A Special Interview with Dr. Arthur Strauss
By Dr. Mercola

DM: Dr. Joseph Mercola
DS: Dr. Arthur Strauss

Introduction:

DM: Welcome everyone. This is Dr. Mercola. Today, I’m here with Dr. Arthur Strauss who is a dental physician. He is a diplomat of the American Board of Dental Sleep Medicine. He is going to talk today with us about a very important topic that affects so many of us which is sleep apnea and his perspective on that. Welcome Dr. Strauss.

DS: Thank you Dr. Mercola. It’s a pleasure to have an opportunity to engage with you and the audience.

DM: Can you tell us a little bit about your educational background and your journey in coming to this approach that you have on this relatively common area that seems to be so typically mistreated.

DS: It is an interesting journey. After dental school I was in the military and while in the military we had different rotations. However, I didn’t have an opportunity to quite satisfy myself as well as I would like to so I began reading books on what they call dental occlusion (indiscernible 3:06).

I was introduced to a dentist in the area who was doing a lot of work of this sort. I went over to his office and we chat and he gave me a book to read by Victor Lucia. It was about bite and all these things. I read it like a cheap detective novel. I couldn’t believe how I went through the thing. It was a textbook. It was really detailed.

When I went back to him and I said this is great I need to learn more. I want to understand things. I know there are lots of different perspectives but I need some help and guidance. So he said, “How would you like to study with Dr. Stewart.” Charles Stewart was considered the father of gnathology.

DM: He was the father what now?

DS: Of gnathology. It’s relating to the movement of the jaw. He was born in 1900’s. He’s no longer with us. A great guy. He said, “How would you like to study with him?” I said, “Me?” He made some phone calls and I went out to your area Lombard, Illinois.

DM: You’re in Bartlett, Illinois?
DS: Yeah. And to study in the office Stan Tillman. Stan Tillman and his father wrote the textbooks we use in school relating to crown and bridge. So here I am just starting practice with other dentists about maybe seven or eight of us total who were in practice 10-20 years learning about how the jaw moves. Of course, I was curious. I wanted to understand.

At the same time, I was very interested in prevention so I joined the Academy of Preventive Dentistry. I read every book I can get hold of at that time. Middleman was very busy at that time and there were other people who were really very into this. I knew nutrition had something to do with this. When I first saw in practice patients would come in for five sessions just to learn about their diet and how to effectively intervene as far as cleaning their teeth.

DM: Let me stop you here because I want to point out a really important principle that you have really highlighted and that is you so brilliantly described your passion or your enthusiasm for reading what I would perceive maybe 99 people out of 100 would fall asleep at this textbook but you were just excited to learn more.

That’s great because what that does is a perfect illustration of what it takes to be successful in life. It doesn’t matter what the topic is, you have to identify what you’re passionate about. Once you find that then you can really engage and participate fully with all your gifts and really become a leader in the field, if not the entire world.

It’s a really important principle that I think has wide ranging applicability that I would just like to point out to people because many of us miss that. It’s really helping understand it if you can identify what you’re passionate about, you’re going to be so much happier and so much more successful.

DS: Yes, I feel that way too. This is obviously something that you have done.

DM: It’s true. My passion is technology and my passion is health so I have integrated them both together in a way that many people find useful. It could be anything. It could be coin collecting. It could be entomology, looking at bugs. It doesn’t matter what it is.

But whatever it is if you just commit yourself to it and engage in it, you’ll really be much happier. I’m sorry for the interruption but I thought it was an important point to make as we learn further about your journey.

DS: When I meet patients for consultations, I have no idea of how the initial consultations are going to go. I’m not concerned because I just follow what’s in front of me. It’s really wonderful. I was into this.

I had an aunt who influenced me I would say to a bit when I was younger. She said to me that I found the dentist in our area to help me and he’s a dentist’s dentist. I wanted to be the dentist’s dentist. I don’t know whether that was a result of just insecurity or
what maybe but I felt if I do everything as well as I can to help my patients as well as possible, that's all I need.

For me that wasn't necessarily the full essence of it because there is more to it and these are thing that you're addressing more and more when you speak to people. Let's call it that interpersonal relationship, the energetic connection, the autonomic connection that we can have with people where we don't have to follow an exact formula but there is that part of courage within us to look and see what's appropriate at that moment.

I believe my early years were more geared towards wanting to do everything technically as well as possible and I wasn't as tuned into that. I began working on that quite a bit. Shortly after I had been in practice, I had done a lot of human potential things and worked in that quite a bit. I did volunteer work. At the same time continuing with my practice looking at these things and also getting some interest in TMJ and other aspects of dentistry.

I really believe that the American Dental Association and the dental community was the basis of all science. At the same time I couldn't understand why certain things I had been learning as far as occlusion were not part of practice in dentistry.

I remember when I first started I had to educate people of why we needed to take complete x-rays at that time. It seemed like the information available was ahead of where the public had been and you would have to explain and justify rather than doing as best you can. I feel there is fine line in this whole thing where you can do as best you can but you need to really be connected with your patients.

DM: Can you describe how you progressed in your journey with really specializing in sleep apnea because I'm sure that's interesting.

DS: Out of that, I was taking courses with different people. Some of them came out of that S Training thing which I feel is very helpful at the time. And then I began to move into more spiritual things.

I had been taking some courses from an individual who was teaching courses both here – he was practicing management and human relations types of course. He would do it here and in Pittsburgh it was a grouping.

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He would meet with us individually but on a couple of occasions got us together. There were physicians, chiropractors, dentists in the courses. It was really a neat mix.

We were off on a retreat. One of my patients who is a chiropractor who was also taking the course – we were in this old hotel where they kept the Japanese diplomats during the Second World War. It was somewhere outside in Pennsylvania.
We're in the hallway getting ready for sleep and Katherine is wearing ear muffs. Katherine is a chiropractor. I said to Katherine, “Why are you wearing ear muffs?” “Well Roland snores.” Suddenly I saw Roland snores and Katherine is wearing ear muffs.

A couple of weeks later in one of the junk dental journals there was an article about snoring and about appliance. So immediately I looked at the person who wrote the article, found the name, called him up on the phone and said, I’m curious about this. He mentioned he was coming to Washington in a few months, why don’t I take a morning course with him.

His name was Tom Meade. He invented this appliance which was called the Snore Guard – boil and bite type of appliance. Initially it was not a boil and bite type of appliance but economics began to kick in and so he moved to boil and bite. That’s where I learned about snoring and sleep apnea.

That was the beginning about 1988. I have been doing TMJ. I had stopped using mercury fillings long before that but not because I had an idea that the American Dental Association was wrong about mercury I just thought they worked better. I still was a believer of these other things but as time moved on I began searching and finding that that wasn’t quite the case.

DM: Why don’t you discuss a little bit what sleep apnea is and what some of the traditional approaches for it are and perhaps I’ll comment so our listeners and viewers might have a better idea and understanding of what this is all about.

DS: I know you had a dentist on not that long ago from somewhere in the Washington area who was talking about it a bit. Apnea is a Greek word relating to breathe. Sleep apnea really is relating to the lack of breathe or limitation of breath or breathing during sleep. It’s a very simple way of looking at it.

There are different types of apnea described in the literature. They talk about central apnea and mixed apnea and obstructive apnea. These are medical labels which I at this point have concerns about because a label suddenly puts something in a very small box. You don’t look beyond that. The focus becomes very limited once you label it.

For simplicity right now, central apnea was relating to apnea where they couldn’t see it related to obstruction of the airway but they felt it had to do with the body’s initiating the breathing activity as far as it related to the diaphragm and the chest wall and bringing air in. It was not pulling air in where obstructive apnea is really relating to an obstruction of the airway which begins in the nose and ends in the lungs.

If we look at that in an airway that begins in the nose and ends in the lungs it’s relatively rigid until we get to the throat. The mouth joins that area and the throat area which the mouth will be the oral component of it. It joins in the throat and then they merge together
going down through the larynx and into the trachea etc. into the lungs and so forth and so on.

Anything that blocks that area would be looked at as obstructive and mixed apneas are when you see a combination of them. This is how the sleep profession looks at sleep apnea.

**DM**: How about many people in the country suffer with this? What types of percentages are we looking at or total numbers?

**DS**: I haven’t looked at statistics in awhile but I would say – I’m going to guess. It maybe 30, 40 or maybe 50 percent of people all in all but it appears you would see a larger percentage of people as we get older.

**DM**: So one out of two people have this.

**DS**: This is a guesstimate right now.

**DM**: I understand but it’s relatively common as opposed to uncommon. I mean just to put in general terms.

**DS**: But when we look at evolution and I remember in dental school (indiscernible 15:08) our mouths are getting smaller. You know the work of Weston Price. I know you studied it extensively. Weston Price showed the relationship of diet and how it affects mouths of people.

You look at the percentage of people in civilized societies seeing orthodontists and then when you add to it the lack of breastfeeding which generally is a positive way of expanding the size of the palette and moving the jaw further forward and having a larger mouth to hold the teeth. It’s not surprising in civilized society I would think. What’s your sense of it?

**DM**: I would agree with that because our food that we’re eating is just so perverted. Ninety percent of it is processed so that’s certainly going to push us in the wrong direction as clearly what Pryce found in his work nearly a hundred years ago.

His world travels is that these cultures engaged in choosing foods that were outside the natural realm. They had significant anatomical distortions in their jaws and their biology that really led to rapid tooth decay and changes in their structure. I think that it’s not surprising but you certainly don’t see about that in the common media.

**DS**: In addition to that, as you know, when you look at these cultures when a woman becomes pregnant the whole village, as I would look at it, tends to have a whole way of empowering that woman and the newborn baby to be healthy and that includes breastfeeding and things of that nature.
When you look at the development of these parts of the body and you look at breastfeeding and the tongue moving and sucking and the cheeks and the tongue what’s the balance between the lips and the cheeks on the outside and tongue in the inside guides the growth and the development of the jaws and the size and position of it, how deep the palate is and how shallow it is.

If the palate is broad and it’s wide then there is more room for breathing, the whole nasal area is improved, the turbin ate area. The nasal sinus areas are more developed to allow for that. I believe that’s all part of the culture and I believe Weston Price would have picked up on that too given the incredible researcher and individual he was.

**DM**: The bottom line is that we have large numbers of people who are challenged with this. I know you don’t particularly care for the categorization but I would guess that the majority of the people have some type obstructive or mixed sleep apnea.

Clearly, I think most people listening to this know that the common treatment for that is an instrument or a machine called the CPAP which creates this forceful pressure that mechanically opens up the airway but that no way, shape, or form addresses the cause of the problem although it may provide useful symptom relief. I’m wondering if you can comment on that and your perspective on it.

**DS**: That’s one of the points that I feel we can get to is origin of problems. When we look at this whole situation, the majority of apnea is obstructive apnea not central or mixed. When you look at that you’re looking at airway.

The body from my humble perspective is that the body functions according to the priority of CPR all the time. The body design is to keep us alive and it’s doing a great job of that. It’s functioning all from what we call dysfunction. It’s nothing more than the body functioning to keep us alive in a way that we find perhaps disturbing or it maybe doesn’t meet our pictures but it’s keeping us alive. I really see this as an extension of that.

The mouth is a part of the body that impacts the tongue and the tongue is the only part of the airway that’s actually moving constantly. As I speak with you, as you know, my tongue is moving in and out of my throat in different ways creating this miracle of speech.

In dental school I remember when you made dentures you were concerned about little shapes on the inside of the denture and the tissue behind the front teeth to help pronunciation and speech and how far apart the dentures were made and how wide the mouth is open, the room in the mouth. All that impacted speech.

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While I say it’s impacting the tongue – a person I have had the honor and privilege to study with for the last six years. His name is Bryan Robinson who is in Tacoma,
Washington. He looks at it at the primary role of functions as slowing speaking and breathing. Chewing is there but primarily it’s slowing speaking and breathing.

They discovered that there are lots of reflexes that occur in the mouth as the tongue is moving and it affects the posture and the position of the tongue and of course the jaw affects that and that’s affecting the airway breathing circulation. That’s the first priority for survival. I feel this is a Big Kahuna. You know how important breathing is Joe.

**DM**: Yeah, we can’t go too long without it or we suffer some consequences.

**DS**: (indiscernible 21:00) from learning to how to breath. I know that Andrew Weil even has an audiotape on breathing. We look back in history in culture or even read the Bible and look at breath and breathing.

That maybe I think is what the dentist is actually like it or not, we appear to affect that a lot because we happen to be responsible for that domain and dentistry as defined talks about the teeth, the gums, the maxillary facial structures and their impact on the rest of the body.

Sleep apnea actually brought me into a point where I was able to see what we worked with is impacting it all the time. Of course at night time it shows up as sleep apnea. We can look at how that occurs and I will be more than glad to move through that because I can bring us to a way we can experience what’s actually happening at night because of the way the tongue is functioning and how the body works to manage itself as the word you and I know so well and what we call homeostasis.

**DM**: The interesting component here though is that most people with sleep apnea would rarely think to consult with a dentist to address that. They typically go to a lung doctor, a pulmonologist to perform sleep studies and to do the analysis to confirm the diagnoses and then they’re off to a course of CPAP.

I like you to address that at some because there are going to be large numbers of people who are viewing this who do have this problem. We need to help them identify a course that they could progress through so that they can identify a qualified, knowledgeable, competent professional who can help them really identify the cause and then most importantly of course a solution.

**DS**: I feel that’s critical. Why don’t we move into that and then we can expand there into the whole play, the autonomic nervous system and how it affects everything you and I are so concerned about and all the people who are listening.

**DM**: Okay, let’s go.

**DS**: What happens at night time is of course the body is constantly taking care of things to make it work. I’m going to interject with some of the principles from oral systemic
balance or now called oral system biology which is going to be very familiar to you as we go through it.

The body must compensate. If the body is compensating to keep us alive and the literature shows this that it explains why you see increased forward head posture in people with apnea and it gets worse as the apnea gets worse because forward head posture helps compensate for room behind the back of the tongue.

It’s a compensation but you and I know how does it affect the rest of the body posture in general and how does it affect the impact on all the joints and all these knee and hip operations that aren’t associated with injury. A direct injury couldn’t possibly be associated with that posture the body demands in order to manage the airway. That’s of course while we’re awake but it doesn’t address something that I have not seen in the literature on sleep as to why people may toss and turn at night.

The medical literature actually looks at how breathing could be more effective with certain people when they are sleeping on their side or their stomach and the reason they discuss this which is true is that when you’re relaxed, if you’re sleeping on your back gravity itself is going to help the jaw to move further backwards and the tongue with it and the tongue can move further into the throat and obstruct it. That makes sense doesn’t it?

DM: It sure does.

DS: But they don’t explain when people are moving from side to side or moving. It’s possibly a way the body is attempting to allow more air to come into the throat. By the way, that is something anybody here can observe that on themselves. It’s so simple.

DM: Yeah, simple physics.

DS: All you need to do is say hello, swallow, and then as you’re breathing – most people don’t feel the air going in and out of our throat. But if anybody will just do that and then standup and move against a wall and have your heels touch the wall, have your butt touch the wall make sure the back of your shoulders are touching the wall and then the back of your head touching the wall, everything must touch the wall.

What this is analogous to would be laying somebody on their back on the floor. What we’re doing is looking at creating correct posture. Most of the time, some individuals, older individuals won’t be able to do it all. They’re so stooped over. That’s because they can’t breathe if they stand straight. Others who will be able to do that will notice their head maybe tipped up towards the ceiling a little bit.

And then as you do that what you do is keep your head against the wall, keep everything against the wall and move your head downward until your eyes are parallel with the horizon and then say hello, swallow and attempt to breathe. You’ll notice it’s very difficult to sleep, swallow, speak or breathe. Yet there has never been any study
doing this. It's not complex study. Anybody seeing it can see that the posture relationship to the airway and the ease of swallowing, speaking and breathing.

To me if this isn't looked at primarily by every physician including everybody looking at sleep what are you looking at? You're not honoring that body. A sleep physician will normally examine you and they'll examine you while you're sleeping and what you'll see during your sleeping is that tongue maybe dropping back at different times. It's going to show things physiologically which you would expect it to do.

They are able to measure heart rate and different effects of that. They'll measure movements of the jaw during sleep. What they call bruxism when you clench your teeth together or rub your teeth against one another and grind them backwards and forwards. They see correlations there.

They'll look at your blood oxygen. They'll look at how effortful your breathing is by measuring the movement of the chest walls. They measure stages of sleep. From this they'll make a diagnosis of whether you have sleep apnea or not or to what degree you have the sleep apnea.

DM: Let me just stop there. What is your impression with respect to that process? Do you believe that the person with symptoms of sleep apnea is well advised to go through that diagnostic step and have the sleep study performed for an official diagnosis?

DS: Absolutely. If you don't measure it how are you going to know how you're doing? You need to measure that.

DM: There are a number of cases in medicine where we don't do these studies. I don't think it's appropriate either and just treat symptomatically. I don't have the experience with sleep apnea so I'm just wondering as a practicing clinician what you find useful.

DS: First of all as a practicing clinician I would need to do that. As a dentist, I'm not licensed to treat medical conditions. However, the sleep apnea tends to be one of these areas they are allowing a dentist to treat under certain circumstances which would mean that a sleep study is done and a physician orders a recent sleep study and the diagnosis is in place.

Different dental state boards are weighing in different ways as to what they may want. In Virginia now they have said that you must have a referral from a physician as well as a sleep study report. Although the standard of care as setup by the medical profession and the dental profession that works with sleep apnea specifically the Academy of Dental Sleep medicine states that a referral is not necessary. It's as required in the absence of a sleep study.

Even if a patient is snoring, a dentist, in treating the snoring might be putting the patient in jeopardy if you don't know whether or not they have sleep apnea because sometimes in treating them and its rare but sometimes you may stop the snoring even though the
apnea persists so the patient has a sense that everything is fine while they're at higher risk. There are certain protocols for this. I believe a sleep study is helpful for sure and needed.

**DM:** Thanks for establishing that. What’s the best way for someone who is concerned that they may have this to have a sleep study performed? What’s the process that you would recommend?

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**DS:** First of all, the process I say is educate yourself as well as you can beforehand. All doctors aren’t the same. All dentists aren’t the same. This is an individual care so you would like to find somebody whose philosophy and their approach are going to be more in tune with you. First of all see what you can learn about these things from the beginning.

A family physician may know about it. They know more and more about it because it’s been promoted extensively. Back in the old days when I was very active in this Academy of Dental Sleep Medicine which I co-founded, I would attend the meetings at NIH once a year for sleep.

The organization was one of the organizations invited to these annual meetings at the Heart, Blood and Lung Institute. They would look at the concern about sleep apnea and getting the word out. They have been quite successful at this through different public media, advertising and getting it into medical schools so that the medical profession would know better and everybody would become more and more aware of it because they could see the correlations, how you could see the presence of sleep apnea with heart conditions, you can see it with high blood pressure, you can see it with diabetes. They were seeing how to track many, many conditions.

Obviously, if you can resolve the sleep apnea, it’s going to help a lot. Of course it’s helping breathing during sleep which is great. Later we can look into what about the rest of the day. It’s taken for granted but perhaps if you’re looking at around the clock you may be really dealing with something phenomenal.

The point is this is the process. You would either find your family physician and discuss it with them and they would refer you or if you’re searching online and find somebody like me you might contact me and I would refer you to a sleep physician who I have confidence in.

When I say that I mean that some sleep physicians follow the standards of care and they introduce patients through various interventions which include oral appliance therapy surgery and the use of CPAP. Some of them are one trick phony. It’s not for everybody. That’s the tendency. We all have a tendency to do things, to function in that way. It’s very good for the comfort zone but it’s not necessarily in the best interest of our patients.
There is a tendency in all of us to move into that. If people are interested in getting more information they’re going to have to do a little more work on their own which obviously you help prepare people for these things.

**DM:** I think that’s an important public health message here is that if you have sleep apnea and you have identified a sleep healthcare professional you want to make sure that they aren’t these one-trick pony. That CPAP isn’t their only recommendation before you go and consult with them and abide by their recommendations. Do your due diligence and make sure they’ve got the full armamentarium of the resources that are available to help you address this at the foundational level.

**DS:** Things are changing in the medical system as you know. From my perspective it’s imploding. I think we all know that and for good reasons. It’s doing it to itself but nonetheless things are happening in the sleep area.

Part of it is related to pressure from the fact that Medicare is going to be covering the oral appliance part of it although I don’t participate in any insurance of any type but that opens up doors. The pressure has been to serve more people because now that the word is out how do you diagnose them.

There are lots of entrepreneurs coming on the field. I was approached by a company that wanted me to dispense portable sleep diagnostic equipment to the patient. I have and I dispense it. We send it via computer via the internet to somebody somewhere else. It could be in California or wherever who will interpret the sleep study.

One way is a technician does and another is the physician reads over it and gives additional information on it or just signs off on it without even interviewing or examining the person. I’m a dentist. That’s not my philosophy at all.

The other approaches to how physicians are doing it and the in-home studies were not considered legitimate in the past but they’re moving into allowing them to be legitimate. It’s having an effect on the whole sleep community because many, many sleep centers have been built.

As the information was getting out in my area, I feel outside investment has come in and put big money into organizations opening up three, four, or five sleep centers where a sleep specialist is actually the employee. Who knows how it’s going to turn out in the next few years when this home monitoring comes into play. You don’t need the sleep center for as much but it seems to me like the Wild Wild West at some point right now.

**DM:** That’s unfortunately very common as we progress through these stages. I’m wondering if you could help the individuals listening now to understand what the next step is once they have got their diagnostic test performed and they have been really officially diagnosed with sleep apnea and most likely obstructive. What’s the next step in the process?
DS: There is one point I feel that’s very important that needs to come first is I believe that the patient should have a consultation with a specialist first.

DM: What type of specialist?

DS: Sleep specialist – a person who is going to interpret the sleep study and make the diagnosis. So they can ask the questions to the patients that relate to their sleep habits or sleep issues because obstructive sleep apnea is part of multiple issues during sleep. Of course I’m prejudiced. Looking at the tongue and the throat and the airway where I feel that that maybe the epicenter of where a lot of it’s coming from.

However, a lot of things are there. There are many conditions that overlap. The patient has no idea of what’s going on and some of these sleep centers like I just described would go into a family physician, “Listen don’t worry about your sleep apnea patients just find out if anybody feels they have sleep apnea just contact us, we’ll take care of everything. You don’t have to do a thing.”

The patient would come back to the office not having any idea of what’s going on. If they meet with the sleep physician they’re going to meet with him beforehand to discuss their habits, their issues that maybe relating to the sleep apnea which obesity is obviously something that’s one of them which I know you and I are concerned about and you really help people in dealing with.

But very often that apnea person can find it very difficult to even lose weight because of the struggle involving the apnea when the apnea is resolved the weight loss seems to kick in nicely. They work hand in hand. The point is they need to understand those things. And then after the sleep study they’ll meet with the sleep physician who’ll explain to them the results of the sleep study what it means and the implications and treatment.

I would say if you have a physician who wants to send you directly over to a sleep study tell them I don’t want to do it. I want a consultation with a sleep physician.

DM: That’s a good first step. After they have had their consultation what do they do after that?

DS: Then that’s going to look at treatment options and that would be discussed. Of course there is protocol and priorities within the sleep community regarding how you approach care.

The oral appliance approach has been recognized as part of the standard of care since 1995 or 1996. And then again, in an update on the standard of care regarding oral appliances in 2000-2001 it was updated. Initially, oral appliances were recommended potentially as a first line of approach for mild apnea but for moderate or severe apnea the CPAP should be considered first. And then if that’s not successful, surgery or an oral appliance should be considered.
After more research was done and available to evaluate, in 2001, the standard indicated that oral appliances could be looked at as a first sign of approach for mild and moderate sleep apnea. However for severe sleep apnea a CPAP should be considered first.

This is important to hear. If the patient is either unable or unwilling to utilize nasal CPAP then an oral appliance should be considered. That’s how it’s written. How third-party providers relate to this may vary depending on the third party provider. I would call them the insurance companies who are dealing with the money at the payment aspect of it.

DM: Which is an important issue.

DS: They do weigh in as far as a patient’s compensation.

DM: Absolutely. Is that the most recent recommendation the one you just quoted?

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DS: Yes it is.

DM: So that was about 10 years ago almost.

DS: Yeah, now that you mentioned it.

DM: Hopefully up for a revision of that at some point.

DS: Again, I must backtrack a little it could be 2005. I would have to look that up but that’s recent.

DM: According to the experts, the recognized conventional experts in the field that no ones going to dispute or have an argument with is that the oral appliances in non-serious cases should be considered as a first line alternative for a first line option?

DS: As a first line alternative. Again, the patient’s preference will have an impact if the patient falls into these categories because the sleep center is used to working with the CPAP. Some physicians who are working with this have a lot of experience working with oral appliances. Some of them have none at all and some of them have very limited experience.

Based on the knowledge and skills of the dentists working with the oral appliance, that the physician has observed, that whole experience can affect the perspective of the physician. It can affect how the physician looks at it. The patients’ perspective will have an impact and then the physician is going already have what I call an oral-ready listening regarding this.
But all in all, it allows the patient to look at influencing how they are cared for which is important because healthcare is how we care for our health. You and I are wonderful advisors to people and we’re resources but they are the ones who care for their health. As you and I know that’s how this can be utilized by working it.

**DM:** So for the obstructive sleep apnea, for those who are overweight which is probably the majority of people who have obstructive sleep apnea I would imagine…

**DS:** Not everytime.

**DM:** It’s not? Good, so I’m off. But for those who are overweight then clearly the solution is relatively straightforward. They have to really radically restrict fructose in their diet. They cannot have fructose. It is my view and in many other experts that that is the number one reason that people are obese. They have too much fructose. They got to do that and they’ve got to get their exercise and cut out the grains. So that’s pretty straightforward and we got tons of information on the site.

**DS:** All they need to do is listen to you.

**DM:** Well it’s a matter of listening and addressing the psychological variables. There are a lot of other components. It’s not necessarily easy but it’s simple. It’s a straightforward process but the more complex one in the obstructive sleep apnea is those who don’t have a weight issue which you just explained is the majority of people…

**DS:** Let me come back to that if you would.

**DM:** Sure.

**DS:** I don’t know the statistics but I have a heck of a lot of patients who come to me who are not heavy. Originally the sleep apnea patient was looked as a great big heavy person, a person maybe 300 or 400 lbs.

**DM:** Morbidly obese.

**DS:** Yeah. That was the original concept. That’s probably back in the late 80s and early 90s. As we see it now, we’re beginning to recognize we’re seeing more and more people who are not morbidly obese and many who are not obese who are relating to it because the fat is a factor. It does impact it but the primary issue is the tongue. The fact is the fat in the tissue is definitely a compounding factor that couples with it.

**DM:** So if you’re an individual who has been documented to have this, you’ve gone through this sleep study process, you’ve been officially diagnosed, you’re not overweight or that’s in the process of being addressed and then you’ve had your consultation with a sleep specialist and then it’s off to the dentist, the properly trained dentist like yourself and others who can really properly evaluate and recommend and
design an appliance. Can you go through that process of what that looks like and what your recommendations are?

**DS:** I need to point out that I may be considered a maverick in this area. I helped developed the original standards of care for treating patients with this. From my perspective I have not been popular in that area amongst my colleagues. I keep somewhat of a low profile in the organization now because I don’t want to upset people.

There are over a hundred appliances and when I wrote my book chapter on that on Fairbanks book…

**DM:** There is a hundred different types of appliances?

**DS:** There probably are. When I say different types, if you look all over the world there are probably a hundred different oral appliances most of which move the jaw forward. Some of which hold the tongue forward without moving the jaw forward in particular.

There is one out that depresses the tongue which I haven’t worked with but I have concerns about its impact on the body just because of how I feel it would impact the autonomic nervous system holding the tongue in a depressed state.

There are all these appliances. There are two different basic types that have been studied, the tongue retainer that holds that tongue forward as if you’re sticking your tongue out at somebody. It holds it in a soft rubber bulb where it’s able to keep it in that position and allow it to relax in that position. You can see how that would help keep the tongue out of the throat.

And then the mandibular repositioner that moves the jaw forward. It actually repositions the jaw in three dimensions. The main component of it is that forward movement of the jaw. Let’s say most often, is going to move the tongue forward because if you curl your tongue back and look in the mirror you’ll see that there is a piece of tissue called the frenum, the lingual frenulum or frenum that attaches it to the gum below the lower front teeth on the inside. Let’s think of a little rope holding the tongue to the front of the jaw when you move the jaw forward it’s going to pull the tongue with it.

If you look at mechanics, you could expect a different effect in the back of the throat because the tongue retainer I would expect to see it move the tongue forward. The tongue is shaped like an L in the mouth although you wouldn’t see that L part that’s in the neck area and you have a tongue retainer it’s going to straighten that L out a little bit as it’s extended out of the mouth. You’ll expect to see a little more room in that pop area. Where the other type of appliance that moves the jaw forward is pulling from the bottom, think of it as that vertical part of the tongue, that L and that’s going to move the whole thing forward. I’m kind of demonstrating – this as the mandibular repositioner and this is the tongue retainer.
They appear to impact the structure or the anatomy of the airway a little as differently. I
don’t know how I would know which is working better with somebody just looking at
them. I have no idea what’s happening at night time; how the different muscles…

The tongue by the way is not one muscle but as you know but other people may be
unaware of it’s made up of several different muscles. I believe there are five extrinsic
muscles and three intrinsic muscles. So it’s like seven muscles make up the tongue and
it’s attached to – the extrinsic ones are attached to different parts of the body one of
which I described below the lower front teeth. Back to this whole situation…where are
we? Help me out.

DM: You’re discussing the different appliances and the types that are available and their
function and how they impact sleeping.

DS: What we originally had developed in treatment was called trial procedures. I would
have a patient take home a generic type of tongue retaining device and spend some
nights with that and then I have another patient take home a generic very basic type of
mandibular repositioning device and have them go home with that and come back.

We have sleep blogs and other questionnaires to determine how is that working for
them. How effective is it, how ineffective is it. What are the positives and negatives? Are
these positives and negatives things that can be worked out with one of these particular
long term appliances? That’s how we would come to a conclusion as to what is the best
appliance for the person.

[----- 50:00 -----]

At this time, this is not generally practiced. There is a point in the protocol that says the
dentist will determine the appropriate appliance for the patient. What happens is the
patient comes in and usually in one visit the dentist examines them, takes moulds of the
teeth and comes up with the appliance by looking at the patient.

In my prejudiced mind that’s not very scientific in nature and it’s not very thorough
because there are many factors that make appliances different from one another. How
well they anchor to the teeth, how they move the jaw, how easily they move the jaw.
Can they easily be modified to move the jaw up and down so you open the mouth or
close the mouth to some degree? Can they be moved back and forth effectively? What
about the shape of them? Can the appliance itself be obstructing the tongue in some
way?

This has not been looked at but some of these appliances that move the jaw are
connected internally in the mouth, in the anterior third of the mouth. They’re connected
in the front of the mouth and the tip of the tongue can’t get past that while you’re
wearing it. Some of the appliances are relatively thick. The area between the teeth is
essentially filled in by the appliance so the tongue is being squished sideways. So at the
same time you’re moving the jaw forward and moving the tongue out but you’re counteracting it by the design of the appliance. Nothing has been done to study this.

I believe it’s because that most of the money going on in sleep apnea is being managed by the people who make appliances. A lot of the studies that have been done regarding appliances are subsidized by people who make them to show that they are effective so that they can be approved for utilization.

DM: That’s an interesting observation and I think really important for anyone with this problem to understand because it could significantly prejudice and bias the development and the research in this. As a result of that bias, how do you think that’s impacted and what are your recommendations on how to compensate for that?

DS: It’s doing the best you can with what you have to work with. The standard of care puts the whole thing in the dentist’s hands. Most dentists do not trial appliances. Most dentists don’t work with tongue retaining devices or even have any experience with it.

One thing I would do is I would want to know that the dentist has worked with and does work with tongue retaining devices and that they work with a multitude of appliances. I would also prefer to see somebody who is going to examine me and study the moulds of my teeth and things like that carefully in determining what they’re considering the best appliance for me.

The preference would be to do try trial procedures and observe the outcome together and work from there. I don’t think you’re going to find that in many offices at all. It’s not part of the standard of care.

DM: But that might be ideal. So it’s a functional based assessment and determined outcomes – you’re talking about a sleep record or just subjective, the way they are feeling after they’re using the device.

DS: That’s another great point. To really determine whether the apnea is gone and you wouldn’t need to do a sleep study. However, there are other ways of seeing whether things are improving and they have been utilized for years that work in the majority of people. Most people with sleep apnea snore. If the snoring has stopped a hundred percent you can most often expect that the apnea is going to be greatly improved if not completely eliminated.

DM: That’s a simple one. How about another because there is a number of people who don’t snore?

DS: When you get an appliance that moves the jaw forward you need to find out how far forward. Realistically, you would like to know how best to make that appliance fit. In other words, forwards, backwards, up and down. What are you doing to that tongue space and what are you doing to the jaw position and how can you find a position that’s best suited for that patient to get the job done.
Something that's adjustable because our airway and our breathing isn't the same every night. If we have a stuffed up nose or an allergy and all kinds of issues at a particular time, you would expect to see the oral appliance needing to be in a different position and posturing and what have you to get the results done than on a night when everything is clear.

One of the points is that's something that dentists you're working with should be discussing with you and you should be looking at. If you're working with one that moves the jaw finding positions that are relevant to these different positions of the jaw.

A potential side effect of the appliances that move the jaw forward is that the jaw will continue in a forward position when the appliance isn't worn. Of course from a dental perspective that would be a concern based on what we are taught in dentistry that the teeth should be interdigitating.

From a health perspective a whole body perspective looking at all the implications of sleep apnea and issues of that sort the patient and the physician are going to say if the patient can get food down and they can swallow the food, they can get the food in there, they can chew it somehow, we don't care. We're looking at the patient's ability to breathe.

The dentist is always going to have you review and sign a release. In that it talks about changing in jaw position and if that occurs then that’s a point where the dentist is going to sit down with the patient and say, do you want to continue with this therapy or do you want to stop? There are ways we can attempt to reduce the rate of which that can occur or prevent it from happening but success is not high in that department.

There are some people who jaws may not move forward because of the way their teeth interdigitate. Most of us dentists who have been studying this for awhile are aware of patients who have a higher or lower probability of these side effects. This is another part of what you're looking at when you’re developing the appliance and working with the appliance, you and the patient.

DM: Terrific.

DS: In finding a dentist to work with you, again, I feel you want to educate yourself and see if you can find somebody who has a lot of experience and is going to really work with you at finding the appliance that’s most suitable for you.

DM: Once you've done that and you've got the appropriate appliance…

DS: Then you're going (indiscernible 57:33) how effective it is and they're going to want to as we’re talking about looking at how to find the best physician for that applicant or how to test it. Let’s say it’s a tongue retaining device and you were not looking even at a physician that will ultimately test it to make sure it's working.
The standard of care states that only a physician can do this because you’re making a
diagnosis. So the patient would return to the diagnosing physician or another physician
who can diagnose to determine that the apnea is in fact gone. And if it’s mild apnea, the
standard of care doesn’t necessarily require testing but they would still need to meet
with the physician for that.

What’s happened in my profession is that – as you know technology moves quicker
than organizations and protocols. Home testing devices have been developed and
different types of them over the years but the standard of care would not allow that per
diagnosis. A ripe person for that would be the dentist.

A lot of these companies who had portable in-home testing devices were coming to the
dental meetings and promoting the dentists purchase them and have the patient utilize
them to determine how well their appliance is working.

What they would do is they will take the device home from the dental office and utilize it
and then bring it back and then the dentist will plug in the information and the
interpretation will be there for the dentist.

In New Jersey, the dental board weighed in on that and said you can’t do that. You’re
really making a diagnosis. I always felt I wanted to work in harmony with the physicians
so I never got into that but I would work with other things, as we discussed for example
measuring snoring.

Again, technology is available for that. There are iPhone apps that will measure this.
You can go into the internet and go into Audacity and download free software if you’re
into that. I know you’re definitely comfortable with those things.

You can have your laptop hooked up just as we do here with the microphone and the
camera next to you bed or you could have digital recorder next to your bed and record
during the night. You can record the sound and visually see those eight hours. You can
see whether it’s a one solid line which would be silence or whenever there is noise you
can see the noise and when it is. The patient can do this every single night.

This allows the patient to have their health in their own hands by looking at it at that way
as far as measuring the snoring although you can use your spouse to give you feedback
but this is an objective way.

The patients could go online and purchase an oximeter which will measure blood
oxygen levels. There are places where you can get them for $129 to $149 that will hook
into the computer. There the patient is doing this for themselves so I as a dentist am not
going in and doing those things.
Very often when you have sleep apnea you’re going have a drop in the blood oxygen and that SpO2. When it drops to a certain level it indicates there is a problem. If that’s the case – it isn’t in all apnea people but generally it is then that’s another aid that a patient can use to objectively measure it rather than utilizing these home monitoring equipment which really makes a diagnosis.

Many dentists are using the home monitoring equipment right now and I guess will continue to do so but again who knows how it’s going to start out with the Wild Wild West concern and the flux.

**DM:** If the person has this appliance and is with a competent professional to help them go through the process of adjusting it, how long does that adjustment phase typically take before they are comfortable with it and they are able to see if it’s going to work or not?

**DS:** Most often they’re going to be comfortable with it after a week or two because they’re going to be able to get it fit well when you (indiscernible 1:02:02). But that’s the fitting process. The high trading which we call and one that moves the mandible in different positions can take some time depending on the appliance. Some appliances require that the patient come back to the dental office to have them reposition it. Some appliances allow the patient to do that.

But generally I like to give my patients anywhere from – I like three months time for most of my patients. I like them to be able to not only determine what’s best for them on a typical night but I want to know the good night and the bad night and really move through that process. That’s a pretty comfortable time.

**DM:** So three months is a good trial to see if that specific appliance is going to work or not. Would that be fair?

**DS:** Yes. When I say work, generally they are working. It’s how well it’s working. (indiscernible 1:03:09) is it going to effectively resolve the sleep apnea problem.

**DM:** You’ll reach a plateau within three months. You shouldn’t expect additional improvement after the three-month window.

**DS:** Unless you’re with other issues with the appliance which is requiring other factors. What we call that sweet spot.

**DM:** But for most people it will be that three month window. For the people that you’re seeing what percentages of people who come in are able to get relief after they have had an intervention with the appliance?

**DS:** Remember these people are filtered before they are sent to me. I have about a 90% success rate which I believe would be higher but some people have not continued treatment maybe for financial reasons. They may come back but some of them have
been through trial procedures. They have a trial appliance that I have custom made for them which often may stop the snoring completely. I’m losing some to that.

I would say in terms of people who are not able to affect an adequate change I would say it’s closer about 5%. Remember again that these most severe cases are already in the CPAP and they’re not coming in to see us.

**DM**: That segment of the population who does require CPAP who would be appropriately categorized as severe sleep apnea you’re not taking care of because the standards really require that they have that as intervention. Is that true?

**DS**: That’s true but there is another factor that weighs in. The compliance for the CPAP is more of an issue. Patients often find it difficult to work with and unwieldy. The more severe apnea patients are usually more highly motivated but even in that situation it’s not always getting the job done.

Now, there are cases where I have been able to work with an oral appliance and use it in conjunction with the CPAP to enable them to lower the pressure of the CPAP. That’s not common but that comes up from time to time with all of us. But there are other people who just cannot tolerate it.

I had done a paper several years ago where we’re looking at it and we saw that I believe about 25 to 30 percent of the people who are tested with the CPAP after the sleep study walk out that night saying they can’t handle it. We’re losing about 25 to 30 percent of the people just at their first attempt to work with it.

Over the next three to five years the remaining people who are using it, we are getting at 20 to 25 percent drop off from them. That’s maybe from six or eight or nine years ago that this information is coming from. They are ongoing improving CPAP as far as making it more user friendly but you can see even from that that there is a drop out rate and there are people with severe apnea who can’t tolerate it.

**DM**: It’s interesting to note that the vast majority of people will get some benefit from this and improve pretty dramatically. Once one has an appliance is this a life long commitment or by wearing it does that type of exercises that gradually retrain the jaw to this new position so that eventually you don’t require it.

**DS**: Wouldn’t that be great?

**DM**: I don’t know.

**DS**: It would. Unfortunately, it is not. Appliance in, working appliance out not working. So you’re married to the appliance once you get it. These appliances do have life spans. There is wear and tear on these appliances. Certain factors can influence the wear and tear to some degree.
The medical professional had called it durable medical equipment. I do have a beef about that because it has put it into another box but they are categorizing it because CPAP is durable medical equipment. Based on their standards of care every x number of years, they would replace durable medical equipment. Some insurance companies maybe two years, some three years. They have a life expectancy factor associated with them.

**DM**: It's interesting. The challenge I guess is that many of us had less than optimal nutritional exposures that produce this pathology of a non-optimal space that's in our airway that it causes this obstruction or leads to it. Certainly, that's independent of the weight. I mean, that's a separate issue but many of us have that.

Are there any other modalities that address it at a foundational level like cranial osteopathy or structural movement where they can mechanically – it's somewhat like braces in a way where you wear them for awhile and then the body readjusts and adapts and you have a new system to sort of reset the system to allow it to function at a higher level.

**DS**: Good questions. Absolutely different things can influence these things. The time they are able to have a major influence would be during growth and development of that child and an adult to some degree but mostly growth and development of that child. These interventions are for sure going to be helpful. What you're looking at is changing that whole structural relationship.

For sure you would want that relationship to be craniosacrally attuned to the whole system. You would want the area to be harmonious with ease of speaking, swallowing and breathing movement of the tongue. These would be goals. If you can diagnose the potential for this early – you can see it in a child. If a child has retreated jaw or any issue like that you know that's an issue.

[----- 1:10:00 -----]

ADD by the way to me is really impaired oral function. It's nothing more than a lot of adrenalin kicking in constantly to manage the airway. It's interesting to see that the incidence of ADD in children appears to be when there is a change in teeth. You have the full-sized tooth coming in but the jaws are not fully developed. Guess what's happening to the tongue, is it a little more crowded? Where does it go? Is it going to set off the alarm?

**DM**: It seems like it could.

**DS**: I know you can visualize it can't you? It's amazing. And the poor kid is given a stimulant. The stimulant doesn't have some of the affects of the adrenalin. The kid has that on-edge feeling because the adrenalin kicks in, it's a booster dose to save the day and then the child is feeling that on-edge feeling from that adrenaline in the system. Like when you look over the side of a cliff things like that. That does it also because that
creates a distraction that affects the balance in our mouth and let’s the tongue drop back.

So that poor ADD kid really is from my perspective has impaired oral function and likely has issues of apnea that have not been addressed. If you can look at a child even at two or three years old, even a year or two years old you can begin to see the relationship of the jaws and it’s not too early to go to a really progressive orthodontist.

There are dentists who are doing orthodontics who are very progressive. They can sometimes make a little mouthpiece that helps to influence the movement of the tongue and the movement of the mandible and development of the jaws so that child develops structures that are in harmony with ease of swallowing, speaking and breathing – that birthright we are all entitled to.

I would say early interceptive orthodontics by utilizing functional appliances. People who are aware of cranial sacral is definitely the way to help prevent this.

DM: If a person commits to optimizing their lifestyle, a really great exercise program, elimination of sugars, processed foods, eating high quality, whole, organic locally grown foods, optimized nutrition, exercise program, will that optimize facilitate any other variables or factors that may influence the ability to relieve the obstruction? Or in your experience it is not an issue because you’re not going to be able to change the anatomy?

DS: It will do it from the perspective of that adipose tissue, the fat.

DM: But other than that, if the person’s normal body weight has reasonable percentage of lean body mass then you’re not going to see a change from your experience?

DS: From my experience it’s structural. However, if you look at it and I know you can see this also, look at the situation where the body is constantly compensating throughout the day to manage the throat, to manage that airway breathing, circulation, to keep it where it needs to be.

If it constantly needs to go in sympathetic state to increase muscle tone doesn’t it need sugar? Isn’t that creating a greater need for the body to want sugar? Isn’t that going to make it more difficult for that individual to lose weight and to follow these things and not have these cravings if it’s constantly occurring and if you can change that you see that the body doesn’t need to have that need as much? It’s able to have a different state.

That’s probably most likely why I have seen many patients where we have treated the sleep apnea effectively and I’m trying to get them in to see me. I haven’t had a call from them in awhile. I want to make sure the appliance is working okay and it’s fitting right. I want to know the side effects and say, “Dr. Strauss, I don’t have sleep apnea anymore. I started exercising. I went on a diet. I’ve been doing it and it began working. I have lost a lot of weight. I’m better.”
It may or may not be, I suggest they still get a sleep study. When I was at Capital University and I had to do my mini-thesis for graduation it was on a patient with sleep apnea who we thought had eliminated going on a vegan diet and a good exercise program. The patient was down to his high school weight and he was really slim. He was doing the rebounding.

He went back to his ENT and the ENT spoke with him and said, you don't have sleep apnea. Actually, the paper was already submitted. After all that I suggested he go in for a sleep study when he went back to the sleep physician who did the sleep study gratis for me, he still did have apnea. It can have a profound influence but you want to check.

**DM:** So functionally, it wasn't impairing his lifestyle and he was a leading a healthier life and felt symptom free. I mean those are the barometers. It really doesn't matter in some ways what this diagnostic study shows unless it's reflecting something that one can't consciously perceive that may cause him some problems. Typically it would manifest itself in some type of symptom in their waking hours I would think.

**DS:** Some of the symptoms are showing up in other ways physiologically and as we're looking at the body. That gets back into the whole CPR and the autonomic nervous system and why some people are more active than others, you know, naturally more active than others.

It may be more related to what the adrenaline levels. I’m going to use that in general terms but what levels of adrenaline work for them to manage their throat and keep things in balance so their body is not threatened versus somebody else. What the work that's been done in oral systemic balance indicates and shows repeatedly and it's replicable.

It’s in the literature that posture is a factor, that clenching and grinding the teeth are a factor because when you're grinding your teeth you're moving your jaw forward. We find that when you deal with that issue fully the patient has no need – they’re not grinding they’re just not doing it.

A jaw-tongue reflex was studied in Japan and demonstrated clenching and grinding to help open the airway. It destroys the teeth. It relates to most of the TMJ problems. On the other hand, it keeps us alive.

The third part is the increased state of fight or flight ongoingly. You may see it in other ways and you know there are situations where you have an athlete who is at their peak suddenly dying of a heart attack. That’s pointing out that we need to look more.

If we’re willing to look more and see how is the autonomic nervous system working. What’s going on here day and night? How is the body needing to compensate? Is there ease of swallowing, speaking and breathing?
When you hook a patient up the heart rate variability and you work with an appliance and really take it to a point of balancing things. It’s amazing how you can see changes in the heart rate variability right there in real time. You can see changes in posture real time where they put an appliance – this is going into the more advanced work (oral systemic balance) – that’s been balanced and you’ll there half an inch or an inch and a half taller with it and they take it out and a minute later they posture is off again.

It’s amazing when you have people hooked up to a intensive care monitor and we have actually observed in managing the mouth to create ease of swallowing and speaking and breathing a patient who doesn’t have t-waves, have t-waves. I’m talking unfiltered EKG where it’s crisp and clear rather than filtered.

There is a lot going on but it’s just – the first year of dental school it’s just how the body is designed and works. I don’t see why it would be a mystery.

**DM:** Just as an aside, is Capital University still around?

**DS:** No, unfortunately it folded quite a few years ago. They could just not get enough funding. As you know, many people volunteered time – most volunteered all their time, sometimes they got some reimbursement for travel. People came from great distances to teach there but things change as you know.

**DM:** Sure that’s unfortunate. If people have this problem or challenge with sleep apnea and they have had the appropriate diagnostic evaluation and have been seen by a sleep specialist – obviously, their sleep specialist might know a qualified dentist in their area who has these options but can you give some criteria or guidelines for the individual seeking to identify a highly qualified competent dentist who can walk them through the process in identifying the right appliance for them and being able to optimally customize and fit it for them.

**DS:** With this you’ll need to go with the structure. It’s out there publicly and professionally what have you to get some input. The organization that I co-founded was originally called The Sleep Disorders Dental Society.

[----- 1:20:00 -----]

Then the name was changed. I won’t get into that but sometimes people need to find a way to just have some consultant be with them and go through the broiler plate. They came up with a new name. They called it the Academy of Dental Sleep Medicine which I felt confused it with dentists who put people to sleep to work on them but nonetheless it became the Academy of Dental Sleep Medicine. That organization is known. You can find them on through the web. It’s at [www.adsm.org](http://www.adsm.org). That is the organization that originally was co-founded to represent dentists with an interest in this.

To become a member all you need to do is pay your dues. They have annual meetings. They have educational meetings that are specific that are non-annual aside from that.
Of course the annual meetings have all types of course in them relating to sleep apnea and oral appliance therapy. That would be the first resource.

Then they have developed an examination for becoming what’s called a diplomat which means that you have demonstrated that you treated some people. That examination has become more and more rigorous as years have gone by.

One of the advantages of being a co-founder is you get a chance to write the questions for the initial examination. Of course we treated many, many people but a few of us didn’t have to take the original written one when we wrote it.

That of course has changed. It’s gotten much more extensive in nature in terms of what they’re asking and the number of cases you need to present and explain. It’s there to determine that the dentist has worked with sleep physicians and has been treating sleep apnea. It’s based to follow the standards of care of the Academy of Dental Sleep Medicine which I discussed a bit before. If you go up and go into their website you can go and find a dentist and it will list all the dentists who are members and will highlight those who are diplomats.

DM: That’s one resource, the AADSM. Are there other sources, other dentists who have an interest in this might be a member of? What other criteria would a person use to select one sat there are more than one in their area to identify the higher qualified one or the better more competent.

DS: Unfortunately, the AADSM, the way it’s setup right now is the only organization that’s I guess that’s officially recognized by the medical community and can provide the kind of information I just discussed.

There had been other groups that attempted and still have attempted to form their own organizations. Part of it was related to in-fighting at one time regarding specific dental appliances – somebody invented something. An appliance that wasn’t being utilized much by members of the Academy of Dental Sleep Medicine. He began working with a lot of the dentists who have TMJ practices and a lot of them adopted his particular appliance.

They have an organization however I’m not familiar with the name of that. I believe it has something to do with the – some organization of clinical sleep dentistry. Most of those members are also members of the Academy of Dental Sleep Medicine.

In addition to that given that many dentists invented appliances and as I mentioned a lot of the research is coming from the money they put out to do research to show that their appliances are working in one way or another.

Some of these groups are doing heavy duty marketing and they are attempting to form their own academies to attract dentists to them. There are dentists who have taken
courses from different appliance makers. One is SomnoMed, one is Tap. There may be a few others. They are attempting to promote things.

They had come to Academy of Dental Sleep Medicine meetings but as you know as far as business is concerned the more you can sell the better off you are. There is that aspect. Some dental labs are promoting making appliance, make money in your practice.

Dentists are – and there are tons of them, going ahead and calling up a lab and saying I want to make an appliance. They have a patient who is snoring or who says they have sleep apnea and they’ll go ahead and send moulds to the lab and sometimes they’ll provide them with a relationship for the jaws which is mandatory to be done a certain way and have them make an appliance.

More often that’s not successful because they haven’t learned enough to mind all their piece and cues. Some of the dentists will say I don’t want to be involved in this. It’s interrupting my patients. Let somebody else do it. Others will take further training and most likely join the academy or go to some courses.

**DM:** What the range of cost? I would imagine it might be like 1000, 2000 or 3000 dollars. If you could name maybe the top 5 or 10 devices that you’ve seen.

**DS:** I would rather tell you what I think is good or bad and the not good or bad. It’s not rocket science. My best patients who understand this most are engineers and mechanics. They can see things like that. I guess they don’t have any prejudice going into things.

The cost can vary quite a bit. Some of the cost has to do with fitting them and follow up. That’s something to be aware of. Where other appliances may not include fitting and follow. It’s kind of a murky area to know quite what the costs are.

But generally an appliance that’s being utilized long term – I’m not talking about a trial appliance – it could be as low as $1000. It’s called a Silent Night. It was originally just for snoring. Now I’m told they have an okay from the FDA for it to be used for long term use. It’s somewhat flimsy in design but it can be made to move the jaw to three different positions. They range from a thousand dollars for that including some fitting visits. That can vary give or take depending on the practitioner.

To others that can be $2000 to $3000. If you’re getting into really sophisticated work you could be getting into more than that, $4000 or $5000. That’s very, very seldom you’re going to get to that. You’re more often going to be in the mid-range where you’re going to be anywhere from 2000-3000 somewhere in those areas.

**DM:** You were going to mention the devices and their plusses and minuses.
DS: I may annoy some people. Let me just be generic about how I describe it. Given that a logic would dictate and this could be done with a study if a university would take it on or somebody who has the money to pay the people to tabulate these things, is that anything that's going to decrease the room for the tongue is going to be counterproductive with this because even if you’re moving the jaw forward why would you want to decrease room for the tongue in the mouth.

There is one appliance that when it's developed by somebody who is an expert on tongue areas but the connector part of the appliance, the adjustment part is in the palate. So it’s taking up room in the palate assuming that the tongue doesn’t need to go up to the top of the palate.

What we’ve learned in more advanced work that we’re involved or I’m involved fortunately and have the privilege to be involved in is the tongue often does need to go to there. Sometimes the tongue cannot get further forward into the mouth because the upper teeth are blocking it sometimes the lower teeth could be blocking the tongue from coming further forward. Sometimes both can be doing that. But very often it has to go into the palate. If you fill in part of the palate you can be obstructing the tongue.

Number 2, you would like something that’s going to allow the tongue to spread out and cover the bottom teeth. Ideally you would like the tongue to lie on top of the lower teeth and that the jaw is forward when it’s doing it all the better. Any appliance that’s going to allow the tongue to pit over the bottom teeth while it’s being worn is going to allow it to less potential impact of it pushing it further into the throat.

There are some appliances that are thicker inside and block the tongue because of the bulk of them. There are some appliances that connect to one another inside so the tongue cannot even get to the surface of the top of the lower teeth because of the way the appliance fits. Some appliances are connected to one another in the front section or towards the front section so the tongue is blocked coming forward.

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I would say if you want to get the most out of them, you probably want to minimize that. Some of these appliances that are doing these in spite of this still help treat sleep apnea because the movement in the jaw forward is enough or it can be moved forward enough to help the apnea in spite of this. I feel that if you’re looking for everything working for you, you want to take those things into consideration. Is that helpful?

DM: I think it’s helpful. Obviously there is more specifics we can go into but I think that’s a good broad generalization. If someone wanted to contact you for your services, where are you located at and how will they do that?

DS: I’m in Falls Church, Virginia. I would say go to my website. I write monthly articles regarding these things. I explain why I do what I do. My website is designed to bring
people to me who have a similar philosophy and we want to work together in partnership. To those who are looking for something else to not bring them to me.

**DM:** It’s a good discriminator. What’s the name of your website?

**DS:** It would be [www.AMStraussDDS.com](http://www.AMStraussDDS.com). It’s my first initial, my second initial, my last name and my dental degrees. I have another one. It’s OAT4me or another is OAT4you. The easiest one would be just to use my name and my dental degree.

**DM:** I thank you for sharing your information with us and helping provide some really solid guidelines for the many people who struggle with this issue.

**DS:** It’s my absolute pleasure to be able to do that. I thank you for inviting me on. I look forward to someday at some point where you can have the opportunity to on your own observe the greater potential of this around body effect as it relates to oral systemic balance. I know that some of your colleagues have been there and patients of Dietrich Klinghardt have had care and the results have been confounding and it’s incredible how it supports every single thing you’ve been doing, all us have been doing all our lives.

**DM:** Great. Maybe I’ll have a chance to do that someday.

**DS:** Thank you again.