's epithelium, which is a very, like, one cell thin, so to speak, tissue. So, as you know, it could maybe bleed pretty quick, like, it doesn't take much to have a bleeding gum, but it also can be quick to heal because it isn't fixed skin. And so we can turn around things in the mouth if we have the right stuff.

Katie: Yeah. That's an important point how rapidly the mouth is capable of healing and changing, even more so than other parts of the body. And I'm glad you mentioned that we all have strep in our mouth, just, like, a medulla, we all have strep in our gut. We have group B strep in our gut. Every pregnant mom has it. It's just the amount can affect whether or not it's gonna become problematic during birth or not. Same thing in the mouth. It's not that we can ever fully eradicate these things. It's keeping them in balance. And I think understanding that shifts us from a mindset of, kill the bacteria, like you said, scorched earth to know how can we nurture the right balance, which that was my focus in creating my company Wellnesse with a Toothpaste was how do we put these natural ingredients that help keep the good bacteria that we want and that help that bacteria to stay in the right balance, and get stronger and help also it to keep the other bad bacteria in balance, because we're not the ones who are killing the bacteria. Our oral microbiome knows how to do that if we get out of its way.

Nadine: Exactly. Yeah.

Katie: And you also mentioned about blood sugar and how... I love that point that, you know, blood sugar might be more important than the sugar on your teeth, which I think is another paradigm shift for a lot of people to understand. Let's talk about some of the ways that diet and lifestyle affect our teeth because this was a new concept to me when I started reading, for instance, Weston A. Price and looking at traditional cultures and how beautiful and strong their teeth were, and how he made that connection to diet and lifestyle. And I feel like we've lost a lot of that wisdom in our culture.

Nadine: Yeah. Yeah. And we love the work of Dr. Weston Price. He was the president of the American Dental Association in the '30s, as you know. And then he traveled around the world with his wife kind of like Indiana Jones style because they were trying to find cultures that weren't, you know, totally infiltrated by the white man, so to speak. And so he would go to like the Hebrides, which are these Scottish islands. And then, like, twin brothers, there was like one in the coast sort of, like, so he was, you know, at the port with all the sugars and the pastry shops. And then the other brother was living inland. And then the difference in their teeth structure was amazing. Or he'd go to like Swiss Alp regions and then the tourists town, like that pop... is it St. Moritz? For skiing, you know, the teeth there versus the teeth of the little village that still had a church. And actually, I don't know why, but their church kept a lot of the skulls from the people that had been there before. So, you're looking at all these really great dental, you know, teeth structures. And they're eating, you know, the butter that was made from the cows that were eating from the low levels of the mountains in the spring. And then getting that, which he didn't know then was this vitamin K2 in the fat.

So, yeah. What he really found was that we need our fats. And that there's this something in the fat that really helps to activate things. And what modern science has deduced from his work is that is vitamin K2, which joins with vitamin D3 to what the great things about those two fat-soluble vitamins is that they drive minerals into the bones, hence the teeth. So, that's very important. And right now, we're really, you know, eating food that has grown in the shadows of factory farming and pesticides, which do not allow proper photosynthesis. And then we're eating, you know, dairy eggs, you know, butter, milk, meat from animals that have not seen sunshine and are not eating the grass made from the sunshine. And that all produces good amounts of K2 in the eggs, and the dairy, and all that. Whereas factory farm animals, their eggs, for example, have no K2. So, we need that K2. And then we are, of course, living in a sunlight-deprived society, and that's our vitamin D generator. So, you know, we're lacking... Generally, we have, you know, the general population is deficient in D3 and K2, and those are so, so important to bone health.

So, that's one thing I really appreciated about his work was just really seeing that we need those nutrients. And then it was the work of Dr. Melvin Page who... So, yeah, when we combined the Weston Price stuff with

Dr. Melvin Page, and then there was also in holistic dental care, I talk about these other, this husband and wife research team. I think it was.... They were also at this time studying how school children, you know, if they ate, I think they all ate oatmeal and they put like vitamin D in... You know, the vitamin D was basically reversing or stagnating cavity development. And then the oatmeal with no vitamin D, it was just sending them down the path of more cavities.

So, then when we combined this and also with the work of Dr. Melvin Page, because he was saying, once your blood sugars are high, then you're not creating the same amount of phosphorus. So, then your phosphorus ratio is depleted. And, of course, that also affects bone health. So, it's just like bringing in all these interconnecting studies that are similar but show us different things.

Katie: So, building on that, what are some of the ways we can get stronger? And, of course, that means also naturally whiter teeth. I know people also tend to use pretty harsh products to whiten their teeth, including and harm the oral microbiome. But I know I've experimented with this and there's some natural ways to do it. So, walk us through how we can build strong, beautiful teeth naturally.

Nadine: Yeah. Well, and then one thing to talk about with whiteness is the whiteness of the tooth is really coming from within. So, we're very obsessed with the enamel. But enamel is actually like transparent like glass, and it's the health of that pulp chamber, which I like to think of fat, and plumpy, and juicy, right? Fat with fat-soluble vitamins and all the nutrients. So, your vitamin D3K2 will, because it's creating health for the pulp chamber, then that gets reflected through the teeth. So, there's that really the part of nutrients that will make white teeth.

And then, of course, yes, the enamel can be stained or it can get obviously discolored, but is it also because there's a buildup of plaque and tartar that is getting discolored, especially, you know, as we eat our blueberry smoothies and our whatever, right? So, we eat a lot of high pigmented food or the, you know, wine when you get that, the wine teeth at the end of the night, because it's also, your plaque is getting discolored. So, when we just think of it as an enamel and then we're using these chemicals on the enamel, you know, then we're making the enamel thin and prone to yellowing as we age because, you know, we're taking away from the tenacity of the integrity of the enamel. So, there's that.

Now, to keep it white, so we think of our nutrition and fat-soluble vitamins. And then, you know, hydrogen peroxide is a great thing. You don't wanna use it too much because it can be a bit astringent on the gums, and we wanna really keep the gums healthy. And I like to think of them like turtle necks around the teeth, like nice cozy gums. You don't want receding gums taking you to like a v-neck or a cow neck situation. So, we've gotta care for those gums. But, you know, doing like a diluted... You know, generally, you wanna use hydroperoxide at 3%, but you can even take it down to like a 1% for a more regular rinse. And then if you follow any hydrogen peroxide rinse with a baking soda, infused water rinse, which is just like throwing some baking soda and water. You don't have to necessarily measure it because that's immediate alkalizing. So, then that, you know, alkalinity will just calm them out down.

And then another fun thing you can do is just take some baking soda, kind of, like, just put baking soda in a little empty jar and then put a little of your diluted 3% hydrogen peroxide in there, mix it up, don't put a lid on, and you kind of let it dry out, kind of evaporate. And then you have this kind of infused hydrogen peroxide baking soda. And then that's just really good for whitening your teeth, like, once or twice a month as well.

Katie: Those are awesome tips. And this will be probably a little bit more controversial of a question, but one that I also came to my own research and the question of if cavities are reversible because conventional

dentistry seems to say under no circumstances can they get better. The only solution is to fill them. And this was another area that when I started researching, I was really surprised that there seemed to be a lot more to the story than that.

Nadine: Yes, I too was completely surprised. And, yeah, that is conventional dentistry. But when you go into...because anything I know, I know from dentists, like, obviously, right? They're the ones with that firsthand experience. And there's some really Renegade dentists that have really gone into it. And so, yes, you can stop a cavity in its tracks with, again, just literally bringing up the nutrients, getting your vitamin D up. You can also, yeah, which is really you can just stop it. And generally, it will repair. So that tooth may be discolored a bit at the end, but the cavity has ceased. You can't regrow a tooth at this time, but the technology's there. And 10 years ago, it was supposed to be coming in about 5 years. So, I'm not too sure where it's at yet, but it should be happening any day. But they have a little like silicone kind of mold, you know, like, that's the shape of your tooth, put that on the gum line. I believe they've done it with pigs. And then through stem cells and different things, they just kind of put that on, and the tooth does eventually regrow. So, I feel like that's definitely in all of our future.

But, yeah, you can definitely cease a cavity, you can stop it in its track, and the tooth will rejuvenate that tooth area. But the tooth isn't necessarily gonna regrow. So, if you've had a tooth filled, you know, you're stuck with that. And it's good if you can have a dentist where... That's actually how I found out about it before I created the healthy gumdrops. I was at a holistic dentist. They weren't that holistic, but the hygienist was very good. And she was, like, you know, I had neglected, that's also I had to really think about gum care and stuff, but she's like, "You have a beginning of a cavity." So, she's like, "Go home, mix your oils up or whatever you do, and take care of it and come back in six months, and we'll x-ray it again." And I was like, "What do you mean?" Like, this is a thing. And so I did. And that's how I made that creation. But it was so neat to get firsthand, to see like it's not... You know, like, when you're a kid and it's like, you have a cavity and we're gonna fill it.

So, yeah. And that's what I go into my book is how you can stop or reverse a cavity depending at what stage you're at, depending on how you're gonna... But yeah, we've had many kids go to the dentist, they've had seven, they do the protocol, they go back and maybe only one needs to be filled or something like that. So, we wanna know that our teeth is alive, our mouth is alive and it is connected to the rest of the body. And so we can heal, we can regenerate. You know, if you've got receding gum pockets, you can bring those back down, you can really help the situation.

And one thing I wanted to add... So anything that you can do for bone health is gonna help the teeth as well. You know, diagnosis of cavities as well as disease is up in the springtime. So, that's because if you...you know, a lot of us have no sunlight in the winter, so we're kind of, right? So, it's like there's a cavity season, and it's definitely related to the lack of sunshine. So, that's also important for bone health. And then I also like pulse electromagnetic frequency or PEMF. You know, that just helps bones, in general, and that does help strengthen teeth as well.

Katie: Yeah. I remember very clearly reading in an elementary school textbook that teeth were the only part of the body that could not heal at all. And now I look back and think, well, that's like...because I had a similar experience where I had many small cavities starting. None of them were being, to the dentine. And I did this, it's probably a similar protocol. I'll make sure your book, of course, is linked in the show notes, so you guys can have the details of that protocol, and went to a new dentist because we moved and they found no cavities. And that was such a light bulb moment for me.

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I also love that you brought up post electromagnetic therapy. I know this isn't one necessarily that everybody's gonna have access to. But I saw this first hand, my daughter broke her arm in two places while pole vaulting and so...

Nadine: Oh wow.

Katie: ...PEMF was one of the things we did while she was recovering. And we went back, it was a really severe break. And three weeks later, it was completely healed and set. And I think PEMF, and K2-7, and a lot of these things we're talking about were a big part of the reason she healed so rapidly. You mentioned mixing up oils, and another thing I've written quite a bit about is oil pulling. And I'd love to hear your take on it. And can you explain it for someone who might not be familiar and talk about maybe best oils to use, how to do it? Any specifics we need to know?

Nadine: Yeah. Well, oil pulling seems to have its roots in aromatic medicine, and it's really just about traditionally, they would use a coconut oil or sesame seed oil, which you can use. You can also use, I think, jojoba, olive oil, or MCT oil being a derivative of the coconut oil. And I like those because they don't... You know, coconut oil could solidify when you spit it out in your sink, because it's solid at room temperature. So, MCT is really nice for that. And then it's just simply taking a teaspoon and swishing it in your mouth for like 10, 15 minutes, and spitting it out. So, that's the simple mechanics of it. And, of course, you can kinda upgrade that by adding, you know, a drop of peppermint to that teaspoon, or a little bit of charcoal, or some probiotics, some prebiotics. And I have recipes, I think in both books and maybe in our website on making tooth better cups, which you can just basically, you know, take your oil, like a coconut oil, I don't have the

exact recipe in my head, and then add essential oils, add your probiotics, and then put that into a little silicone tray, like tiny cubes. Pop that in the fridge for a couple of hours. And then you can pop those into a jar, have them on a jar on your bathroom counter. And then kids and adults can just pop a cube in their mouth and then do their oil swishing that way.

Katie: Yeah, we keep a separate little mini trash can just for spitting coconut oil, so it doesn't plug the drain. So, that's my little tip is, to your point, don't spit it in the drain. A couple more quick questions related to oral health and then I wanna make sure we also get to talk about sunlight because I think this is a very important related topic. The first being, are there any other steps people can take to avoid cavities and gum disease? I know you talk a lot about this in your book. So, I would definitely encourage you guys to grab the book. But especially maybe for parents listening or just for any of us, what are some things we can, you know, avoid or do that help in either direction?

Nadine: You know, there's the oil pulling, which is great. And I think there's also just, especially for kids just swishing. So, just taking baking soda, popping into water, or even making a saltwater by taking a teaspoon of salt to water, and making these sort of alkalizing swishing solutions, which are great. If you've eaten acidic stuff or fruit, you know, like, a great fruit, or had some kombucha, then you can neutralize the mouth. And obviously, kids don't have their brushing skills figured out fully. So, the swishing just helps take care of the whole mouth. It alkalizes it. Another great thing is liquid magnesium. You can dilute that in water. And again, that's really alkalizing for the mouth. And then, of course, diet. And then how we're brushing is so important as well because it's very easy to, you know, help the bleeding and receding gums if we're not brushing properly. So, your toothbrush, you know, six months from now shouldn't have any split, like a toothbrush, shouldn't have split bristles, that kind of thing. And you wanna think about the gums too, just how we kind of dry brush the body. So, you also wanna kind of brush and stimulate those gums.

And you start brushing sort of up on the gum, like, where your cheek starts and the gum. And you're brushing, we usually go up and down. You actually wanna do one-direction brushing because we got the sulcus, which is where the gumline joins the teeth. We really wanna take care of that area. We don't wanna send stuff up underneath it. So, we're brushing the top teeth, you know, down, bottom teeth up, not back and forth. So, that's really key as well.

And then, you know, cleaning your toothbrush in a hydrogen peroxide. Just having it sit in a 3% hydrogen peroxide a couple times a week is also really good to keep your brush super clean. Make sure your brush is always like fully drying. So, hopefully, you got like maybe sunny place in your bathroom. If your bathroom, you know, is kind of damp and there could be unseen mold in that situation, you definitely don't want your toothbrushes hanging out in that kind of a bathroom. So, that's important too, just, like, you know, how we're brushing that kind of thing.

Katie: And what about root canals? I know this is another controversial topic, and I always get the questions, like, what if you haven't had one, why should you avoid them? And then if you have had one, what do you do?

Nadine: Yeah. So, we do wanna avoid root canals. The concept is cool. Like, it seemed like it was a good idea where you can preserve the tooth. That pulp chamber we talk about is basically cleaned and scraped out of the tooth. And the idea is that it's sterile and hermetically sealed. But no root canal is, and it can't be sterile because our molars have 300 meters of microscopic tubules in one tooth. So, we can't sterilize it. It's impossible. So, a root canal, even if it's not bothering you and it seems like everything's fine is really harboring and creating necrotic bacteria that then seeps into the bloodstream. And so you do wanna avoid a root canal.

And also sometimes it's not even a root canal candidate. So, I talk about that in my book too, like, where a couple of journalists have had, you know, okay, gone to the dentist, sat somewhere and decided really what needed to happen to that mouth. And then, you know, they would see 20 or 50 different dentists and have literally 50 different...like, you know, from \$500 appointment to \$30,000 appointment. So, even though they're all looking at the same x-rays, these dentists, you can see the amount of interpretation that is really... And then when actually the ADA, I was asked about this one, journalist 50, you know, story, the ADA was like, well, you know, dentistry is an art, not a science. So, that was a surprising message.

So, A, is it really, really a root canal candidate? Or, you know, does it need a filling? Or what is going on? And then the most important thing is to also find a dentist that really works with biocompatible materials is truly holistic because a lot of us actually need to undo previous dental work. And then, you know, you want a good future because now we know that, like, one move at a dentist, like, getting a root canal could affect us 30 years down the road. Even with extractions, like, a wisdom tooth or having things extracted. Now we know too, that those extractions, standard protocol to leave the periodontal ligament in. So, what we didn't know but now we do know is that the gum grows over that periodontal ligament. And then that periodontal ligament kinda rots the jaw bone. And then there's jaw cavitations that don't show up on a regular x-ray until they're 80% developed. So, I bring that all up also because if you have a root canal, you're gonna need that. So, if you have a root canal, you don't necessarily need to have it removed. You wanna keep an eye on it. And if you have, you know, anything declining in your health or an autoimmune thing you can't figure it out, you know, you're gonna wanna most likely have that root canal tooth removed.

There's a doctor in Europe, who's been working with cancer patients for decades, Dr. Josef Issels. And he is, like, you've gotta remove root canal teeth before. You know, he'll work with you. But causation is not necessary correlation. So, we gotta keep that in mind. We don't need to be taking out all of our root canals, but you really gotta think about your situation. And, of course, if it's a back molar, it's pretty easy to just have it removed, and you don't need anything in its place. If it's front teeth, you know, you're gonna wanna have something in place. So, there's bridges, which it's a bit of a compromise because you have to shave down good teeth on each side so it could stay in. There are things like temps, which you can just pop in for going out. But I really still feel like you want something for your structure.

And then traditionally, you know, a tooth could be put in with a post, but those are titanium posts, which is a very toxic metal. So, biological dentists that know their stuff will use either zirconium or a ceramic. And so that's important to know that those choices are out there and they have... You know, zirconium has been used for about 30 years in Europe, it has a very good track record for our immune systems. It's still a foreign object in the body, but it has a way better track record.

So that might be something you'll consider for the front. But if it is a root canal or if you do need something extracted, but just know that 67% of all wisdom teeth removals are not needed. So, anyway, you do need that taken out. So, if there is something being removed, you gotta go to a dentist that will also remove the periodontal ligament. Or if you've had wisdom teeth removed before or an extraction, a good dentist can check those and see if there is a jaw cavitation. I had mine done. Definitely where, you know, I had two wisdom teeth removed when I was in my 20s. There was cavitations there. And what they have to do is scrape the bone, scrape off the infection, allow blood flow back to the area, a blood clot forms, which is good and healing to that area, and it cleans it out. So, that's a good thing is we can take care of the jaw cavitations. And there are solutions for root canals. But the studies that were done show that a 100% of all root canals do harbor necrotic bacteria, and that can really be pulling our immune systems down.

Katie: Wow. That was awesome. I took a lot of notes for the show notes, and I was gonna find all those at wellnessmama.fm. And I wanted to make sure we reserved a little bit of time to talk about the importance of the sun because this is another area that I feel like we made some misstep when it comes to our modern interpretation, and that we are now seeing the real-time results of our fear of the sun. So, let's start broad and talk about why the sun is so important and then maybe go into some of that reasons we might not wanna avoid it as much as we have been.

Nadine: Yeah. Well, I really like if we think about it, I mean, the sun is really the capstone of our existence. It's like why everything's alive on the planet. And we don't really wanna cut off that life force, you know, in general. Of course, I think the fear, that a lot of the fear of the sun has come from our skin. But when we really step back and look at the design of the skin, we will know that there are thousands of vitamin D receptors that are ready to respond to the skin. They wanna be filled with all the information from sunbeams. You know, being received by those vitamin D receptors, we wanna have those vitamin D receptors brimming with vitamin D as this is so key to our immune system. When the vitamin D receptors are filled with vitamin D, then things like bacterial ligands can't come and basically switch off the immune system because they can't get into those vitamin D receptor sites. So, our skin is literally designed to be exposed to the sun's rays. And you know, our skin dilates to receive those rays. And besides vitamin D, which comes from the ultraviolet rays, there's the whole spectrum of visible and invisible light, which, I'm sure for, you know, hundreds of years to come, we will continue to find out, you know, more and more about how beneficial they are. But there's, you know, the infrared light spectrum as well, which is very important to cellular health, literally communicating with our mitochondria.

So, when we are exposed to sunlight during the daytime, we get... You know, if it's a time in winter here, we don't have the UV rays to create a sun tan, but we have the other, you know, the infrared and stuff that we can get from it. But why we want the full range of light is because it's literally giving our bodies information and nourishment that isn't something we can get from a bottle. And having vitamin D, we're so lucky that it is a supplement and we can have it, but that's a fat-soluble form of vitamin D. And when our skin and the sun make a water-soluble form of vitamin D, which is very essential to our inner nourishment... Vitamin D is really it's called a vitamin, but it's really this hormone that we need. We also create a very healthy cholesterol sulfate. Vitamin D levels being sufficient helps to balance cholesterol levels. So, if cholesterol levels are out of whack, it could be because you're not sufficient in vitamin D, for example. So, we've got like that whole situation going on where being time...

Sun also helps to create things like antimicrobial peptides and cathelicidins, which then help to prevent cytokine storms in the body, which is great. And then, you know, building up our melanin layers also helps to create kind of our own sunblock so that if we start slowly but surely, and we start in the spring, we can build up a layer so that we have sun protection in July, for example. So, that's really key. Also, daytime exposure to sunlight creates a melatonin that is just in the cellular level. So, at night, we create a melatonin from the pineal gland that circulates through our body, which is awesome and essential for sleep. But the daytime, this production inside the cell doesn't circulate through the blood. So, we won't get sleepy. But it's an antioxidant that's more powerful than glutathione. And what it does, it acts like a cooling fluid for the production, because the mitochondria helps to convert and make energy for the ATP. And in that conversion and making that energy, reactive oxygen species are created. And so even in the healthiest person.

So we need that cellular production of daytime melatonin to be like the cooling fluid that cools down that process of making the energy in ourselves. So, there's just so many secrets to that can get revealed when your body starts talking, you know, to the sun, getting that information it needs. And I think getting that base layer

of melanin in the body is good for our skin. And it's the reasonable and wise interaction with the sun that is good for the skin, good for the body, and not gonna create wrinkles. We get wrinkles when we are fueled on poly, you know, like, PUFA oils of Missoula, Canola, and then we're baking in those bodies, drinking Coca-Cola, and then using sunscreen, which we know is filled with endocrine disruptors. But the real issue with sunscreen or like the further issue is that then we are cut off from the UVB ray. So, through sunscreen, we say no to the UVB, which is the vitamin D producing ray. And then we just get its ultraviolet partner UVA without UVB. And UVA on its own is skin damaging. So, that's the silly part of it all is that, if you're tanning with sunscreen, you're not getting vitamin D and you are creating skin damage.

Katie: And I would love to do a round two with you one day because I know you also have a lot of expertise related to the skin. And there's so much we didn't have time to cover today. But to make sure I respect our time in this episode, a couple last questions I'd love to ask. The first being, if there is a book or number of books that have profoundly impacted your life. And if so, what they are and why?

Nadine: You know, I love any Rumi, like Rumi. I feel like has really impacted me saying things through like a poetic line. Sometimes there's like a whole world in a sentence that I really love with that. And then you Krishnamurti, this philosopher, I guess. He died in 1986, but he has a whole realm of books that are just so great. Books like "This Light in Oneself," "The Revolution Within," those a bit were very profound, I think, in my understanding of how the mind works and just existing on this planet. So, I'm really thankful to those two people.

Katie: I'll put links in the show notes to those as well so you guys can find those. And any parting advice for the listeners today that could be related to something we've talked about or entirely unrelated?

Nadine: Get outside and in the sun.

Katie: I second that completely. It's what I'll be doing as soon as we wrap up this podcast.

Nadine: Me too.

Katie: You are such a wealth of knowledge. This was a really, really fun interview. I think we got to go deep on some really fun topics. Like I said, I'd love to do another round one day and get to tackle some more. But thank you so much for so generously sharing your time today.

Nadine: Thank you so much. It was truly my pleasure.

Katie: And thanks as always to all of you for listening and sharing your most valuable resources, your time, your energy, and your attention with us today. We're both so grateful that you did, and I hope that you will join me again on the next episode of "The Wellness Mama" podcast.

If you're enjoying these interviews, would you please take two minutes to leave a rating or review on iTunes for me? Doing this helps more people to find the podcast, which means even more moms and families could benefit from the information. I really appreciate your time, and thanks as always for listening.