Secure Your Best Health: The Role Of The Oral Microbiome Transcript

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Introduction to Oral Microbiome Health

Welcome to the Fasting and Longevity Summit. I'm your host, Dr. David Jockers. And today I am bringing on Danny Grannick. He's a CEO and co-founder of Bristle Health, a company redefining oral health and care through the oral microbiome.

You can check his website out at bristlehealth.com. We're going to talk all about the oral microbiome, what's happening in your mouth and how that's different.

And also similarities. Similarities and differences with the gut microbiome. And many people don't realize this, but oral diseases like cavities and gum disease are the most prevalent conditions on the planet, and they're largely preventable.

And they're also linked with chronic diseases like diabetes, cardiovascular disease and Alzheimer's. And so it's very important to understand what's happening in our mouth and what kind of bacterial balance and fungi are in there.

Because if we have the wrong balance that can drive up inflammation in our body and obviously increase our risk of chronic disease. And so if we want to live a long time.

We've got to take good care of our oral health. So in 2021, Bristle Health launched the oral health test, the world's first and only at home oral microbiome test to provide detailed information about the microbes, the different fungi and bacteria in our mouth that's associated with a variety of oral health conditions.

And based on the results, Bristle develops a tailored three-month treatment program that includes personalized diet, oral care products and hygiene recommendations to rebalance the oral microbiome.

And Danny earned his bachelor's in biochemistry at the University of San Diego before moving into a commercial career in genomics. And during that time, he worked with companies and researchers leveraging sequencing technologies in areas like oncology, NIPT and the gut microbiome.

Danny started bristle after realizing that the same technology could be applied in the dental space to shift today's reactive standard of care towards something personalized and preventative.

So really important topic. Got to understand what's happening in our mouth. And we want to have a healthy oral microbiome so we can keep inflammation under control and live a long, healthy life.

And so, without further ado, let's go into the interview. Well, Danny, great to connect with you here. Really, really excited about what you're doing with Bristle Health.

You know, as a natural health practitioner, I always talk about oral health. It's it's a big factor in, you know, really all chronic diseases. And so if somebody has really poor oral health, we know that their risk for chronic inflammatory conditions goes up.

And so it's something we've got to address.

How Bristle Tests the Oral Microbiome

But the actual measurement of it, you know, is obviously been not something that we've really had access to until you guys develop this and so really excited about what you're doing and share more about you know, the importance of the more oral microbiome for our audience here.

Yeah. So first of all, thanks for having us on. I totally agree. I think that from a health care standpoint, you know, oral health is this critical component of our overall health.

And I think from a patient and consumer standpoint, it's something that we tend to overlook a lot of the time. It kind of takes the secondary place when it comes to other parts of our health.

So to give a bit of background on Bristle, we we provide oral microbiome testing. And for the audience, the oral microbiome is the make up of bacteria, fungi and viruses.

And specifically, we look at those microbes in the context of your mouth. So we take a saliva sample and we identify and measure all of those different microbes and when we think about oral health, we tend to just think about cavities and gum disease and potentially conditions like bad breath or thrush, but we're finding more and more evidence that connects our oral health to our overall health.

So there are links between the severity and the presence of conditions like gum disease and a manifestation of systemic diseases like Alzheimer's, cardiovascular disease, diabetes.

And we're actually seeing a two way street. So if you have very severe gum disease, along with a host of other risk factors, you may be at high risk for more difficult to manage diabetes.

And if you have diabetes you're actually at higher risk for getting oral disease. Yeah, for sure. I know one marker that I look at on labs is high sensitivity C-reactive protein.

And so I've seen with a lot of different clients that you know, obviously we change our diet and lifestyle, we get them doing a lot of things to reduce inflammation and when it stays elevated, one of the big things that I started thinking about are oral infections and what's happening in that oral microbiome, because we know that that can definitely drive up those types of inflammatory biomarkers.

And so, you know, it's definitely again, like I said, something really important that we need to look at. And like you talked about, I mean, the link with chronic disease, there's a lot of a lot of research linking gingivitis, you know, disorders in the oral microbiome with all forms of chronic inflammatory conditions.

And it's kind of similar with the gut microbiome, right. There's a lot of research on that. And so let's talk about some of the kind of similarities and differences between what's happening with the oral microbiome and the gut microbiome.

Yeah, definitely. And I think your earlier point, you know, kind of a recurring theme that we find and I think it's important to keep in mind is that the mouth really is this gateway to the body.

So a lot of the things that are introduced and for lack of a better word, are growing in your mouth and kind of being produced as a result of those pathogens can make their way to other parts of your body and that's where we're finding a lot of those links.

So when we think about the oral microbiome and the gut microbiome and a lot of the pathogenic bacteria that can cause conditions like gum disease can basically travel down your digestive tract into your gut microbiome, and they can cause issues there as well.

And there's actually some cases where commensal bacteria is a bacteria that are largely beneficial to oral health, can actually become pathogenic in the context of the gut microbiome.

So there is a very delicate balance between our oral and our gut health, as well as the resulting conditions. You know, that stems from dysbiosis and the gut microbiome.

So IBS to IBD, Crohn's disease. Yeah, for sure. I mean, again, like I said, it's it's definitely a big factor and you know, normally we've got our stomach acid that should actually be killing anything that comes in from our mouth.

But a lot of times people's stomach acid is lower, especially as they're aging. And so therefore, bacteria that are coming in from the mouth can get down lower into the gut and actually impact the gut microbiome as well.

And there's there's a communication between what's happening in the mouth and what's happening in the gut as well. I think that's super important as well.

And so let's talk about, you know, what what you guys are learning because obviously you've been studying and analyzing the oral microbiome. And, you know, people who listen to my podcast have heard about the gut microbiome and we've talked about different bacteria like H.

Pylori, and we talk about parasites and, you know, we'll talk about histamine producing bacteria and things like that, but they really don't know some of the major players in the oral microbiome.

So I'm interested in some of the, the, the main ones that if people are looking at what's happening in their mouth, that they should be aware of. Definitely.

And I to go back to the very beginning, I mean, I think that the gut microbiome has had this explosion in research. And I think societal awareness over the last couple of years. But our knowledge of the oral microbiome actually extends back hundreds of years, and it's just taken a really long time for it to kind of come to the forefront of science.

There was a man named Antonie van Leeuwenhoek and I probably butchered the name, but he was basically the first microbiologist and he had been looking at different kinds of bacteria under them, using air quotes, a microscope, you know, hundreds of years ago.

And one of the first samples that he looked at was actually a scraping off one of the teeth of the plaque that was growing there. And that's when he he saw what he described as one of the first bacteria, so that the oral microbiome has played this very fundamental, foundational role in the progression of microbiology and our understanding of the microbiome.

Key Oral Bacteria and Diversity

And I think unlike the gut microbiome, it kind of just got stuck where we had a very narrow view of the bacteria that were present in the oral microbiome and their role in oral health and disease.

So traditionally we've only looked at 12 or 13 different species that were causally related to periodontal disease. And obviously with advances in technology, we're able to look at the comprehensive oral microbiome.

So when we think about the oral microbiome, it's, you know, over 700 bacterial species that had been associated with it. We have a whole host of fungi and viruses that we've really barely scratched the surface of understanding.

And when it comes to our test, we have the ability to detect all of these different microbes from a single sample, as well as make discoveries about new ones.

And because we're looking at it through the context of clinical data, self-reported consumer data on dietary habits, lifestyle choices, specific oral care products that people use, we can start to make these connections between the impact that our choices have on our oral health.

And we can also start to understand how different oral microbiome profiles play into systemic and overall health. Yeah, and. Yeah. And I think getting into some of the notorious, kind of infamous players in the oral microbiome there are, you know, I think some of the worst actors tend to be the ones that are related to periodontal disease and then are also very closely linked to the manifestation of systemic disease as well.

P Gingivalis is is probably the most infamous species out there. It is one of the key drivers of periodontal disease and it's also been linked to the progression and onset of Alzheimer's as cardiovascular disease.

And then we have a host of probably, you know, based on our current knowledge, two or three other really, really kind of bad keystone pathogenic bacteria ethnically ortom is 110 or more severe is another that we know play a really large role in driving periodontal disease and then have somewhat of a cascade effect, leading to two different systemic diseases and chronic systemic inflammation.

Mm hmm. Interesting. And also, you know, in the gut microbiome, one of the big you know, in a sense, the gut microbiome researchers have found that a greater amount of diversity, like a high diversity score, it's very beneficial overall for reducing all cause chronic inflammation.

But what I found out after I had my bristle test and you guys looked at my oral microbiome was my diversity was high in my mouth. And the analyst that was going over it with me, she said, you know, that's actually not good in the mouth.

Yeah. Yeah. It's an interesting you know, it's still an area that we're exploring a lot. We I totally agree. I mean, unlike the gut microbiome, where higher diversity is linked to improve gut health, we we tend to find a bit of a Goldilocks effect with the oral microbiome.

So too high diversity doesn't necessarily mean that you have poor oral health, but it is correlated with worse outcomes and we get into a lot of the relationships between different species that are present in your oral microbiome, their relative abundances, obviously too few bacteria can also be a really bad thing.

So we have cases of individuals that have less than ten. The species that we've been able to detect and put that in context. You know, on average we find somewhere between 70 and a hundred different bacterial species per sample.

So, you know, we have these cases of ultra low diversity and in a lot of those cases, the oral microbiome is just completely dominated by a single pathogenic bacteria that's that's really wreaking havoc on somebody's oral health.

So as of now, based on our understanding, you know, there is kind of this the sweet spot of oral microbiome diversity where you have a really good balance of commensal bacteria and there may be a couple of pathogenic species in there, but it's not enough to overpower at the community level the oral microbiome balance and really affect your oral health.

Yeah, it's really interesting actually. I want to take a moment and share my bristle scores here for those that are watching on video here. And so can you see my screen there? Yes.

So here is here are my my scores. And just, you know, a little bit about my history is fortunately, thank God, never had a cavity. You know I brush floss I will pull every single day and I did have braces for for several years when I was younger.

But I don't know how much that impacts the oral microbiome or how that plays a role in it. But yeah, every time I go to the dentist, which is usually once a year, get my teeth cleaned, maybe once or twice a year, they always say, Oh, my teeth look great.

So that's just my a little bit of my background. And yeah, we can go through some of these markers because I think this is really key. So people can understand more about how bristle works and kind of the the biomarkers you guys are looking at.

So, you know, we've got commence goals here and I'll let you I'll let you take it from there. Yeah. Yeah. So on the left hand side, we have basically all of your health related biomarkers.

We have tremendous tools which are largely going to be those beneficial bacteria contributing to good oral health, helping to maintain balance. And your diversity score we just touched on, but it is a relatively complex calculation, but essentially it tells you, you know, how many different kinds of how many different species did we detect?

What were their relative abundance? What is the spread across all of the different microbes in your oral microbiome nitrate reduction? So that score actually measures the capacity of your oral microbiome to reduce nitrate into nitric oxide.

Nitric oxide is a really important molecule for maintaining cardiovascular health, maintaining a good blood pressure status. And we find that people with low nitric or nitrate reduction scores in their oral microbiome have a lower capacity to perform that that transition from nitrate to nitric oxide.

And I was low there. I had a 2.3 out of ten which was marked as low. Exactly. And you'll see all of the specific bacteria that we detected.

Reading the Bristle Report and Scores

So the first ones we show you are the ones in the highest abundances for a given score. So you'll see two of the species there. And then we actually just added the different characteristics that you're seeing on the bottom.

These are some of the most important characteristics when it comes to intervening. So trying to either reduce the abundance of pathogenic bacteria, increase the abundance of pencils, and if we go up to one of the the kind of disease related scores, I know you'll start to see specific sensitivities.

But see, I got to get back to where I was. Yeah. So if you just scroll all the way to the top. So on the right hand side, we have all the disease related scores, halitosis, commonly known as bad breath, and there's a lot of different varieties of bad breath.

Obviously, you know, everybody at one point or another kind of wakes up with coffee breath. You just garlic or an onion or something like that. And that's one kind of halitosis.

But then there's, you know, the more chronic version which is really rooted in the oral microbiome and the bacteria growing there. And then we have the gum inflammation, those for related to periodontal disease and you'll see your score and you'll also see how you compared against your different sets of patient cohorts.

So we've performed a clinical research study with the University of Pacific Dental School, and we were obtaining samples of oral microbiome. And while we were generating oral microbiome data from two solidarity samples of patients, and we were correlating that against the electronic, dental and electronic health records, and that helped develop the algorithm in the biomarkers that you see here.

But you can see that we've normalized scores. But the idea is that patients who are in that study who were diagnosed by dentists as healthy, tended to have a score of around 3.3.

And then patients who were diagnosed with periodontal disease were at 6.6. Mm. So with this one I was high, I was at 8.2. So I had a, I have a higher propensity for gum inflammation.

Fortunately I do take good care of my oral health and that may be a big factor in me keeping it under control. Definitely. And then this breaks and it shows you exactly the bacteria.

So if you're not watching on video, listening to the podcast, it actually like I click on the link next to the gum inflammation. So they had me marked at 8.2 out of ten with.

So that's high. So it's high score for for gum inflammation. And I can actually look at the different species and what the what their individual scores are.

So this one here poor for I'm to this is some some of these guys. Okay I'm here. For Mona's and the tallis Indo Dan Tallis very high 9.5 score. Right.

So I can actually see which bacteria in particular if you're, you know, if you're, if you're really interested in what's

happening in the microbiome, you obviously get to see what bacteria are high.

And that helps you understand more about what's happening in your mouth. Exactly. And if you actually click on the bacteria, there usually will have some extra educational information in under the characteristics that we just added this feature.

But there are certain characteristics to different microbes that make them more susceptible to certain interventions or can help guide at home or in clinical care.

So if you click on maybe return sensitive that green circle next to the bacteria. Yeah. So you'll see a description. It's a lot of content. We're going to make it a little bit easier to navigate, but if you click on Return Sensitive, so the second kind of pulldown, so this bacteria is sensitive to a type of bacteria, which is a protein that's produced by other kinds of bacteria.

So commensal bacteria, which we had talked about earlier and certain kinds of these bacteria, those things have really effective properties that can help reduce the abundance of other pathogenic bacteria.

So you can almost imagine a war going on in your oral microbiome. And if you can increase the abundance of commensal bacteria that produce these bacterias, then it's a really good way to reduce the abundance of performance.

And then Alice and I kind of picture that one as well. Yeah, yeah, for sure. And it's interesting because this is really fascinating. And you know, if I was a especially if I was a dentist, I would really want to understand this better.

If I was a dental hygienist, I was working in that specific field. I would really want to understand what's happening with all these bacteria, the sensitivity, because we know antibiotic or I'm sorry, probiotics themselves secrete antibiotic substances and they compete, right, for for space, for food, things like that with other bacteria.

And, you know, lactobacillus root array is has been pretty well researched to help improve the oral microbiome. So this is kind of showing like this particular bacteria, you know, that we've been talking about the performance and odorless is a sensitive to that to that lactobacillus root array if you were to take that in there, have oral probiotics now or you can just kind of open the capsule or just take a little powder and put it in your mouth and swish it around to help reduce that.

Exactly. And the really exciting thing I think about the oral microbiome, that's a little bit more difficult with the gut microbiome. You know, our mouths are just so accessible and in that provides this really unique opportunity to use a combination of physical interventions.

So we think about things like brushing your teeth, oil point flossing, tongue scraping to physically remove these pathogenic bacteria and create the space that you need to introduce biologic or more therapeutic interventions like a probiotic.

And we see a lot of success. You know, neither one will necessarily be the most effective on its own. But the combination and being able to do both and really change the environment and our mouths has just had amazing results for our users.

Yeah, really fascinating. And and so on. My disease score my halitosis or bad breath was moderate my gum inflammation was high. 8.2 out of ten. My tooth decay was zero out of ten.

So I cleared out really well with that. And then my gut inflammation was a five out of ten so moderate. And for me I've had a history of irritable bowel.

When I get stressed, my gut is kind of like my weak, my weak link right starts to break down a bit. So this makes a lot of sense and there's a lot of links to between gum and gut inflammation.

Exactly. And a lot of links between gum inflammation and halitosis. So if you scroll down on our halitosis, we've actually been able to we've been able to identify and develop six buckets of halitosis.

Yeah. Here's our characterizing. The. Difference. Yeah. Yes. Right. So that's not only gut gum, inflammation, but also a marker for halitosis there, too.

Yeah. And you'll see in the section above. And so we we kind of characterize what's driving your halitosis.

Personalized Care Plans and Treatment Phases

And in your case, I think I noticed that it was primarily driven. If you just scroll up a little bit. Yeah, primarily driven by. So the gum inflammatory bacteria, those periodontal disease causing bacteria.

But we have been able to also identify, you know, there's certain kinds of halitosis that are really driven by fungi that grow in the service of becoming that are related to oral thrush.

We've seen other kinds of halitosis that are driven by pathogenic bacteria that are located in your gut. We have seen some cases of h. Pylori pop up. It's been really interesting for our team and we're continuing to kind of go down this path of more precise characterization of different oral conditions because, you know, as we see here, periodontal disease or cavities, it's not a it's an umbrella term for the resulting symptom of what's actually a multifactorial disease.

Yeah, yeah, for sure. And as you guys are getting more and more data, you're continually updating this database. So like the more samples you get because interesting.

Because you'll say like about 35.2% of bristle users share my my halitosis type. Right so I've got this elevation in my most prominent bacteria is just poor for performance and so dental is again a marker for gum inflammation as well as for halitosis when it's elevated.

And so no, actually, compare that to the other the other amount of users that have that score. So very interesting how you guys are able to kind of calculate all of this and kind of put all of this data together.

It's been a lot of work. The combination of, you know, I think we've we've been a team for a little over three and a half years now, which doesn't it doesn't seem like a long time in the grand scheme of things, but been around the clock work.

Absolutely. And so kind of going back up here, I was talking about how my gut inflammation was a five out of ten. Let's take a look at that one. And so commensal oops.

Where I. Right there. A major species there is the campylobacter. Yeah. So see show a very common and common bacteria that we detect that's related to get inflammation.

I believe it's implicated in the gut microbiome as well, probably detected in many of the tests that are available in the market. Mm hmm. And you'll see certain oral bacteria ethnically out.

And again, major, major players in periodontal disease as well. And the idea really the idea behind Brazil and kind of our our thought or the principle that we operate under is this idea that good health starts with the healthy mouth.

And I think that when we see the connections between species like Gingivalis and its role in periodontal disease and then its role in gut dysbiosis and colorectal cancer and Alzheimer's and cardiovascular disease, there there really is this opportunity that we have to, for a lot of people, I think, go from 0 to 1 in terms of our oral oral health and have this major impact in our overall health as well.

Yeah, absolutely. And then once you get all this, they also give set you up with a care plan here. And so it kind of says, all right, care plan goals reduce gut inflammation.

Bacteria, 14 weeks. And it says greater than 90% of the people who follow these recommendations for six months saw improvement in their oral microbiome.

And so they have a phase one reset, which is like two weeks, and they give me a routine to follow brushing, flossing, a certain mouth, rinse, tongue scraping.

Right, trying to remove stuff and all that. Yeah. Why don't you jump in there? Yeah. Yeah. So the care plans are custom designed based on your results and the idea.

We break each care plan down roughly into two phases, especially if that primary goal is reducing one of those disease related scores. Obviously, for somebody with great scores all around, our our focus is to just maintain.

But we we tend to write things down into due basis. So the first phase is really focused on removing the pathogenic bacteria. And that goes back to what I was talking about as far as physical intervention, some biologic or therapeutic intervention, what we do at the mouth rinse and then the second period and the majority of the time, you know, once we've really kind of gone through this scorched earth protocol is rebuilding your oral microbiome from the ground up and really trying to seed those beneficial bacteria and get you into a really balanced state.

And then after that care plan, we we tend to provide everybody with kind of a maintenance protocol, right? So so this is a very focused, you know, 14 weeks of resetting your own oral microbiome.

And then we have a whole set of recommendations on what to do after that. Yeah. So they they give recommendations for the tongue cleaner, the mouth, rinse, the probiotic, all that kind of stuff that you can just go ahead and get right there.

So again, two phases. The first phase they gave me was two weeks. That's the reset.

Dentistry, Prevention, and Functional Care

And then phase two, you know, is is where they're in a sense, replenishing and supporting, supporting my oral microbiome. So, you know, really interesting, you know, what you guys are doing here.

I think it's really fascinating. And yeah, I think every dentist should be doing something along those lines. Let's let's talk about what's happening in the dental field.

Obviously, there are holistic dentists and unfortunately, there's still a lot of conventional dentists that are still putting amalgam in people's mouths, still giving, you know, lots of root canals and all kinds of stuff like that.

Then there are holistic dentists, which are moving away from toxic materials, fortunately, thank God. And they're also using things like ozone and laser and stuff like that that, you know, help to can have a positive improvement on the oral microbiome, but they're usually not measuring what's happening there.

Yeah, it's been it's been a really exciting evolution in the field. So to watch, at least from our position, I think, you know, when we started the company three and a half years ago, it it didn't feel that every dentist that we spoke with had very little understanding of what the oral microbiome was.

I think the functional dentist community was a lot smaller than it is today. And just seeing the amount of education and awareness that has progressed over the years has been incredible.

But, you know, to your point, like the large majority of dentists, the the pervasive standard of care that exists today is this very reactive, physical intervention focused kind of brute force mentality when it comes to oral health.

And there's a whole host of kind of drivers behind it. I think, you know, that the amount of education around the oral microbiome in dental school for a really long time had been minimal.

Just the knowledge that there are bacteria in the mouths was basically as far as it went. And over time we'd seen the oral microbiome, the role that it plays, and a lot of these newer interventions that are coming out.

You mentioned ozone therapy becoming not only more of a standard of care, but I think more of a standard of education for the providers that are entering the field and another huge barrier is just this this unfortunate position that I think a lot of dentists and frankly, a lot of providers in the country are put in, which is, you know, we operate under a fee for service model.

And dentistry more than almost any other health related practice is overwhelmingly private practice. We're seeing more of a consolidation of those services.

But, you know, you have to keep in mind that the majority of dentists have to wear two hats. They're they're a health care provider and they're a business owner.

And when you have that holiday and you're operating in a fee for service care model, that unfortunately, financially incentivizes more care and not necessarily better health, you're put in this position where I you know, it makes preventive care a lot more difficult to implement.

And and again, I think the new generation of dentists and frankly, all health care providers that are coming into the market are seeing that patients are more educated, they want preventive care.

I think a lot more insurers are getting on the train of personalized care. And in kind of 360 degree health. So we're seeing a transition there. But it'll take time because we have this very old guard that still makes up a majority of of providers today.

That said, you know, the functional dentistry industry is the functional dentist industry is growing and education around the oral microbiome is growing.

And we're seeing a lot more exciting therapies, a lot less kind of physical interventions, and we're seeing better materials getting made to replace a lot of the toxicity areas that you had mentioned that were being used and things like cavity fillings and implants and all of those.

Yeah, super important for sure. And so how does somebody get started with Bristle? What do they if they want to get this this test on and really look at their oral microbiome, what are the steps they take?

Yeah. So there's, there's two routes. The easiest route is probably just going to our website personal health dot com and you can or will ship it to your house.

All you do is provide a sample, saliva sample and you send it back to the lab and results are ready in about two weeks. We're also starting to work with functional dentists, so we're going to be launching a directory actually of actual dentists that use bristle as part of the practice.

So if you're looking for a functional dentist, if you want to double check, if your functional dentist uses oral microbiome testing, you can go to the directory and if you find somebody in your area, then you can schedule an appointment and you can get advice from them as well.

And we do a one on one trainings with every dental practice that starts using Bristle. We actually go through the first set of results that come through with somebody from our team.

So you can rest assured that they will be able to interpret the results. They will be supportive and they'll know kind of what to do with that data, because we've seen that become a huge barrier for a lot of our users.

And I think broadly the functional health community kind of getting these results and not knowing how to bridge the gap between, okay, I have this data, like I have some knowledge and how do I get this to my provider?

How do I actually use this to influence the kind of care that I'm receiving? Yeah, it's really a new language and most practitioners are not familiar with understanding their most.

Most functional practitioners understand that oral microbiome is important. They don't understand and the clinical applications. Right. And what we're seeing on this Bristol test and then actually putting that into action and giving people action steps which makes it very helpful with what you guys are doing because you actually give the action steps right there. So I think that's great.

I think if there's anybody that's in the dental field should absolutely be signing up with Bristol and understanding this. If you want to be on a cutting edge, you know, over the next five years, I really think this is going to take over in functional dentistry because really getting to the root cause.

So you want to jump on now and if you're a functional health practitioner, a health coach or something along those lines, you want to at least have some level of knowledge, I will get your own oral health test done.

So you have the level of knowledge of what's taking place there. So I would definitely recommend that obviously anybody out there that's listening that just interested in improving their health, definitely looking at your oral health, your oral microbiome is a key factor.

So I think that's super important. And then last question is, what are some the best strategies I know? You know, I had strategies that I showed on my report.

What have you guys found to be some of the most effective strategies for improving somebody's oral microbiome? Yeah, so it always boils down to the individuals results.

But broadly speaking, we we've done a lot of digging through the data on electric toothbrushes are always a great call. We've we've seen noticeable significant differences in of oral microbiome profiles between people who use manual toothbrushes versus those who use electric and flossing.

Best Strategies and Oral Probiotics

And some of this may sound obvious, but I think they're going into the data, make it a bit more interesting and maybe motivates people who say that they floss every day and probably don't flossing.

One of the most impactful things that you can do. We saw significant differences between people who don't flossing people who do, but even, you know, between the frequency of flossing.

So people who played every day had a very significant difference between people who floss a couple of times a week or once a week or maybe a few times a month.

So we've seen that to be one of the best interventions. And I know that flossing can be a pain. So we had done some research in terms of straight floss versus the plastic versus water flossers and water flossers actually tend to be the most effective, and I think that's for a variety of reasons.

They're really easy to use and there's a lot of interesting things that you can do with kind of a water basically in the back. So for people who aren't familiar with water, flossers kind of like a power washer for your mouth.

So it shoots a jet of water between your teeth and helps you floss so you don't have to deal with the string or anything. And, you know, we've had people play it diluted hydrogen peroxide into that that water bass and then it's actually part of a lot of our care plan was that elimination phase.

Right. So hugely effective in eliminating those pathogenic bacteria and removing food from between your teeth and then the rise of probiotics. I mean, I think that probiotics have been around for a really long time in terms of the gut microbiome and gut health.

They're relatively new when it comes to oral health, but we've seen them be extremely effective, again, in combination with a lot of those other practices that I mentioned.

And obviously, you know, making sure that you match the right probiotic with the right oral microbiome profile. And the last one, I think tongue scraping is is very effective.

It's something that people don't pay a lot of attention to, even if they pay a lot of attention to your oral hygiene. And we've seen a lot of Candida fungi, a lot of epigenetic bacteria that grow in the grooves over time, and it can lead to downstream issues.

It's a reminder for me because I don't tongue scrape. So good reminder there as far as utilizing that. And then you mentioned probiotics, oral probiotics and matching the right probiotics.

And we talked about lactobacillus and uteri. What are some of the other ones that you see? I know that you have like a sensitivity score. So when you're looking at that's a cool thing about Bristle Health is you guys have not only the bacteria but also their sensitivity to different types of probiotics.

What are some of the other strains of probiotics that have a beneficial effect on the oral microbiome? Yeah. So some of the most common ones streptococcus, the various is one of the most well-characterized oral probiotic strains.

There's two specific strains that were released. I think it's Kate Wild and M18, and that's produced by a company called Bliss and what's here Lactobacillus repair. I lactobacillus solid various and lactobacillus plantarum are two of the other kind of more well-characterized strains.

And in our results we have a breakdown of all the different strains that you need to have based on your results. And then we refer you to different companies that provide those probiotics.

And we actually released a probiotic breath in ourselves that has kind of the best in class strains. We went through our oral microbiome data. We kind of understood the most common imbalances and designed normal probiotic.

We're going to release more over time and make them a lot more personalized. But this was a good start. And there's another handful of companies on the market today that are producing oral probiotics, but it's still a relatively small industry.

Yeah, for sure. Well, Danny, this has been a really insightful interview. Really appreciate your time and your expertise here and really excited to get this information out about the oral microbiome and its role in overall health and longevity.

So, so thanks so much. Any last words? Inspiration for our audience? I would just you know, I think that oral health is one of those overlooked parts.

We don't think about it that much, but it is a huge component of our overall health. And I said this earlier, but I'll say it again. Just remember, good health starts with a healthy mouth.

Yeah, for sure. Well, thanks again, guys. Checking out bristlehealth.com and we'll see you guys on a future interview. Be blessed, everybody.