## Introduction and Speaker Background

Welcome back to the Reverse Alzheimer's Summit. I'm your host, doctor Heather Sanderson, and I'm so excited to have Doctor Scott Sanders on today. Doctor Scott is a co-founder and president of Healthy Mouth Media.

Scott received his dad's degree from Georgetown University School of Dentistry and practiced general dentistry and periodontal wellness. A trained clinical EFT or tapping practitioner since 2009.

Scott learned EFT from his HMO co-founder and partner Bonnie Benjamin, disturbed by the gap between mainstream dentistry and cutting edge research. Scott moved from clinical practice to writing for dental consumers and clinicians, blogging and collaborative publication and authoring of peer reviewed journal articles.

Scott recently most current cut Excuse Me, Scott realized that most current health research isn't available to the public, and even health care professionals don't have the time to read the ever expanding, peer reviewed literature.

From the synergy of Bonnie's and Scott's passions, Healthy Mouth Media, and the popular functional Oral and Airway Health Summit were born to bridge these information and educational gaps and empower health consumers and professionals alike.

Scott, welcome. Thank you very much, Heather, for having me. It's a pleasure to be here. So you have been working in this space of of Alzheimer's. And in fact, you and I both have taught for Doctor Bateson and as a dentist who has been in clinical practice as well as deeply involved in research and on oral and airway health.

You bring a totally different perspective to how we look at Alzheimer's and how we can potentially even prevent it. Starting as a child. In fact, you see that the seeds of Alzheimer's can begin in childhood.

What do you mean by that, exactly? Yeah. That's right. And Heather, for a long time, medicine thought of Alzheimer's as a disease of the elderly, with the average age of diagnosis in the mid 60s.

It was thought to be primarily an inherited genetic disease and a death sentence, especially if your parents or grandparents had it. And doctors thought Alzheimer's was caused by plaque buildup in the brain, causing a loss of brain function.

And from there, drug companies began looking for a pill that could reverse any plaque buildup and cure the patient. But all drug therapies have totally failed.

We now know, based on research in the last few years, that Alzheimer's isn't a disease caused by just one thing. And although there is a genetic component, it does not constitute a death sentence.

What we also know now, and this is really important, is that lifestyle. Is that Alzheimer's? Is it is that Alzheimer's is a lifestyle disease with many contributing factors, factors that are all the things that we already know individually make us sick in other ways.

Things like poor nutrition, hormonal imbalance, smoking, environmental toxins, insulin resistance, systemic inflammation, and poor sleep. And in parallel with poor sleep, sleep related breathing disorders or SRB DS like obstructive sleep apnea or OSA.

Now, because of my dental experience, both in clinical practice and through research for many years, I'd like to address the ways in which poor, poor oral health, breathing and sleep disorders all contribute to the development of Alzheimer's.

And these problems don't start in old age or even middle age oral health, breathing disorders and poor sleep can and often do begin in childhood. Yes, the seeds of Alzheimer's, as we call them, can actually start in childhood and

if not diagnosed and corrected as early as possible.

Well, 40 or 50 years down the line, that child could be diagnosed with Alzheimer's or other dementia or neurological problems. Now, let me explain a little bit more about that first.

## Alzheimer's as a Lifestyle Disease

Poor oral health at any age results in pathogenic meaning disease causing bacteria constantly flooding your bloodstream from the infection in your mouth.

Now, many people say, but I don't have any mouth pain, so they think there's no infection or it's not bad enough to cause problems. Well, begs the question do your gums bleed when you brush or floors your teeth?

If so, then you have an infection in your mouth and pathogenic bacteria flooding your body through your bloodstream. Gum disease is one of the most common and ignored chronic infections on the planet.

Your gums are an area about the size of the palm of your hand. Now, if your hand was bleeding, we should just ignore it. Of course not. So why would you ignore bleeding gums and gum disease that can have such devastating long term effects?

When an untreated, constant, low grade oral infection spreads through your body, it will cause inflammation in your whole body. And if you have an area of your body, such as your heart, that is already weakened by other factors such as smoking, that systemic inflammation can make it even worse.

So when your gums bleed, it's not a one way trip for those bacteria. Those bleeding gums also allow the bad bacteria in your mouth that the ones causing infection to get into your bloodstream and circulate through your whole body.

In recent studies, these bad bacteria have been found in coronary arterial plaque, in the placenta, in the heart, and in the brain. Let me repeat that because it's really important.

The pathogenic oral bacteria have been found in coronary arterial plaque in the heart and in the brain and in the brain, and in arterial plaques in other locations as well.

Specifically, studies have shown that oral infections can be directly tied to the prevalence and severity of heart attacks and strokes. Yes, brushing and flossing can actually prevent a heart attack or stroke.

Remember I mentioned these bacteria can also pass into the brain. They cause inflammation of the brain. Sometimes only a very small amount at first. But continued bombardment with these pathogenic bacteria eventually causes brain damage.

And it's not just Alzheimer's. These bacteria and the brain inflammation they cause are also tied to other neurological disorders, such as Parkinson's and multiple sclerosis.

So that's the first link between oral health and Alzheimer's. And it is totally in your control and in your patients control. So have had patients mentioned.

Well, if I am sticking something really sharp in my gums and they bleed like it, doesn't, that make sense that my gums would bleed if I am jabbing them with it with floss or a toothpick or whatever it is?

But you're saying that any amount of blood, if with brushing or flossing, is a sign of infection in general, when you're applying a force such as would be applied with a toothbrush or a dental floss, if your gums are in good shape, that is, if they're not, if you don't have a chronic inflammation going on in your mouth, they're not going to bleed.

Yeah. If you take an explorer or a periodontal probe and you jam it up into the space between the tooth and the

gum, even the healthy one, sure, it's going to bleed.

But what we need to keep in on Heather is the the level of chronic inflammation. The more the higher that level of chronic inflammation, the more of a tendency you're going to have for your gums to bleed with just flossing or brushing.

And if you just go ahead and brush and floss and then rinse your mouth and you say, as has been captured pink in the sink, that's not good. And that's an indication that there is inflammation going on in your gums.

So schedule with the dentist. Yeah. And dental checkups and brushing and flossing are important. But there are there are a lot of people who check all those boxes and they still end up with cavities and gum disease as well.

What people, I think, overlook and what dentists overlook sometimes as well, is that you need to pay attention to the good balance between the good and the bad bacteria, as your I'm sure you're familiar with the oral microbiome, like the microbiome and any part of the body.

It has to be balanced where the good bacteria are in charge and the bad bacteria are not, doing their pathogenic thing. And that's one of the, one of the areas where I think the dental community needs to be a little bit more emphatic in telling their patients just how important that is, beyond just brushing and flossing and regular checkups.

And we talk a lot about this in terms of the gut and more and more so in terms of the sinuses, where there's good and get a good and bad gut bugs or sinus bugs.

But you're saying, okay, well, the gut starts in the mouth, so we need to be paying attention to the balance of microbes in the mouth as well. That's true.

And there has been a lot written about it, especially of late. And people who are mainly blogging, and about the relationship that the oral microbiome and the gut microbiome have and you're absolutely right there.

So talking about to two ends of the same organs. So naturally there is going to be communication there. And you know, bacteria, bacterial populations are very good at communicating with one another.

And bacteria are very smart. And we depend on them for our lives basically. They've been around for a lot longer than we have. So they know things that we know.

So you're right. The oral microbiome is the same critically important niche as is any other microbiome in the body. So you mentioned two other mouth related factors that can also be seeds for Alzheimer's to begin in childhood.

What are those two other mouth related disorders that research showing can lead to Alzheimer's or breathing disorders and sleep disorders? If you can't breathe well, you can't sleep well.

And for that reason, I'm going to cover them together when discussing the risks. But then I'll be breaking out the warning signs for especially in kids, both sleep problems and breathing problems.

They tend to go together, but looking at features of age can be a very helpful thing. Now, one of the most common sleep related breathing disorders that people have at least heard of is obstructive sleep apnea, or OSA, which is another.

This is an epidemic. One of the many chronic disease epidemics that we have in this country and throughout the world. I've seen estimates as as as high as 54 million Americans who suffer from obstructive sleep apnea.

More estimates are closer to 25 to 30 million. But still, that is an awful lot of people. And most of those people are walking around and snoring around undiagnosed.

Now, obstructive sleep apnea is a condition where during sleep, the tongue falls back toward the falls back toward

the back of the mouth, preventing the child or the adult from taking a normal breath.

Now that's characterized by the rise and fall of the chest, but there is no breathing. That's the body trying to breathe, but the closed throat isn't letting up.

So eventually the person will wake up just enough to gasp air, and then restarts their breathing as they may regain normally the breathing rate for a few seconds or up to a minute.

Then the cycle of not breathing starts all over again. And this is known as apnea and high pop. Near stoppage of breathing and impaired breathing. And this is measured measured by HHI or the Apnea Hypoplasia index during a sleep study.

So meanwhile the oxygen level in the blood called oxygen saturation, fluctuates all over the place, dropping to potentially dangerous levels. It's supposed to be and I mean, we've seen just with, health care professionals measuring pulse ox in the, in the clinical workplace, it's supposed to be up around 96, 97%.

Sometimes in the OSA patient, it drops down into the low 80s. Myself included, I've had pulse ox sets in the low 80s during sleep studies, and that is dangerously low now.

As we'll see, recurring oxygen deprivation is, not surprisingly, not good for your brain. So the gold standard for treatment of OSA that has been recommended by sleep physicians for decades is a CPAp, or continuous positive airway pressure device.

And there are a few variations of this, but they all push air into your nose to force your airway open when you're asleep. A recent research is beginning to show that these CPAp devices do nothing to cure sleep apnea.

Cure is a word that is used very seldom in medicine, as I'm sure you've noticed. And at best, CPAp is a band aid, and at worst it can actually make other symptoms worse.

Now, I'm not going to go into all the various ways of treating sleep apnea here. CPAp is one and there are others that are in common use. Instead, I'm going to focus on looking for the root causes.

And as a natural path, I'm sure that you can appreciate looking for the root cause and the functional medicine approach. Kind of preaching to the choir here, looking for the root causes and treating those root causes to prevent sleep apnea from ever becoming a problem.

## Oral Health, Gum Disease, and Brain Inflammation

And just as an aside, as I alluded to a moment ago, I suffer from severe obstructive sleep apnea myself. And for the last 12 years, I've been on a journey to find my own solution to sleep better and to have more mental clarity and save my brain.

CPAp did not work for me. In fact, the doctors to prescribe CPAp know that only about 30% of the patients they prescribe it for will actually continue using it on a continual basis.

And as I alluded to a moment ago, long term CPAp use. There have been studies that are demonstrating that even long term CPAp use is not going to get you around some of the cardiovascular risk factors that are associated with OSA.

And as you can imagine, having OSA results in not only in disrupted breathing but also disrupted sleep, as I can personally attest to. Also, even if the person doesn't remember waking up multiple times an hour to breathe.

Now think about what happens when we can't breathe, when the brain is deprived of oxygen. If someone is choked or is close to drowning, they lose consciousness.

The brain shuts down when it doesn't get enough oxygen. Not exactly rocket science. And although the oxygen deprivation is only for ten to 20s at a time, the fact that it's happening possibly hundreds of times a night.

And that's what the energy index that we find from a sleep study will tell us. It will tell us how many episodes happen per hour. And then over the course of the night, you just multiply it by the number of hours you sleep.

If that's happening possibly hundreds of times a night, that adds up to a significant oxygen deprivation. And this repeated lack of oxygen to the brain is another seed of Alzheimer's.

There are literally hundreds of published studies that have looked at the way sleep apnea affects the brain. Which parts of the brain? The the severity, how apnea is tied not only to Alzheimer's, but also other neurological disorders such as Parkinson's.

I don't have time to go into all the results here, but I want you to get a sense of just how important healthy breathing is for brain health. So bottom line, if you can't breathe, neither can your brain.

And as a dentist, your perspective comes from well, as a dentist, as someone who also personally has experienced this. Your airway is. I mean, it's in your mouth.

And also, do I understand correctly that some of the alternatives to a CPAp, if someone isn't tolerating that is a dental or an oral device that can maintain that patent airway through the night?

Correct. That's usually the the the first fallback for if a, if a patient, as as many patients are, are CPAp intolerant, they will usually have the at the dentist or be referred to a dentist who practices dental sleep medicine, who will fabricate an oral appliance for them.

And there are probably hundreds of oral appliances under different brand names on the market. And these the the good ones, the ones that do some good are the ones that are custom made by a dentist who practices dental sleep medicine and has the appropriate qualifications to know what appliance to make for what patient.

That is not always the case. And the that's really important to know, right? That there's not one brand that people should be looking for. But really that what you want is and this is true in most cases in medicine, right?

Is something individualized, something specifically made for you by someone who's well trained to get you the right type of device that will keep that airway open at night.

Right. And unfortunately, more often than not, either you find that a dentist will usually make the same type of appliance for, for all of the patients.

And these are, these are all is the cheapest. Probably won't be able to see your your. Okay. But if you want to just describe what you should or what you've seen clinically in one of the picture and take a look at this one and I'll be I'll be providing this anywhere, that your, that your listeners will be able to see on this graph probably won't be able to, you know, that is.

But if you want to stay tuned for what you have to or what you and it will have all these graphics. Sure. So hear what you're saying and I'll be I'll be providing a tour of, the your listeners will be able to and on his drowsy home, and it's up in his bed next to that or and populates and it will have me.

This is always. So hear what you're saying because he looks like a little boy. Obviously this is, you know, maybe two and a half years ago, we have sleep and he's snuggled up in his bed and he's wearing a sleep nose.

But the message is clear. There are people asking about devices. He looks like he's sleeping. And obviously the system. Sometimes they work. Sometimes I don't know what clients really just child is shocked to see an AC power device or no, but the message is clear.

There are lots of who are prescribed. I would imagine it's not really, and not really that hard. Sometimes they work sometimes. So, what's the compliance rate for a child is with a CPAp device relative to what it would be for an adult? But, I would imagine it's not really.

There's one last alternative to not really that high. It's called the hypoglycemia stim. So, Well, before I go into that, let me, let me first say that getting back to our.

There's one last alternative to a CPAp. It's called the hypoglycemia nerve stimulator. Well, before I go into that, let me let me first say that getting back to our.

Not really that high. So our children prescribe CPAp. They understand that they can have breathing disorders and sleep apnea. But what they use is CPAp.

Children are prescribed CPAp because they many, many children do suffer from OSA, have their as many as much as 25% of all children suffer from obstructive sleep apnea, which I was very surprised to see that, to see that figure.

But that is one of the estimates that I've seen. Are they prescribed CPAp? Yes, because they can and do have OSA. And there is a graphic that we're going to be sending you it as part of the the PDF that I'm making available a free PDF for your listeners, for your audience members that will have all these pictures in it.

And this one shot is of a little boy toddler age, maybe about two and a half, snuggled up nice in his bed with a CPAp machine strapped to his face and his teddy bear next to him just sleeping peacefully.

I know how many adults are not really on board with using CPAp or who who can tolerate it. I know I myself could not, I'm guessing that kids this age would be a problem.

And, there are some newer alternatives to CPAp and similar positive airway pressure devices that have come on the market in the last few years. Now they all fall under the heading of oral appliances and must be made by a dentist trained in their use.

As I think we were. We touched on that earlier, and this can be very confusing for the patient because there are many different appliances and most dentists who make them specialize in only one brand.

Unfortunately, OSA is not a one size fits all condition because everyone's mouth and everyone's airway structure is slightly different, right? What works for one patient may be of no use to another.

I can attest to this personally, having tried three different oral appliances, none of which reduced my severe OSA at all, as measured by the air dry as well as my blood oxygen levels in the many sleep studies I had.

And just to give your audience members an idea of what the oral appliances do, usually there's an upper and lower portion to the oral appliance, and there is a lock that links them together.

And what it does is it repositions the mandible or lower jaw in a position that's forward of where it usually would be on. And what it does is it repositions the mandible or lower jaw in a position that's forward of where it usually would be, allowing the tongue and lower jaw to come forward and taking pressure off the airway.

Sometimes that works, sometimes it doesn't. An unfortunate side effect of that is it has to attach to the upper jaw or maxilla for Anchorage. And over the long term, one of the effects that that can have is to push the maxilla backwards.

And part of the problem and part of the root cause of obstructive sleep apnea is unfortunately, both the jaws, the maxilla, and the mandible being pushed too far back.

As you can see when you look at a lot of people in profile. So a long term use of an oral appliance has its pitfalls as well. Now there is one last alternative to a CPAp, which is called the hyper Glassell nerve stimulator that I only

discovered last year.

And I immediately perceived that as a means of treating my severe OSA because everything else had failed for me, this is an implanted device, kind of like a breathing pacemaker.

It has three parts a sensor to monitor breathing. And that's right about here the control unit, which is right up here, which is kind of the brains of the operation of the system you're pointing, you're pointing to under your armpit.

Under it. Yes. And it's implanted. It's implanted under the skin. Under the armpit. This is the respiratory sensing weed. This is the the main computer.

And the third, implanted the third implant is right underneath here. So when is so when the under the armpit. The other implanted part of the device is under your chest, and it's on your right side in the chest, over the heart, but above the opposite side of your chest.

And when they do and the third one is under your jaw, the third one is under the jaw, and it wraps around a specific portion of the hyper colossal nerve.

And how it works is when you when you have an apnea or hypoplasia, you have an apnea episode.

## Sleep Apnea and Oxygen Deprivation

This part, this sensing with sensors, it it sends a signal to the computer which processes it and sends a stimulation signal to the hypothalamus on nerve, which in turn sticks out the tongue and opens the airway so that the breathing can be more normal.

I'm on the edge of my seat here. It synchronizes itself to the, Well, that's the big thing. However, I'm just a few days away from having this device.

This is called inspire, and you can read more about it on Inspire sleep.com. I have no financial or other relationship with inspire other than that that I use one, and I have high hopes that it will work.

But it's it's a really good device. It was approved or clear by the FDA in 2014. It's been implanted in probably over 5000 patients. So it's new and it's yet it has a very good clinical track record and you have it implanted.

It has to heal for about four weeks, and then you go back to your surgeon's office, as I will this Thursday and have it turned on. And it's got a remote.

Which you use to control the intensity of the stimulation and the frequency. And it takes sometimes a couple of months to get it dialed in. But ideally, when you hit the ideal rhythm, you go to sleep and you're no longer plagued by apnea or high, probably as it synchronizes its stimulation and sensing to your breathing pattern.

And this kind of a proactive approach, just to keep your breathing normalized and keep your airway open. And normally this is prescribed as a last resort, but I would like to see it in greater use.

And again, fingers crossed I have high hopes that this will work and I will keep you posted. Yeah, that would be phenomenal because I have had so many patients who get a CPAp and they feel like it's killing them, right?

It's there to help them to get more oxygen and prevent them from having, you know, these epic events during the night. But it also can feel very claustrophobic.

It can feel very uncomfortable when you're trying to relax, that you have this mask on your face. And so alternatives to that that can be a little less effortful would be very, very helpful.

Sure. And it is it is a major it's a surgical procedure. It takes my procedure took about 3.5 hours. But you know,

thankfully I mean, I have you you need to up obviously, as with any medical practitioner you need to research his or her qualifications.

I have a very good surgeon, and they have a very good referral based on the inspire website. And but it is something that should not be taken lightly because, you know, you are getting implants placed into your body.

And, you know, I know some people might find that a little bit scary, but I can tell you that the recovery period has not been really a big deal at all.

And I'm just looking forward to turning the thing on and letting it go to work. Well, that's something we also know is associated with Alzheimer's, right?

Is our, procedures where they require general anesthetic, which if you were being cut open and having these things implanted for 3.5 hours, that certainly would be something to consider.

So there's risk benefit analysis and doing that with it, whether it's with the record provider or somebody else who you really trust, where you can say, you know, is the benefit of this worth, the potential risk of all of the anesthetic and the recovery time and everything else that comes with it?

Sure. And obviously that's the decision that would have to be made by the individual clinician in collaboration with, with the surgeon and somebody like, like a record provider.

And I don't know if there are any inspire surgeons who are record providers. I would like to see that they that the news would spread and that they would collaborate all together, which is what we what we like to, foster or even prejudge, you might say.

But yeah, that would have to be decided on a case by case basis. And I don't know of any cases of the inspired device actually being implanted into someone who has been diagnosed with Alzheimer's or is getting slight cognitive impairment or moderate cognitive impairment, but that's a really good point.

And yes, general anesthesia would be a major consideration there. And yeah, it's it's not a it's not a short procedure, that's for sure. Yeah. Yeah. So but something to consider.

You know it's always nice to have the list of options be a little bit longer right. I think I they go I'm sorry. I just wanted to I wanted to know the inspire is the one that's been around the longest.

It's had the longest track record. It was FDA cleared in 2014. It was cleared in Europe with the certification. I think four years before that. And, that's that's the one that I, chose to use.

I'm sorry. You had another question. No, no. Yeah. Are there other breathing disorders that also affect the brain? Other anatomical factors, such as jaw size and impingement on the airway by the jaws will remain.

And that's the next step that parents have to take. And sometimes, depending upon what doctors they're consulting and having the kid's tonsils not know it's taken out, they may not know to take out.

Here's another example of a child who likely has a breathing problem and notice open mouth, his head, forward position, and his lower jaw, which is positioned about an inch behind where it should be or retreated.

So if you're looking at someone you would want to be looking in their profile. So yes, them from the side, like looking straight on at their ear. And what you would notice is that the nose is in front of the lower jaw especially.

Are there other landmarks that we would want to look at for, for those of, for any listeners who aren't looking at the picture, what landmarks would we want to be looking for and how do we ideally want to see them lined up?

And what would be a red flag? Right. First of all, as you correctly pointed out, I would I would encourage everyone,

consumers and clinicians alike, watching this, listening to this, that they kind of practice looking at people in profile, just in regular social situations.

It's be a little bit more difficult because a lot of people may have masks on right now, but, you know, just something as simple as watching TV. Look at people's profiles.

If you look at it in profile, you see the first thing that will jump out at you is that, as you point out the chin, as in this little boy, it looks like it's nonexistent.

And I've seen some that are even worse than this way worse, it almost looks like a slope when you look at the person in profile, something that is less apparent is the upper jaw.

You want to look right under the nose, the upper jaw or maxilla. This little guy looks like it's not as bad as it could be, but sometimes you see that the upper jaw is very flat, or maybe even just in, which indicates a maxilla that is not big enough.

If it's not big enough, it can't accommodate all the teeth. And if it's pushed back, it it and the lower jaw being pushed back are both going to impinge on the airway.

Mouth breathing is another thing to look for. If a kid looks like he's walking around with his or her mouth open all the time, then that's that's not a good thing, because nasal breathing is really the only breathing that we should be doing.

Now, all of these signs are signs that this boy and other pictures that you'll see that that look like him has a breathing problem and that is his body trying to compensate both in opening the mouth and also the head forward posture is the other biggie.

Heather. If you look at the person in profile and they look like this is their normal position, well, it's not the normal position with their ears far in front of their shoulders, right.

And a good way to to measure this is to draw the draw a line from the triggers of the ear to the, to the clavicle, and look at the amount of throat or Adam's apple or airway that's in front of that.

## Treatment Options for Sleep Breathing Disorders

And that should be a considerable amount. If it's just a little sliver and you put that together with the fact that the head posture is way forward, then that kid or that adult for that matter, chances are he or she has a sleep breathing problem, and that almost guarantees that they'll also have a problem with getting good sleep.

Now, it's not possible to actually diagnose the sleeper breathing problem from just one photo. That's important to know that. I mean, as you know, as a clinician, you have to you have to look at all of the factors that contribute because it's never just one thing.

But if I were if I was a parent and this was my child, I would want to have them evaluated by specialists who could diagnose and treat him, which unfortunately does not would involve looking beyond your regular garden variety, health care practitioners or health care team.

Because most pediatricians are not specifically trained in craniofacial anatomy. That's the province of dentists. Well, ideally it is anyway. And more specifically, sleep dentists or pediatric sleep dental suer who have had special specialized training in this type of dentistry and in craniofacial anatomy, and how that relates to airway health, such dental specialists are uniquely qualified to evaluate and diagnose muscle and skeletal problems in a child like this, and address them as early as possible.

Again, I can't emphasize strongly enough how their early intervention is the key. Parents should have their children associated probably by the age of 2 or 2 and a half, by the appropriately qualified specialists, to head off a potential

airway problem, which for most kids, unfortunately, there's going to be some kind of an airway breathing problem there with the intent of addressing them as early as possible.

Again, ideally while the bones are still growing in order to correct them before they become a larger problem. And one really great diagnostic tool that these specialized dentists use.

And you're seeing them more and more often in more and more dental offices, especially the dentists who get the that airway and breathing are such a widespread issue.

This is a type of x ray. It's a 3D imaging technique called cone beam computed tomography, or CBCs. Now, CBC imaging can actually assess the volume of the airway and again I'm going to have, a picture in the downloadable PDF that will show images of a restricted airway, will be on the left side.

And you'll see a red area denoting restricted low volume airway compared with the normal airway on the right. You'll note the green area denoting greater airway volume.

Now a common comparison or a metaphor here is cocktail straw versus garden hose. And trust me, you want a garden hose because it's much easier to breathe through a garden hose than through a cocktail straw.

And this tends to resonate with people. I think it would resonate with most parents, and if they see these cbc-tv images, that's really going to hit them in the face with what might be going on for their child or for themselves if they're an adult being, evaluated for a sleep, breathing problem or OSA.

Now, any dental practices, any dental practice that does orthodontics or is focused on sleep breathing dentistry should be doing CBCs CT scans on every patient that comes through the door.

Kids, adults, everyone. So you do need to ask specifically about this, and you're going to find some who don't have these machines. And they'll even try to tell you that it's not important to use them.

But I would strongly disagree. If they don't have a CT machine, find a practice that does have one. So we've talked a lot about the way parents can look for their children.

But I'm curious because, you know, we're here talking about reversing Alzheimer's. I'm so excited that you're all about preventing it for a caregiver, taking care of someone who's suffering with dementia, or even someone starting to suffer with mild cognitive impairment, what would you suggest they look at?

What are some warning signs we might see that would suggest they need to go see one of these specialized dentists, or look further into how their sleep might be affected by their airway.

Be working with the health care team that involves an airway literate dentist, an airway literate physician who has a passing familiarity with with functional medicine.

If you are, if you have, a partner who happens to tell you that you're ceasing to breathe while you're sleeping, of course, that's the major red flag.

If you don't feel like you're sleeping a lot, like if you're using a smartwatch like a Fitbit or an Apple Watch, you're not getting good readings on that.

You're feeling tired during the day. You're, you know, falling asleep when you shouldn't be falling asleep. That is an indication that you are having some kind of a sleep breathing problem, or that you're not sleeping well, or as frequently happens together, both of them.

Because if and if this goes uncorrected and your breathing continues to be impaired and that happens to be verified by one of these airway literate dentists or orthodontists taking a a cone beam CT scan.

Ultimately, if the breathing continues to be impaired through more of a cocktail straw rather than garden hose airway, ultimately, this may result in Alzheimer's decades later.

So the the earlier the jump that you get on that and the more proactive you are, even if you're not really having overt signs of a sleep breathing disorder or a cognitive impairment, I would urge anyone, oh, I don't know, in their in their teens or 20s, at the very least, latest to proactively seek.

Yeah. These people you're going to be past that, right. They're going to be in their 60s and in their 50s and 60s. And is there hope for them of of course, of course.

But I'm 63 myself and I'm only now getting a handle on my issues. And thankfully, I'm healthy. I've, I eat organic, I take I take good care of myself.

I exercise a partner, Bonnie and I both take excellent care of ourselves, and thankfully I'm healthy. I don't have any chronic diseases, and apart from a wrist from occasionally not being able to to remember where I said something them, which may happen once or twice in a week.

And you may notice that that is happening more and more subtle things like that. I don't have any signs. If you are in my age group or, and you're having signs like this, or even if you're healthy.

Yes, of course there's hope. It's ideally the best time to start preventing Alzheimer's is in childhood. That's that's the surest bet right now. Heather and I send that message to parents.

And that's why I'm urging that they have all these these things assessed in their children. And there are telltale signs in children as well. But I think they're way people can be real proactive.

Is the polysomnography right. And so I send people out pretty aggressively for sleep studies. And often what I'll get coming back is sort of equivocal.

They're like, well, there's the that you mentioned. I was a age I events, right. These picnic events that I think the, the what I would say is the arbitrary number is five a picnic events per hour.

If you're having less than that or write about that, then they say, well, you know, you're having these, but it's not full on full blown sleep apnea. And my tendency as of yet and maybe you can correct me if I'm not doing this quite right, but is to say, you know, I don't worry about it necessarily.

Waiting for a prescription from the sleep doctor. Let's go ahead and get you a prescription for a CPAp if you're willing to wear it. Or let's get you to the dentist to address that, even if it's in that equivocal range.

Let's treat aggressively. And what I've seen so far clinically is that that makes a big difference. People feel more rested. They feel clearheaded. They actually feel quite better.

They tend to heal more quickly from infections and things like that, that life improves when we aggressively treat this. Are you seeing something similar?

And this is in adults, you know, not just for kids but in adults. And this is just to be clear, this is in adults who are coming back from Apollo. Some, like some deGrom sleep study with an age of five or under.

Yeah. Well, or around between 5 and 10, five or under. And the sleep doctor is basically saying, well, you could get a sleep, or a, excuse me, CPAp. Yeah. Or an a pap, but you don't have to.

And my, my, when they run it by me, I say, no, let's go ahead and get one. Let's get you started on some sort of treatment. Yeah. Yeah. And I think that's that's a very good approach, Heather.

That's very proactive. And I think that at that point, it depends on what information has been collected up until that

point. If they've had they've taken all the indices and they've gotten to the point where they've actually had a hospital sleep study, and that's been interpreted by sleep medicine physician who I would think would be qualified to do that, I would recommend that they not rely on simply what one practitioner is saying, but rather of find a dentist that does dental sleep medicine, get a cone beam computed tomography scan because I would, I would guess that most patients who get to the point of having a PSG probably have not had a come back CT scan, or perhaps their dentist doesn't do them, or maybe is not familiar with them.

That to me would be a signal to start getting more of a read on what your craniofacial and airway anatomy look like, and start getting more of a perspective by a clinician that has studied and is literate with craniofacial anatomy, and how that can impinge on the airway.

Now, some sleep medicine physicians are then again, some of them are not.

## Childhood Airway Clues and Early Screening

I would seek further information and but I would agree with you. Even if the air dry on a poorly sonogram is low, I would error, for lack of a better term.

On the side of treating rather than not treating. And unfortunately, usually you have to go for CPAp first because unfortunately, that's just the way things work.

If it helps them, fine. If not, then go to the next step, which would be an oral appliance. But seek further information. Don't just say, all right, I've got an H, I have three, you know, Bob's your uncle.

You don't want to do anything else I would agree with, you know, that there could still be something that needs to be further evaluated, so they should seek further information.

I'm curious what your thoughts are about this. Some new effects or the the tape? The mouth tape that helps with nasal breathing at night. The oral health side is pretty easy to determine and address.

If there are issues. Now I'm going to sound like every other dentist you ever heard and tell you to make sure that you and your child see the dentist twice a year for cleanings and checkups and brush and floss regularly.

And that's every day. While all these things are very important, other factors like the balance between good and bacteria in your mouth as we touched on the oral microbiome also need to be addressed.

And I've also voiced that I think most dentists and dental hygienists do not pay sufficient attention to that. But I think that is changing slowly. But in addition to brushing and flossing and dental checkups, there are other easy ways to greatly improve your oral health, such as using an inter dental brush call, also called the peroxide brush.

And if you don't like the floss, if you don't like to floss, that using a tongue scraper to remove additional bacteria and using a water flosser like a water pick to get hard to reach places in between teeth, is an effective method to keep the, the biofilm down.

And there are also some other products that can help. For example, products containing the sweetener xylitol are very beneficial and helping to prevent cavities because they kill the bacteria that cause cavities and help to balance out what otherwise might become a cavity causing oral microbiome.

And small aside here, bacteria, not sugar, or what cause cavities? The sugar feeds the bacteria. But in the end, the the end product of the bacteria eating the sugar, which is the bacterial poop that's acidic and naturally causes the tooth decay.

And again, the balance of good versus bad bacteria. The oral microbiome is a critical piece of this picture. And there's a lot of information available that, your audience members can use to research that and its importance.

Now, as for figuring out if you or your child have a sleep breathing problem, that's going to require some really good observational skills, and it's also going to be in finding a dentist and physician who have the specialized airway and sleep training to diagnose these problems.

And we're willing to work together to solve any problems that they uncover. And this might be challenging because most physicians think that they're the only health care professional a patient needs, and that dentists are still one step away from being barbers.

I mean, that's kind of a grotesque example, but it's that there is still that schism between medicine and dentistry that we're desperately trying to bridge.

And the reality is that dentists, the good ones, the enlightened ones that I call them, are the true mouth doctors. And unfortunately, the dentists are a true mouth doctors.

Still suppose a small percentage of all that is in mainstream practice. Now that's changing again slowly, but it is changing now. I'd like to mention orthodontists here specifically, and these are the dentists throughput braces on your kid's teeth or an adult stiff.

While there are many fine orthodontists in practice who understand things like airway and how the occlusion and the bite and the whole face all need to be balanced for optimal breathing and sleep.

There are also many old school orthodontists who only look at straightening the teeth without taking into consideration what the overall effect of that straightening may be long term for that patient.

And these are the orthodontists who practice what's known as the extraction, retraction, orthodontic and that involves sometimes taking out permanent teeth and pushing the jaws back, which is falling increasingly out of favor, especially among airway focused orthodontists.

And most orthodontists are unfortunately not airway focused. It's happening less and less, but it is still happening. And these are the orthodontists who are true mouth doctors, and the general dentists that work with them collaboratively are also true mouth doctors.

We have awesome allergists, MDS and optometrists who are eye doctors. We have podiatrists who are foot doctors, EMS or optometrists or ODS. They own the ophthalmologist, the MDS or or eye doctors, podiatrists or the foot doctors.

When I call dentists or with a d d is for DMD oral mouth doctors, but we don't call them mouth doctors. All these degrees require four years of specialized schooling and hands on training.

After getting a four year college degree. Much, much the same as a naturopathy degree, which is your degree. But, dentists, we don't call them mouth doctors.

I've heard naturopaths as as they truly are referred to as physicians, which is an entirely, deserved title. We don't hear dentists described as physicians of the mouth or not very, not very frequently.

So anyway, to borrow a little bit from Rodney Dangerfield, for those of you old enough to remember him, dentists just don't get no respect. And unfortunately, that's that's true.

You know, I happen to be going to see mine today. Really? You're going to say I love my dentist. I have really, really great, biological dentists here in San Diego who I refer to you, who do such a good job.

And they, everyone I refer to uses cone beam. And so, you mentioned. Oh, I would imagine that somebody who's getting a sleep study maybe hasn't had a cone beam yet, and I'm like, no, not in my practice.

Everybody has got a cone being before they go get a sleep study. Good for you. We want to we want to make sure

that that, oral health I mean, you have queries.

I it's crazy to me that dentists don't get respect.

## Dental Prevention, Collaboration, and Final Takeaways

That's your perspective of it because health starts in the gut, right? We we hear this adage all the time and the gut starts in the mouth. And so it's so, so, so important that our oral health is a top priority.

I would say my experience with my patients and even personally is it's expensive and it's really, really hard to get it covered. So even if you have what I would consider relatively good dental insurance, not much gets covered.

So it's an out of pocket expense. And and, you know, this is happening in the functional medicine world as well. And like you mentioned, we're in such an insurance centric society, everybody, you expect coverage and you're paying a lot for insurance.

And then when it doesn't get covered, it just feels demoralizing. Yeah. And unfortunately most dental insurance is is not that good. It's going to cover maybe $1,500 worth of dental work per year.

It's not uncommon that you know, if you need full mouth rehabilitation with orthodontics and expansion and heaven knows what, you could be looking at 30 $40,000 worth of work.

And now I have to note here that it is possible and that there is a movement toward what's called dental medical billing. I don't know how familiar you or your audience members are with that, but there are ways to get dental procedures covered under medical insurance.

It's not easy, but there are experts who do nothing but that, some of whom we work with and have spoken on, some of our summits. So that's something that, your audience members could also check out dental, medical billing or cross coding and just Google that.

And some of the the people that we work with will we'll probably come up. So as you mentioned, right from the insurance companies perspective, it's proactive and should be preventive to cover, good dental, good dental hygiene certainly, but also just staying on top of cavities and other dental infections.

You mentioned that the heart attacks and strokes, atherosclerotic plaques, these are all related to our oral bacteria and then and and inflammation. So getting that under control early on, it seems like it would prevent a lot of healthcare spending, you would think and that that such a proactive approach would be attractive to insurance companies.

But I think the magic word that we're looking for here, Heather, is culture. It simply is not part of the health insurance culture. And, you know, getting back to, you know, dentists, you know, don't get no respect or whatever, it's less a matter of respect and more matter of culture.

Dentistry and medicine have been separate. And that's the culture. And culture is what we need to change here. And as I'm sure you've seen from the standpoint of a being a natural empathic practitioner, the culture of medicine is very staid.

It's very resistant to change. And the insurance facet of that is equally resistant to change. But I couldn't agree with you more. I think being proactive, and that's an excellent way to be proactive, you know, getting your oral health under control.

I mean, how many coronary bypass procedures is that going to prevent over the long term? Maybe they should be working that into their actuarial tables and, you know, making that part of the insurance culture as well.

But collaboration my $0.02. Yeah. Right. Collaboration. Well it's possible right. We're going to reverse Alzheimer's.

Prevent Alzheimer's. And this world of collaborative medicine is absolutely possible.

And what we see over and over, both in my clinic and at Marama, the residential care facility. And I know doctor reticence work. What we see over and over is that the more comprehensive we can be, the more we can put a lot of these puzzle pieces in place, the better our outcomes.

And so this dental piece is just so essential. So, so one of those big, big puzzle pieces in the in the picture of all of it. Thank you so much for shedding light on this very overlooked but supremely important side of health care.

Do you have any other parting thoughts for the audience? Yeah, the two things I'd like to wrap up with Heather specifically focusing on children, which we have kid in, pretty intense way in the last few in the last year or so.

And our last functional oral and Airway health summit did focus on children, specifically when a child's behavior is seen as a problem, usually for issues that aren't easily diagnosed by a pediatrician, there's tremendous pressure on the parents to have the child evaluated for a psychiatric disorder like ADHD, one that often results in medication being prescribed for that child.

Now, I'd like to suggest that before your child is labeled for a lifetime as having such a psychological problem, that he or she be evaluated for sleep or breathing problems.

And there are there are several sleep specialists who are leaders in their field. What what we call Cowell's or K opinion leaders, that key opinion leaders which the term I'm sure you're familiar with who based on what they see in their own practices, firmly believe that ADHD is actually a sleep and breathing disorder.

There is also significant research, recent research that, supports this. And I'd like to ask you and your audience members to take five minutes and watch an excellent film, and there will be a link in my free PDF bonus to this, that a mother made about her son's journey through this exact situation.

He was labeled with a psychiatric disorder, oppositional Defiance disorder, which is a heavy duty diagnosis for a kid, when in reality, his only problem was that he couldn't sleep or breathe.

So don't let labels, especially behavioral ones, define your child until you're really know what's going on. And finally, remember that the three areas I talked about as the seeds of Alzheimer's in kids oral health, optimal breathing, and sleep are all going to be factors in determining how healthy you and your children are throughout life.

And even if you or your kids never get Alzheimer's, optimizing the health of their and your own teeth and gums and making sure that you and they are getting the best sleep you possibly can while breathing optimally will go a long way toward you and your child having a long, healthy life and never getting Alzheimer's.

And that is why childhood is the best way, the best time to start preventing Alzheimer's. And that's probably the best shot that we've got, being as proactive as we can possibly be.

Scott, thank you so much for all of your time today and for sharing. Just your passion and all of this great information, super helpful information on preventing and reversing Alzheimer's.

It's been a pleasure having you today. It's been a pleasure for me. Heather too. Thanks. Thank you for having me on. Appreciate it. Thank.