

A Special Interview with Dr. Bill Osmunson By Dr. Mercola

Dental Hygiene

DM: Dr. Joseph Mercola, DO

DO: Dr. Bill Osmunson

Introduction:

DM: Welcome everyone. Today we are very fortunate and privileged to have Dr. Bill Osmunson with us today. We're going to talk about dental health which is a phenomenally important component of our physical health. From my perspective as a physician, you know, one that's frequently under appreciated as to how much of an impact it can have on your biological health.

There are so many different areas such as root canals and cavities of course. I mean, obviously, there is the mechanical component and the physical discomfort but it's actually a significant systemic influence. It really is profound.

We're delighted to have Dr. Osmunson with us today.

DO: It's great to be here. Thank you.

DM: You come to us from the Pacific Northwest, both Washington and Oregon. You've been practicing for 33 years. Really our leader in the movement to help us understand and really eliminate and minimize the fluoride component which we'll talk about later.

Today, we're going to talk about some of the elements of how we can optimize our dental hygiene and some of the variables that contribute to that that many people may not really give a second thought. Frequently, it's important to focus and pay some focused attention on the topic. That's what we'd like to accomplish today. Why don't you start and give us some general principles.

DO: The mouth is really the window to a person's health. It's easiest to see in the mouth as far as some of the soft tissues and how the health of the mouth is doing -- that's a reflection of how the rest of the body is doing. The mouth is very important.

If there is one thing that I would do -- most important when you go see the dentist or you go see the dental hygienist, is ask them one question, how am I doing in my mouth? Because, I can't see in my own mouth very well. My son-in-law just did a little bit of work for me I think it was two days ago. I knew exactly what he was doing. It felt completely different.

What we feel in our mouths of what's happening and what the dentist can be and the hygienist can be are eyes to look carefully to tell us what's happening, how we're doing on our cleaning, if our gums are looking healthy. It tells us a little bit of our health as far as our diet. But prevention is the most important thing.

Dentists don't really get paid for talking to you about prevention. We have to coach that out of them. Most are very willing and very excited talking about it but we have to coach them to tell us. What does our mouth look like?

DM: It's tragic. This is sort of a guiding principle throughout all of life not just health, is an ounce of prevention is worth a pound of cure. It's probably about the right ratio and probably more so in many cases. So that's the focus and the unfortunate tragic focus in most of dentistry from I think from most people's perspective is that when you think prevention, they think...we'll we've got that covered it's just fluoride. That's a whole other topic.

Forget the fluoride because that's not where we want to go. We will discuss that later. There are some simple things that you can do. Of course we're going to highlight the obvious one's you've heard but just emphasizing these and some little tweaks on it can have a profound influence on your health.

DO: I've had several -- at least two of my professors in dental school and many others since then -- who said that it's more important the diet we eat than the cleaning of our teeth. Every dentist kind of cringes with that because cleaning teeth is extremely important but our diet is very important especially for children. I don't know how you want to start out with this whether we start with the children and work as we get older or start with adults and then go down to the children and talk about them.

DM: We can start with children because many of our viewers have children and it's important to know that or they have nephews or nieces.

DO: Of course we're going to talk about fluoride later but that fluoride starts before conception. Of course, mothers not having fluoride while she's carrying the baby. Mother's milk is very important for an infant. It's considered by the American Academy of Pediatrics as the normative model against which all other nutrients -- compositions for a child is to be judged. Mothers' milk has almost no fluoride. We need to the same thing for an infant. Definitely not using fluoridated water to make formula.

DM: That's even a position that the hyper-conservative American Dental Association even submitted to and now acknowledges that you should not use fluoridated water in reconstituting infant formula. Now infant formula is not a food that should be given to any infant but for those that do, even they recommend not to use it.

DO: Exactly and that's critical. Number one, the infant if at all possible have mothers milk. Second thing is sometimes a child wants to eat more or they're hungry. They wake

up at night. They're not sleeping as well as they should. The mother is tired so she'll take the baby into bed with her and nurse.

I've had several people say that nursing does not cause bottle caries; however, there is a little bit of disagreement on that. I'm not a hundred percent sure. I'm not the baby expert on that. However, I do know that it's probably best at night not to be feeding the child while they're sleeping because a child will suckle while they're sleeping.

DM: It's a reflex.

DO: It's a reflex. If a bottle or a mother's breast is still in their mouth they will get a little constant bathing with that sugar.

DM: For those who may not be familiar with bottle caries maybe you can just briefly discuss that.

DO: I want to talk about that. Bottle caries is when the food gets on the teeth as they're developing. It's usually in the very front teeth of a child. They go to bed with a bottle and that bottle is sucked on during the night of juice or milk and it stays on the teeth and it ferments and it will rot those front teeth. No amount of fluoride will prevent that. That's a hundred percent a diet. Don't put the baby to bed with a bottle.

Of course if they don't have any teeth, that's not going to be as much of a problem but once they start getting teeth then we want to give them water at night if at all possible or give them the milk at night if they need it and then take it away from them and give them some water to sleep with if they're going to have the water.

DM: It's a pretty powerful illustration of the influence of diet.

DO: Absolutely.

DM: Perhaps the most powerful you can have. I mean, obviously as an adult we're not sucking bottles but we do have similar influences that can have relatively profound impact on our tooth health.

DO: Right. That can be a huge problem for a child in their diet as far as the first six months to nine month of the bottle caries. Some infants will nurse clear enough to three, four, and five years which I don't find to be that much of a problem. Mother's milk is wonderful. If a mother and a child want to nurse that long, I don't have any problems. Talk to your pediatrician. It's a wonderful source of nutrition. Bottles are a little bit more of a problem because of the juices we tend to put in, the sugars that are in it for a child.

There is another illustration for adults, I forget the research we did. I learned this back in dental school. I think it's so powerful as far as diet is concerned. They took some subjects, people, and they put a dye into their blood. That dye went throughout their blood.

After a certain period of time, I think there is 20 minutes or so. They would pull out a tooth. They needed to do this for probably the wrong reasons but anyway, they pulled out a tooth. Then they would section that tooth and see how far the dye had gone through the tooth. They could see that blue dye and they have photographs of it just going right on through the tooth.

The tooth is like a little fountain. It's constantly bathing itself, squirting from the inside out. I mean, it doesn't squirt everybody in the face it just bathes itself; pushing the acids, pushing the bacteria, pushing all that waste product away from the tooth. So there is a natural cleaning. This is what he had for not since men was on Earth. This is what most animals have, this natural fluid flow.

So what they did is they waited for a little bit longer, the next day, or week or whatever. Until all that dye was out of the person's system. And then they put dye in again and they would have them eat some sugar and then they would pull out the tooth and they would say, okay, after 20 minutes, we've got this tooth on out. Now we'll section it and see where the dye had flowed. You can see it. It went up into the pulp chamber and it never went through the tubules of the tooth to the outside.

So we know that when we eat, for some reason, probably when the saliva starts to flow, that the fluids going to the teeth inside don't flow as much and there isn't this natural resistance. Any time we eat, the more we snack, the less the fluid flow. That doesn't mean that we should eat once a week. That means that we shouldn't be constantly nibbling on things, constantly keeping our saliva going. We need to eat at specific times and then clean our teeth or make sure that we're not adding more things.

So with children then the next thing is they tend to want to have foods fairly frequently. It's a wonderful baby sitter. There is nothing like a cracker or a little bit of something. Children need to eat but that will destroy some of their desire for a good food at meal time. So if they're not really hungry, they're going to want to have the dessert before they have their good foods.

It's good not to have snacks right before meal times or too close to meal time. So that the child when they sit down, they're going to look at those peas and look at that broccoli or look at that... sometimes broccoli is strong for a little kid but a lot of times peas are. Different vegetables will be better.

DM: It's probably a good rule for adults too.

DO: Eat your dessert first...not a good idea. That's important to not snack too much.

The next thing is sticky foods. You know these Sauers and these Gummi Bears and all those kinds of things. The tooth has deep grooves. When we look at the tooth and we look at something like this, we say, there is little bumps on the tooth and it has some grooves but when you look at it on the microscope, those grooves go way, way down.

It's impossible to clean your teeth, just impossible. You can do it 24 hours a day and you would never get down under these grooves.

The bristle is much too big to get down there. We have to rely on our body's resistance in order to prevent cavities in these deep grooves. But if we eat something like a raisin, it will stick into those grooves and be very difficult to get out of those grooves. I love raisins but I'm a little slow on using them especially for kids to have them around as a snack food. Dried fruits are the same thing. They can stick into those grooves a great deal.

In my office for preventive purposes, I really like to take like a little air abrasion or a little tiny Bissurotomy burr, go in and make sure that those grooves are very clean and then I'll flow in a tiny bit of a sealant or filling material in those grooves so that they don't get the decay in the grooves. I think that's a very important preventive measure that's good.

DM: Certainly it can help from that perspective but there was some concern in the health community about these sealants because they have their source that are a type of plastic I believe and they have a BPA or bisphenol A in there or phthalates or both. Not the phthalates but the BPA I think.

DO: Bisphenol A. They do have a little bit of that. There are some that don't

DM: So you can get a BPA-free sealant?

DO: Right.

DM: So if you're going to do that make sure it's BPA free.

DO: Yeah, it is better. However, the amount that you get there is much smaller. If you didn't have the sealant, and you had a bigger filling, then you have the choice between mercury which I do not recommend. I think it's very bad or a BPA plastic filling which is going to be maybe 50 times bigger than the sealant. When we're talking about quantity, the sealant is just a tiny amount compared to the filling.

DM: A small fraction maybe 2%. In biology there is a principle, a significant difference -- typically for your body to notice the difference it has to be at least 2%. If it's less than 2% you won't be able to perceive and this is about the threshold that you're saying. It's like a 2% difference. So everyone almost don't even know it.

DO: Right. Probably similar to some of the BPA you're getting off of the plastic bottles.

DM: Thank you for expanding on that concept because that was -- I do know that we talked about it many years ago. The conclusion I reached that it was probably not a great idea but it appears that done wisely, it's probably better in the long run.

DO: I would much rather no sealant. I would much rather no filling. If we can we have the tooth develop so that it doesn't have the deepest grooves, we're better off. But where necessary, I think you're better to catch that little sealant first rather than the filling. Or if it's a filling, catch it very soon.

The whole idea of seeing dentist every six months -- this is something where with the economy being a problem, patients are saying, I'll hold off seeing the dentist again. We want to catch any cavity as small as possible. Those cavities, it's a slow erosion of the tooth, if it's a healthy tooth.

I've had a cavity in my mouth where the dentist told me over 50 years ago. You need to have a filling there. I didn't enjoy having fillings so I didn't have it done but I kept it clean. I tried to eat a reasonable diet, most of the time. I've never had a filling there for 50 years. It's a slow process.

Sometimes a dentist will go, "Well, I want to watch this to see if it is getting worse" and then the next time they you go, "It's gotten to the point wherein my judgment it needs to have something. We don't want it to go too far." So seeing the dentist frequently helps the dentist leave things off a little bit longer or catch things at a much smaller level so you don't need to have that root canal and those crowns and that type of things. It's very important.

DM: So some really good principles that we can abide and really keeping the sugar out of the diet is a really crucial component.

DO: I love sugar but...

DM: The dental health is really such a powerful illustration of the rest of our body. Weston Price an interesting guy who was a dentist. He went around from I think 1920 to 1930 to different areas of the world and really looked at people's dental components. But he could have easily looked at their arthritis or their bone structure but he happened to focus on that. It was a really good parameter to follow to see how dramatically people's health change once they incorporate Western type diets which were loaded with processed foods and sugars.

DO: It is huge. I grew up in Africa. I went back recently.

DM: Were your parents missionaries?

DO: Yes there were. I was over there. If you look at the different races, you'll see...or people's smiles, you'll see how they have this narrow smile. Of course mine, I've tried to widen a little bit but the dark corners between the teeth and the lips or then you'll have a person -- especially people that are African-Americans will have very wide smiles, wider nose, big airway, big smiles and that all gets better airway for them.

This is a huge problem with the Western diet and the allergies that we have, the child developing not breathing well. So their tongue get into the wrong position, their tongue doesn't expand that mouth properly. When the mouth doesn't expand properly, then they not only...

The nose is like a triangle. So if you have a narrow mouth, then you have a narrow nose and if you can widen that mouth on out, all of a sudden you've just made a huge difference in the amount of air that a person can get. The dentist is responsible for insuring that that lower third of the face, develops properly so the patient has great airway.

Allergies are a huge component, the child not being able to breathe well. They get congestion in the nose. The tongue goes in the wrong position, it doesn't open up the mouth during development properly and then we have the braces problems which there is a tendency to pull teeth instead of expanding it.

Weston Price has been highly criticized although at the time, he was an eminent scholar, he's been criticized recently by my profession or when I was in school and afterwards because in some areas, he went perhaps to an extreme. What's so fascinating is that with time, those areas that he was so extreme on we've slowly gotten, "I guess he was right there." And, "Ooops, I think he was right there."

There is very few places now where he was so radical where we're now saying, we still haven't proven whether that's right or wrong yet. We've had to back pedal a lot on our criticisms of Weston Price.

DM: That's sort of an illustration of Schopenhauer's commentary on truth. Most all truths go through three stages, once that it's rejected or disbelieved then it's violently opposed and then it's widely accepted as fact. Sometimes it takes a little longer than others.

DO: It does.

DM: It's not just true for health. It's really true for most things.

DO: I was fascinated. I don't have the answer for what about our Western civilization is causing this allergy airway problem where the development of the mouth and the crowded teeth are there.

My son-in-law just saw a lady from Kenya where I grew up. I said, "How are her wisdom teeth?" He looked at me and said, "She could have had extra teeth back there." There is just all this mouth for the teeth to fit in so nicely. There were no problems for fitting the wisdom teeth. We take out wisdom teeth routinely in the United States because they just don't fit.

DM: Isn't that the exception rather than the rule where they don't have their wisdom teeth? I've got all four removed. It wasn't that firm.

DO: It is the exception. Why is our mouth not developing more? Why are we developing too fast? Something is happening with our Western diet, Western civilization, pollution whatever it is that's causing this.

DM: This could probably contribute to sleep apnea for some too I would imagine because it would decrease airway size.

DO: It's huge. We're getting a little off the subject of cleaning but this is extremely important. This is how I got into my fluoride concerns was first with the occlusion, the bite. How should the bite fit together? That is a huge problem in dentistry. Because what is being taught in the universities and has been taught is causing migraines, headaches, muscle fatigue. It's causing our problems.

The orthodontics braces, generally don't do -- statistically, they don't make a difference because we're not improving the problem. The position that is taught in school is a muscle uptight, a synarthrodial position for the jaw joint which creates muscle tension. Once you have muscle tension, then the blood starts flowing there and then you get more vascular tension. When you get more vascular tension then the body calls for more blood, things get more and more, the body is trying to correct this thing at night. We have headaches, migraines, all kinds of problems with the head.

Most pain is a muscle pain. Muscles of the head are the dentist's responsibility to take care of and make sure that they're calm. That all starts right back there with that airway and the allergy problems for the child getting that tongue in the right position.

When a person swallows, their teeth should lightly touch with the swallow. The tongue should be full in the top of the mouth. So every time they're swallowing, the teeth will be pushed out just a little bit. The lips pull the teeth in a little bit. The tongue pushes it out. So the teeth generally float in between these forces - the forces of the outside and the forces of the inside.

If a child has a tongue thrust problem, constantly pushing their tongue on out, then what we got is often the teeth will flare on out and they'll be narrow because the tongue is a tongue thruster. Sometimes it will be thrusting to the sides.

I remember my daughter Evie, she was about 12. I just could not get her to sit with her mouth -- her lips around her teeth and breathe. She was always sitting like this. I remember we were at a program and my dad nudged me and he said, "Can't you get Evie to hold her lips together?" I looked at her and she looked like she was mentally incompetent. I said, "Evie, you look like a dufus sitting there with your mouth open. Get your lips together."

She would sit with a posture that was like this. Well, you know, if you sit up when your head is like that, you're in more of a CPR position. You're trying to get air. The whole time I was telling her to get her mouth closed, she had it opened so she could breathe.

Air is fairly important. You got to breathe. Her dentist had not developed her airway properly and I was trying to get her lips together.

The same thing with a pacifier, as a person gets older and you can't get the pacifier off her. You can't get the thumb out of the mouth. Something between the teeth feels better. Unless we can get the teeth into the right position, they're going to want to have something in there. Whether it's a cigarette, whether it's a thumb, whether it's a chewing gum, it is going to be something that wants to get in the mouth because the teeth coming together put the muscles into an uptight position.

There is a war happening between the nerves and the muscles trying to pull the jaw forward to protect the joints. And the teeth coming together pushing the jaw back into that synarthrodial position that we're all taught in dental school. So that war creates the muscle tension in our heads which does headaches. About a third of children have headaches. Over half of men do and about three quarters of women have headaches. It's a number one healthcare concern. Unfortunately, we dentists are responsible for that.

DM: That's interesting. I didn't realize that a dentist could have some influence on opening the child's mouth. I definitely would like to expand on that. I was under the impression it was really more related to the diet and the genetics. So if you can comment on that and then progress into I would imagine there is not much you can do as an adult once all the bones have settled but maybe there is.

DO: Well there is, absolutely, there is.

DM: Why don't we expand on this? It sounds like an interesting topic.

DO: What we say we can't do, we got to watch out because somebody is doing it. We can get these bones but they are harder to work with and slower to work with.

Number one, as far as patients are concerned, I used to take out a lot of bicuspid teeth for braces because the teeth were all jammed in and crowded. That is a no-no. I don't do that anymore. We want to expand that airway because the tongue -- there was an old Chinaman who used to say, "A garage must be big enough for a Cadillac." I thought, "What is he talking...?" and the light bulb went on.

The tongue is like the Cadillac and you have to have the mouth inside big enough for that tongue to fit properly. So you have the opening, the height needs to be big enough. You need to have the width big enough and you need to have the front coming up forward big enough.

Obviously if you have huge tonsils in the back or adenoids in the back, this is going to plug off the airway. But we can't take the jaw and shove the jaw back because that's going to take the tongue back with it and close off the airway - sleep apnea. So we need

to have the maxilla, the top teeth out far enough forward so that the bottom of teeth can come out forward so that the profile is straighter.

We don't want to take in and pull out teeth and bring things back and then say, "Now my teeth are way back. My chin is too big. My nose is too big. So I'm going to get my chin cut back, my nose cut back because..." It's a nice profile if we just get the top teeth out far enough and the bottom teeth out far enough because when we have developed our teeth didn't develop in the right position because of the airway.

So sleep apnea...dentists, what we do for sleep apnea is we'll help with an appliance to hold the jaw forward at night so it doesn't fall back. That is actually accepted better than the CPAP machines.

DM: I would say from my experience the vast majority perhaps over 90-95 percent of people are using the CPAP as opposed to this approach.

DO: Right because that's how the people who are doing the sleep studies get their money. They make it by doing a CPAP machine. The dentists make their money by doing an appliance in the mouth. Patients need to realize that their doctors are influenced by their income. You come to me I have a toolbox. I'm going to use what fits in my toolbox and what I have the tools for.

So I don't do a CPAP because I'm not qualified for that, trained for that. I do a sleep appliance. The physicians will say, well, we have great success with the CPAP machine because 46% or whatever it is of patients will use their CPAP machine for over four hours a night. That's considered success. Whereas in dentistry while we say, we have great success because we have 85% and they will wear it for most of the night. Well, neither way is good. We'd like to have this mouth develop into the right position and then I'll have to use all the hardware afterwards.

DM: So how do you do that for a child? Is that the solution to identify this problem early on and implement an intervention to change it?

DO: Absolutely. And then if you don't catch it when they're very young, to catch it later when they're doing the braces to not take out the bicuspids, to expand the arch, to expand the airway, allow the jaw to come forward so that condyles develop properly, holding the jaw forward, the tongue forward, so that they can get that air.

But when they're very young, our number one concern is the allergies. If a child is plugged in their nose and they're sitting there with their mouth open as a child baby. I really think the parents need to find out what's causing the allergy for this child. Is it the milk? Is it the wheat? Is it the carpet? Is it the pet hair? I don't know what it is but each person is different. You are the expert more than I am on these allergy type problems. But they are huge for us in our Western culture.

DM: One of the most important components is if there is an allergy going to aggressively address that ideally with a holistic perspective. There is a number of ways that you can do that that are really outside of the scope of this discussion.

DO: I know. One very big point, we don't want to throw pills at it because if you go to a traditional physician...

DM: Yeah, that is not the solution. Thanks for emphasizing that.

DO: No it's not the solution.

DM: Most of the viewers know that it's not our position. We just don't recommend drugs. Unless it's a really important symptomatic band aid.

DO: Right. And perhaps short term but we got to be very careful to just rely on this thing. But air is important. The body will fight and do anything it can to get air. So it will breath through the mouth, it will breath through the nose, it will get the tongue out of the way, it will do whatever it can to get that air. There are adults who suck their thumbs. That's not common but it happens. That's because something between the teeth feels better.

In the dental textbooks, when a patient comes in and says, "Doctor, something between my teeth feels better." That is a monosymptomatic hypochondriacal psychosis. In other words, the patient screwed up. Because a dentist looked at their teeth and the dentist knows, the doctor knows best and the doctor says, "Your teeth are just fine." The patient is wrong. You know with time I've learned that my patients are usually right.

DM: The wisdom of experience. That is a really good principle too. Unfortunately, there is a tendency for arrogance to exist in many of the professions and really to the disadvantage of many people. Hopefully with maturity and wisdom that tends to disappear.

DO: We give the best information we have today. I think the illustration that means so much to me was my mentor-coach father-in-law. He was a cardiovascular surgeon. He said, "Bill, always remember that..." this was when I was in dental school, "You have to learn 80% of everything they teach you in school." I thought, "Well, okay. I think I could do that." He said, "but remember 50% of wrong. We just don't know which 50%."

I thought, "Well, yeah that's what you're saying because you graduated from medical school back in 1958." Of course that was a first aid course back then. Now, we have antibiotics. We know so much better.

But you know, 90% of the dental materials I was taught with in school, they're historic. I don't use them anymore. Much of the procedures that I was taught are wrong. We've gone on. We've progressed. Am I so arrogant to say that today, we have all the answers? No. We're searching still.

DM: Your father-in-law's commentary was based that most likely it was rooted in traditional medicine. So when you expand your horizons out to the global broader perspective of natural health, you realize that it far exceeds 90%. It goes back to the ancient days when we're really seeking to emulate many of the practices that our ancient ancestors followed to really achieve health as we really did with Weston Price.

Are there any other therapies or interventions that you would advice for a child who has this obstruction or this less than optimal airway space other than addressing the allergies?

DO: The allergies would be my number one. We want to make sure that they're not having the colds and the flues and some thing is causing it - their airway. Airway is most of important. Diet is very important, not to eat sticky foods and the brushing and the flossing. Those are the main areas.

DM: So that will actually open the airway. Just by changing the diet and proper dental hygiene.

DO: Yes, because the tongue is that force in the inside that's going to develop the mouth. If you can get the child to be able to breath through their nose comfortably, then it will develop. Speech therapists will also work with a child -- those that are real good in this type of area -- in learning how to swallow so the child can learn how to swallow. Sometimes the lips will be very weak. They'll exercise the lips to get them a little stronger to get over the teeth.

Once the allergies are taken care off, the habits can be there to continually mouth breath. So we have to make sure that they can breath through their nose easily and that they do breath through their nose by correcting that habit of mouth breathing.

You'll see many times where people as they're older, their chin will be like there is no chin. Their chin will be way back. Their jaw would be way back. You can go up to that person and say, "How are your migraines doing these days?" Just at the airport, you can do that because you know that they have muscle tension, muscle head problems. Their mouth is not developing to that good position.

In the past, a lot of times, we would break the jaw and bring it forward. That's not necessary almost never. We know how to correct that now with developing it with growth even in adults.

DM: As an adult, as many people suffer with these challenges, are there any recommendations or guidelines that you could provide to find a dentist who would understand how to prescribe or recommend one of these sleep appliances. I'm sure like most professions, and dentistry is no exception to that, that there is a wide range of skill that the clinicians and some dentists probably don't even recognize as an issue.

DO: It is not really difficult to do the sleep appliances. A dentist needs to have some training on it but very little is necessary because most of the procedures that we do for the sleep appliance most dentists would know so I'm not real concerned. I would look for a dentist who has had some neuromuscular training. I think that's very important. They can get that position better for you. A dentist who maybe mentions it to their patient or asking your dentists saying, do you do sleep appliances? How many have you done? What do you think about them?

Another thing is insurance payments which is a different thing. Insurance companies, some of them will help out on this but a lot of physicians will say, I don't contact my insurance about it because I don't want any record of me having had a disease because once I have the disease now I got to report it later on my insurance forms. They will just have us make the sleep appliance for them.

There are different kinds. The more expensive ones seem to be tolerated better than the cheaper ones. It's way it goes.

DM: Are there any physical therapy type of approaches? My training is an osteopathic physician so we have a skill called cranial sacral therapy or adjustment of the skull bones of course. And then of course there is chiropractors who do adjustments. I'm wondering what your experience with that is in addressing those type of issues.

DO: It's a new area in dentistry. Some dentists are into it very actively. I think it's important because craniosacral can adjust the head tremendously which then completely changes the occlusion and the bite. So that we frequently would work with a craniosacral specialist to help us with the bite and getting things correct. I don't know at what age that started. So as a child, I would work with the allergy things first.

A child by the age of five should not have large tonsils. If the tonsils are still large by the age of five then my recommendation is to see the osteopathic physician, to see the naturopathic physician, to see the allergist, to see somebody to try to get those allergies under control to get those tonsils down.

If the tonsils don't go down then I would recommend that the tonsils be removed. It's not a choice I like but it's something that we have to have air. If we can't get it down in any other way, then as a last resort, the tonsil being taken out. That is an absolute indication that the lower third of the face is not developing properly because of airway problems. We've got to get that child air.

DM: There are other indications to take it out too. There are sort of the pendulum have swung too far in one direction and initially all of the tonsils will be taken out. It was unusual not to. In fact, in my family I was the only -- I had two siblings initially -- two sisters and those were both removed but mine wasn't which is unusual at that time.

And then now we've come back, the pendulum swung the other way like no one wants to remove them but there are indications like this mechanical obstruction and also if

they can be chronically infected and serve as a source of infection that can really challenge the body.

DO: But physicians don't like taking them out because they're not comfortable for the patient. They're messy and they are not lucrative. If the tonsil needs to be taken out because they're too big because of airway -- if a child is snoring at night. Children shouldn't snore. We need to get them air.

DM: You mentioned a number of important interventions for improving the child's airway and one of them was dental hygiene. Of course it's important for other reasons aside from that but I think it's really crucial to understand how to do this properly. You've been doing this for more than three decades and you've got a lot of experience with this. Why don't you help us understand your perspective on how to do this properly?

DO: Let me give a story first. I worked up in Canada for a few years. There was a home for mentally handicapped young people under the age of 25. They kind of take care of themselves but they needed a lot of help.

As one of the dentists in town, I saw a fair amount of them. Every time they came in their gums were bleeding. They had a fair amount of decay, not real bad but the gums were just terrible. Lots of periodontal problems, very inflamed, lots of goop and junk and garbage on their teeth from days they weren't brushing their teeth. They weren't flossing their teeth.

I told the administrator, I said, "It's legally our responsibility to ensure that they don't have this health problem." He said, "What do we do?" I said, "Let me do an experiment." So I contacted the Canadian government who actually I have a good respect for. I said, "I want to have these children come in once a week for me to do professional cleaning. I will charge \$5 for each child."

I had all my assistants. I had all my chairs. I had everything and that's all we did. We just rolled them in and cleaned their teeth and sent them on out. We were so fast and so good at what we were doing and we cleaned their teeth. After about three months, I contacted the government I said, it's not working. I'm not seeing one slight improvement. Every week we clean their teeth once a week...

DM: Why were you doing this?

DO: To try to get better health.

DM: Gum health.

DO: Yeah, so they had better gum health. Their gums were just as bad, just as inflamed, just as much of a problem when we cleaned their teeth professionally once a week. Several things from this story; number one, if you go to the dentist every week and have your teeth cleaned, it's not going to help. Sorry, maybe the calculus coming

off is going to help but professionally, getting the plaque off, the soft gooey stuff off once a week, it's not going to improve things. You would have to go in there more often.

So what I did is I contacted the administrator of this home and I said, "It's not working. Let's hire a high school girl to come on down there after school and brush and floss everyone's teeth." In a week, we had great results. The gums were looking better. Things were clearing up. I mean, it was night and day difference with just somebody doing a little brushing and flossing compared to what we were doing professionally in the dental office at once a week.

So a daily brushing and flossing, a daily wiping of that tooth somehow with whatever you want to wipe it is extremely important which gets into what do I wipe it with? What do I clean it with? I use an illustration of a car. If you had a car and it was dirty and somebody blindfolded you and they started asking you questions about, I understand you're going to go down to Florida for a vacation and warm up down there. That sounds like it's going to be really nice and you say, "What part of Florida?"

So you're talking to me about how you're going to go to your vacation and go for a trip and you're not thinking about what you're doing as you're washing the car and I said, "By the way, you have three minutes to wash your car." So you're in a hurry. You're not thinking about what you're doing and you can't see what you're doing. What are the chances of you getting your car really clean?

DM: Not very high.

DO: Not very high. The same thing on our mouths. We have about 128 different places in our mouth that we need to clean, on the surfaces of these teeth. We get some toothpaste in there and it gets all foamy. It feels minty. And then our mouth fills up with foam and so we spit it out and we rinse it out and it feels clean. Chemically, it feels clean. Does that mean that it's clean? No. It's the mechanical rubbing gently not hard the gently rubbing, the accuracy. So you have to think about what you're doing. Where do I brush my teeth?

DM: Before we progress to that too, to emphasize one point, you said it's not hard because I'm sort of an obsessive compulsive anal type of guy when I brush my teeth in the past, I brush them real hard because I thought, I want to get all that plaque and bacteria out, as a result, I actually had gum recession. There probably are some other factors for gum recession but at least that's what the dentist told me. So there is this happy medium, the Goldilocks approach where you really need to get enough but not too much.

DO: You're absolutely right. Historically we told patients because it's easier for the doctor to blame the patient than the doctor is to say well maybe it's my problem rather than my patient's problem. We told the patient that they were wearing their teeth scrubbing too hard.

DM: So teeth and the gums.

DO: Right. Now what we understand is that the forces on the teeth are improper and that's causing the bone recession and the gum recession to a big extent and the grooves and the abfractions. If you had a post in the ground, a fence post, and you wiggled it back and forth or had a lot of strain and stress on it, the stresses come out right above where it's supported at the ground level. That's where it's going to get its abfractions. It's going to wear and if you push hard enough, that's probably where it's going to break.

That's the same thing with the tooth. You get there and you start wiggling that tooth back and forth a whole bunch. The structural strength of those crystals breaks down right at the gum line and that's where we can get the abfractions. It's true it begins to break down a little bit there then I get in and scrub hard on it and it just compounds up.

So it's a combination of both factors. But we don't want to have too hard of it. Now, what is too hard? If you're a 90-year-old grandma like my mom, she's just not too hard on anything. She could use a steel brush probably and still -- well, I wouldn't want her to. She could use a hard brush and not be a problem.

Children, they can sometimes really brush hard. It's not the hard brushing that does it, it's the accurate brushing that does it. So thinking about where we are in our mouths and on the cheek side. I have a little model here. What I like to do is I start with a very tiny amount of toothpaste.

You're coming out with a toothpaste now, Dr. Mercola's toothpaste. I tried it and I really like it but using a small amount, you don't have to use a lot and if you use a fluoridated toothpaste, don't do it. Let me give you some simple little things on it. They have taken 10 parts per million of fluoride and put a drop of it -- the fluoride on the tongue of a mouse and the mouse has attention deficit problems. That's 1% as strong as toothpaste.

So the toothpaste with fluoride -- yours doesn't have the fluoride in it which is wonderful -- they say just a pea size amount. If you're going to use fluoridated toothpaste which don't do it, but if you do, just use a pea size and make sure you don't swallow it. We'll talk about it more later on that.

But starting on the very back, and on one side -- I tend to start on the right hand side all the time. So break the habit. Start on the left hand side. Start somewhere different so that all that toothpaste and all that -- most brushing is in a different location. Start on the bottom. Start on the tongue side. Start somewhere else so that you're rotating what you're doing and getting different areas -- brushing along the side of the tooth.

In school they said, don't do too much back and forth, what we you to do is up and down. That motion is a lot harder for me to do, an up and a down. I just don't stick with it long enough. That's good. It helps in between the teeth.

And then in my sophomore year, they said, well actually it's not getting well in between the teeth well enough. If you go in circles, it's a little bit better. That's a little bit better. So we brush in circles a little bit because then you're getting the back and forth down next to the sulcus and you're getting in between the teeth and you're just in a happy world. But round motions are still not all that easy for me.

In reality, you need to floss regardless. So whatever is comfortable for you, whatever the child does. You can do circles. You can do up and down. You can do back and forth. I don't care what you do just wiggle. You're going to hold your toothbrush in there and wiggle your head. Just somehow get it so there's wiggling in there.

I like to go a back and forth or maybe up and down a little bit whatever motion you want to do. But count to about 10 and then move to the next spot maybe in the front teeth and then count to about 10. And then on the other side, count to about 10. Then you want to start underneath, 1, 2, on the chewing side 3, 4, 5, 6, 7...it takes time and then the roof of the mouth side.

So when you have a child, what I like to do with a child is to have them brush their teeth themselves. They've got to learn that sooner or later. With a child, what we want to do is make sure that they don't swallow their toothpaste. Another little story...

DM: Before you go to this other story, just to emphasize the importance of this, it's actually this wiggle because my confusion was that it had to be one specifically type of stroke. It actually appears to be the wiggle action that's the most important.

Can you just give us a general guideline as to about how long it takes to cover all these surfaces you just reviewed? You're not going to be able to do it under a minute. If we have a timer, that might be another good way as adults so that we can say, listen I'm only spending half the time or a quarter of the time I need to. I got to spend more time doing this. What's the timeframe?

DO: If you say 10 seconds in each area, you're spending about 30 seconds in this area and 30 seconds in this area, you haven't done this front yet and then you do 30 seconds on the bottom so you got 2 minutes just getting the back teeth brushed plus the front teeth. So 2-1/2 to 3 minutes I think is a good amount of time of gently rubbing on the teeth. That's too long for me. I don't have time for that. I'm too busy to do that kind of thing.

DM: Are you being facetious?

DO: I'm facetious and I'm being serious. How many people are going to sit and look at themselves...maybe some women will but how many men are going to sit and look at themselves in the mirror with toothpaste drooling down their face for three minutes? It's just not going to happen.

DM: But it may be one of the single most important things you do probably more important than flossing.

DO: Flossing, I think is even more important than the brushing but I agree with you it is very important. So we got to figure out some other way to do this thing. What I do is I sit down, while I'm sitting in my easy chair watching TV, you don't need to have the water, you're swallowing those bugs all the time anyway. I brush my teeth while I'm watching some TV.

DM: And you're using non-fluoridated toothpaste?

DO: Big difference, yes. And then maybe when I'm in the shower. I love hot showers to just warm my body. That's when I start to think and everything. I have a toothbrush in my shower. I'll sit there and I'll be scrubbing my teeth and brushing my teeth. Sometimes I carry it in my briefcase I'll brush my teeth and other places.

You don't have to use toothpaste. I like toothpaste. I think it helps. I think it can break up the bacteria pellicles, the little soft plaques in there and it can help kill some of the bacteria sometimes. I like toothpaste but you don't have to use toothpaste. It's that mechanical rubbing that actually does the breaking up of the bacteria and pulling it off. I hate to admit it. I don't look at myself for 3 minutes in the bathroom, in the sink brushing.

DM: But you could. If people who want to do that it would probably be a wise idea at least to start the habit to get themselves a timer and see that they're doing it 3 minutes.

DO: That would be wonderful.

DM: Because I think most people viewing this are not doing 3 minutes.

DO: An hour glass to flip it on over, 3 minute little egg timer. Those kinds of things are wonderful. They should be done - counting. Whatever you're going to do but it's going to take a lot more time than what most people do. I'll be honest, I do look at the mirror for three minutes sometimes while I'm brushing but it's not my first choice.

DM: So it's nice to know you can use it -- there are other strategies that you can do to do that.

DO: Absolutely.

DM: Of course twice a day. One of the challenges and health problems I've had and we had a discussion prior to this is that I have had plaque my whole life. Even though I see the dentist not once every six months, not one three months, every two months, it still builds up. I want to be implementing some of these strategies. I normally brush twice a day but I'm going to try three times a day and try the three minute rule and see if that has a difference on my next cleaning.

DO: Spending a little more time.

The next area that's really difficult to clean, the back teeth. Remember the tongue has ownership in the mouth. It's going to own that space. If you take your toothbrush, we'll pretend that these are the bottom teeth, if you take your toothbrush and go down in here and try to squeeze that tongue out of the way, it's not going to like you. It's going to just reflexively push that toothbrush out of the way.

Although I don't get much decay down there, we do get periodontal disease and gum disease down there and we develop that tartar calculus down there. That's an area that we have to think about getting that tongue moved out of the way.

The other areas down next to the tongue right where these saliva glands just tend to pump out all that saliva and get that tartar calculus built up. They make a little tufted toothbrush that just has a little tuft on the end of it. That can sometimes help down there or just taking a short knife and cutting off the toothbrush so you have just a few bristles that fit on down there. That can help reach down in there and get right down next to the tongue so that it's very gentle but very accurate in the cleaning.

The calculus in a few hours will build up but it's soft enough that most brushing will take it off but some people, it builds up more. What we talk about is plaque is the soft gooey bacteria and they're waste products which have a lot of acids in them. The hard stuff is called the calculus. That calculus is what the dentist -- they take off the plaque too or the hygienist will take off the teeth. That makes the tooth smooth. The calculus tartar does not cause the damage it just has good housing for the bacteria. That's what I call it housing or little areas that make it difficult to clean. We want to get the tooth smooth. That's a key factor.

DM: Are there any guidelines on the toothbrush with respect to the design, the strength, the hardness of the bristles and the frequency at which you replace the toothbrush?

DO: There is a tendency for the toothbrush to be pushed too hard under the teeth. So the softer the toothbrush the better unless you're like my mother who is 90 years old, she could use a hard brush. The soft brush tends to be easier on the gums and on the teeth. I would recommend that. As to the kind of bristles...

DM: Soft bristles.

DO: Soft. The manufacturer is going to be different on them.

DM: How frequently should you replace your toothbrush? What guidelines do you use? I'm sure it's not a timeframe but it's a function.

DO: About every two to three months would be good. Once it starts to fray on out then it's going to be less effective. A lot of dentists will have two or three toothbrushes that they rotate. It allows the toothbrush to dry out, the bacteria to dry off.

DM: Can you clean them? Do you recommend cleaning them?

DO: Afterwards, I rinse them really well.

DM: Rinse them well but would you recommend disinfecting it like putting in some peroxide?

DO: I would use your own toothbrush but those bugs are in your mouth all the time. I don't think it's necessary. It's not going to hurt to disinfect it but I don't know that it's necessary to do it.

Dental flossing -- I'll talk a little bit about dental flossing. Your cheek does a certain amount of rubbing along the side. Your tongue does a certain amount of rubbing on the tongue side. Nothing gets in between the teeth unless it's some food. So the bacteria love being in between the teeth. Those smooth surface areas in between the teeth tend to be a place where I do lots of fillings.

That's a real problem because it's harder to see it. That's where we take x-rays. A lot of times just to see in between the teeth how well is a person dental flossing. Toothbrush just doesn't get there. Use a long enough piece of floss. I don't have one here that's a nice long piece of floss. I look in my case, it's in the hotel room. Wrap it around a finger on each hand so that you have just a short piece there, using one finger.

If you try to hold a tiny piece of floss it's going to be too hard to hold it. So wrap it around each finger and going in between the teeth. Now a toothbrush we're brushing several times, just going snap in snap out is probably so much better than nothing but it's not good enough. We need to wrap around the tooth and scrub it just a little bit and then wrap around the front tooth and scrub it just a little bit, up and down, back and forth. If you have spaces between your teeth, there is some nice dental floss that furry, fuzzy. You can slide that between them.

DM: Super Floss isn't it?

DO: Yeah, Super Floss. You can slide that between and it will help work things out. Getting underneath bridges, getting around implants, a lot of these areas need to be cleaned very carefully.

DM: You'll remove the bacteria which are the precursors of the plaque. I'm wondering by doing this type of cleaning if you will actually influence the populations on the other easier surfaces to clean with a toothbrush.

DO: Of course.

DM: That makes a difference because if they hang out there, these bacteria populations they have a relatively short doubling time. So you can get large numbers that will contaminate the areas that you can clean very carefully with your three minute process.

DO: Bugs, bacteria they are a real problem. The way we get them, the first time we get them infected. It was probably from our siblings, from our mother, from our father. Children at school coughing on each other, eating off each others utensils and stuff.

There are some specialists who if a man comes in and he has periodontal disease say, I want to see your wife or at least all the people you're kissing because we got to make sure that you're not spreading these same problem bacteria back and forth around to each other. That is a key factor.

We will not sterilize the mouth. It's a dirty environment. We want to reduce the amount of the bacterium. I don't mind some of the good bacteria because it will help control some of the bad bacteria but I want to get rid of their waste product.

I'm a slow learner and when I was in dental school, there is this dental hygiene student that came in and said, I want to talk to you about how to talk to two year olds and three year olds and little children, I thought, I got better things to do than this. I didn't have any children on my own. I wanted to get out of there. Talking to a three year old, you just say, "Mom, brush this kid's teeth."

She came out with this big long fuzzy furry little caterpillar and she said, "Children, this is our little germy-wormies." To make a long story short, these germy-wormies, they build houses. I thought, "I like construction." That's cool because that's exactly what it is. That hard tartar stuff is like calculus. In the microscope, it's little caverns caves where the bacteria can live in there. That's why we take it on out so the bacteria can't be there as easily.

She said, these little germy-wormies have babies on our mouths. Multiplying and reproducing was just fine but the birthing process in my mouth was not exactly where I wanted it. I remember, afterwards, it's so embarrassing. I remember going like this, wiping my teeth off on my shirt and then thinking, I wonder if anybody saw me do that. Because I didn't want to have all these babies all over my mouth, I mean, it was a problem.

And then she said, but the worst thing Bill is these germy-wormies go potty in our mouth. All of a sudden, after three years of dental school, the light bulb finally went on in my head, bad breath, hello. Most of the time, it's manure from the bacteria that's giving us bad breath. There is sulfur problems and there is food that we've eaten and there are other types of problems.

But a lot of times, it's just the fact that we haven't been cleaning our teeth. We haven't been wiping out the plaque which is manure and we haven't been doing that. To some

of the little kids, I've been so rude as to when I looked in their mouths and there is no cleaning, I'll just take some off and I'll wipe it off and I'll take a big gunk and I'll say, here you see this is the bacteria and this is the little poopers that they've been doing. I wipe it on my gauze or I wipe it on my mirror and I'll say, "This is what's going on in there. Let me wipe in your tongue because that's what you've been eating." They'll reflexively go back, "I don't want that in my mouth." I said, "That's why you brush your teeth. You don't want it in your mouth."

That is the real problem. It's high in acids. If you looked at a baby...I have a grandson. Occasionally, he's gotten diaper rash. What is that? That's his own acids irritating his own skin. Okay, if you have acids, manure in your mouth, it's going to irritate your own skin. That's the same thing as periodontal disease basically. It's just this acids, the waste product of this bacteria. It's diaper rash of the mouth. There's nothing big about it we just to get these things out of there, get the waste product on out so that it's not sitting there. The more we eat the sugars, it feeds those bacteria. The sticky foods it feeds the bacteria.

When a person has better oral health, they have better socioeconomics or maybe it's that wealthier people have better oral health because they have learned to take care of themselves or whatever it is. If you want to pretend that you're wealthy, you're going to clean your teeth well. If you want to have a reduction of the bacteria going into your body which it does get into your body from the gums and cause problems with our heart and other areas of our body. You're going to want to keep that clean and not have the bleeding gums.

A big sign of a problem in your mouth is if your gums bleed. You floss your teeth and you go in there and you act like it's a saw and you cut yourself, that's not it. If you go in and you brush your teeth and you're brushing really hard, that's not it.

But occasionally I like to take a dry toothbrush and I'll just go around squeeze in between my teeth, chew, brush on it, reading a book whatever and I'll look at my toothbrush. Is it pink at all? Am I getting any bleeding out of there? When I get bleeding on my toothbrush or something like that. That's just panic for me as a dentist. Something is wrong in my mouth. I've got to get that under control. So I will floss more. I will be gentle. Usually within a day or two or three it clears on up and I'm okay again.

DM: It's usually a result of bacteria causing damage.

DO: It's a result of the bacteria and me not cleaning well enough.

DM: I'm wondering how would you frame these dental irrigators or water pick types of approaches. Are they ever a substitute for flossing or is it wise to use? What's your perspective on that?

DO: It's a really good point. I remember in dental school selling Water Picks to every dentist and dental student as much as must as they could trying to promote this as a

wonderful thing. The periodontist said, "I don't know of a single dentist who doesn't own a water pick. How many of you here are using it? Nobody raised their hands."

In order to have it effective you have to turn that thing up to warp 10 and have it squirting so hard that it can be irritating to the gums. It can be really tough on them. And then you're going to start getting some of the plaque off. But you still need to floss. You still need to brush. And if you're brushing and flossing properly, why are using a water pick?

Pretty soon we go, why am I doing this additional? Is it going to hurt? No. Is it going to help? Probably. Is it going to help in certain areas especially with people who have braces or appliances or those types of things? Absolutely.

If you really want to avoid the dentist and you have some periodontal problems, they developed a water pick that has a little needle on it. So that you can go down -- it's dull, it doesn't cut but you can go down and...

DM: It's rubber isn't it?

DO: Well it's metal but it's blunt. It has the canule off to the side so that you can take that irrigant of a mouthwash or baking soda salt whatever you're going to do, hydrogen peroxide diluted and you can pump that right down into the pocket. I have seen some wonderful results by getting the disinfectant down to the very deep pocket.

The same thing with the laser, we can disinfect it but again, daily cleaning with that can work miracles but not always. You have to really work with the hygienist and the dentist to try to get that under control and it can take a lot of time on the dentist's part and the patient's part. Some people can do it and some people don't have the coordination to do it. In general the fewer the gimmicks and the gadgets, the happier I am because I think it's a waste of money. How about an electric toothbrush?

DM: I have sort of discounted those for such a long time. I forgot about them. I normally don't advocate them but certainly we just need to hear your views on it.

DO: You don't own stock in them. If you are selling it like your toothbrush then you might be convinced more of it. I think you're absolutely right.

DM: Then you have the other issue. I mean, you will expand on the dental one but there is the other issue of the EMFs because you have a battery and you're holding it all the time. Another thing that is not necessarily ideal.

DO: Exactly. Here is my thing on the electric toothbrushes. I think that they're wonderful if a person is disabled. Supposed they can't move their hand very much and it's very difficult. Get that thing in there working and you can just be very gentle and it can vibrate for you. So you can wiggle your head, you can wiggle your hand but this will

improve things if you're not able to move your hand well. I'm very much in favor of the electric ones. They have now some of them that are ultrasonic.

DM: Right, this is like sonic here.

DO: That tends to break it down better than just the regular motorized one like the dental one. It does improve it. Again, I sell them at the dental office but I tell my patients, "You can do just as well without an electric toothbrush. You can do just as well without sonic if you are motivated and work with it."

I actually have one that was made by some engineers in Seattle. It's absolutely stunning. It's better than the sonic here and everything. You know \$150 is wonderful but it's just not worth it. I don't sell it to the patients because I just don't think it's worth the \$150. You can do just as well with other things but if you have one cool.

DM: I guess one of the reasons I hadn't used it or recommended it was that it could over do it because of the increased gingival abrasion and all that component.

DO: I think it can on some of them. But the ones that I have, the sonic here I think is fairly soft. Most of the newer ones are softening their bristles. They have to be replaced a little bit more but they're softening them because I think they were hearing your concern on that that you can overdo it.

DM: Are there any other little hints and tips that and advice that you can give us.

DO: Back to number one, ask your dentist to be your mirror. Say, "Tell me where I'm not cleaning." We hate to tell a patient, "Ewww, look at the germy wormy poopers in your mouth over here." We don't like doing that. If we see a little plaque we just kind of wipe it off and may something, may not say something, brush your teeth a little bit more comment but we don't say it a lot usually. But if we go in and we say, okay, look at my mouth and tell where I'm missing on my cleaning? That gives the dentist permission to tell you because you're wanting it.

DM: Or hygienist.

DO: Or hygienist, absolutely, or a dental assistant. A lot of dental assistants will spend more time and be excellent at doing that, or your wife or husband, they can look at your mouth too. Not as easily but they can do that. That's what best friends are for.

DM: Or if they tell you you have bad breath is probably another clue.

DO: Absolutely. If it's a frequent bad breath, I mean if they say, "You just had some garlic for lunch." Well, that's a different story. But if you're having some bad breath then I definitely would see the dentist. And your spouse is the best one. They get closer to you than anybody else.

DM: How long does it typically take to recover from that type -- is it typically a day or two, is it weeks...?

DO: It depends on how bad the problem is. It can take weeks. It can take just maybe a week or months depending on how bad the periodontal. If you have pus in your mouth, it's not going to smell good. It's not going to taste good. It's going into your blood stream, you don't want that.

DM: And the other tips?

DO: Boy, if you can just remember a few those that's great.

DM: That's the beauty of video, you could just hit the replay button or put it in your Outlook reminder and say, "Listen, I need to listen to this in two weeks to remind me" which is really there are some marvelous advances in technology that can really facilitate our ability to implement these healthy practices because really it's the things that we do day in and day out that are going add up.

DO: You know what you're doing for people in helping them get an education, it's impossible to go to dental school, medical school and nutritional schools and public health schools and all the rest of these things and get all these education and not end up with so much tuition that it just is impossible. What you're doing in giving the essence, the most important aspects of preventive health is worth a Doctoral degree in many areas. People need to be spending the time and carefully listening to what you're providing. It's key. It's better than going and getting a degree in many of these programs.

DM: Our mantra is to take control of your health which is why we're seeking to provide these resources, typically inexpensive, typically involving lifestyle changes that people can implement and then prevent the alternative which is running to the doctor for one of the thousands of different drugs that supposedly will treat their problem but of course it's just treating the symptoms and not treating the cause...

DO: Because the second is you can get another drug to take care of the side effects of the first drug.

DM: That's true. I really believe that most physicians are well intentioned that they are not knowledgeable conspirators in this process because they do the same thing for themselves and their families. They just got brainwashed by the whole system. Eventually, many of them do develop an epiphany. That's one of our goals too is to help them come to that understanding so they can really be our allies and help educate people to get away from the system but then what I also realized recently is that -- not so much for processes like this which is just simple common sense stuff that they would never be criticized for but for many of our interventions that we recommend they are -- if they make that recommendation they're really going to be violating the community standard and they expose themselves to risks in malpractice and medical reprimand so

that becomes an issue. So even though they may know better, you know there is this reluctance to implement some of these challenges because of the effectiveness of the marketing and really the comprehensive control that's been achieved by the pharmaceutical industry.

DO: That's very powerful in dentistry because we are a smaller group and there is a certain protocol that you follow and if you get outside of that, then your colleagues don't refer to you patients that they may say, I deal a lot with facial pain, with the problems of TMJ and the migraines and everything. When they hear that I'm opposed to fluoridation, well obviously he's a quack. They write it off so they don't refer patients. Most of the dental friends that I have, will say, "Bill, you know this is absolutely insane to be doing this fluoride." I quietly say to them, "Just know that quietly talk to your patients but don't stick your neck out on it because it will get chopped."

DM: They may lose their ability to perform a livelihood because the local dental board may actually remove their license.

DO: Absolutely.

DM: It really is it's not as right, it's a privilege. You really have to work within the system. That's one of the strategies and goals that we're working on together with other people to help that become less of an issue so that it is widely adopted and recognized with the truth is and that fluoride isn't good for your health and you really need to avoid it. There is virtually no indication for it at all. We'll review that in a little bit. It's definitely a process. Anything else before we wrap up.

DO: I don't think so. That's a wonderful start for oral health.

DM: Thank you for your kind words too. It really is only possible because we have access to people like yourself who really put in the decades of time, effort and energy, hundreds of thousands of dollars in education and years of -- decades literally to develop the understanding that you just taught. So take advantage of this. These are simple tools that you can use to take control of your health. I use Outlook. There are other email clients that you can use or other reminder systems but most of us are connected the computers and have email systems so put a link for this in your reminder system and look at this every two to four weeks at least every quarter if not every month to remind yourself of these principles. You're going to have to do that at least three, four, or five times before it becomes reflex and say, listen I got this thing down. I'm doing it and my oral health has improved dramatically which is going to have phenomenal impact on your biological health. I want to thank you for all your information and encourage you to do the steps to take control of your health.

DO: Absolutely, you can have good health.