Introduction to Burning Mouth Syndrome

end of the presentation answering your question. Imagine the frustration of having a continuous painful disorder that cannot be definitively diagnosed with any test or x-ray, interferes with eating, becomes progressively worse with time, has no known cause, and for which there is no highly effective treatment.

This is what patients with burning mouth syndrome deal with every day of their lives. And I didn't make this up. This from the California Dental Association Journal article in August 2006. I am a functional medicine and anti-aging and restorative medicine doctor.

And I've spent over the last decade, more than the past decade treating and researching this puzzling disorder. I found some solutions and I'm going to tell you how I got there.

We're going talk about how to know if you have burning mouth syndrome, what the evaluation should entail, and what treatment options are and the future looks like for you.

call this burning mouth syndrome solving the puzzle because right now it's a puzzle. We have some understanding of what burning mouse syndrome is, but there's lot that we still need to learn.

This is a testimonial that I got very early in my work as a functional medicine doctor. this is the woman who was a fitness professional and after being on our hormone restoration program, which she came to see me because she was having the typical perimenopause and menopausal symptoms of hot flashes, mood problems, weight gain, all the typically things that we see.

She left this testimonial on my website. she said, I've noticed increased muscle definition after two months on hormone program. I'm sleeping better. My burning tongue is not nearly as bad.

my mood swings are not as intense and I feel great. And honestly, I put this testimonial up and didn't think too much about the burning mouth part of it, but then I had people start to get in touch with me.

And so I went on a mission to try to figure out what was going on, what burning mouse syndrome is, why a hormone program would make it better, and what that means as far as our understanding and where to go in the future.

This is the definition from the International Headache Society. Now the international headache society doesn't just deal with headaches, it deals with all types of head, mouth and neck pain.

And their definition is that burning mouth syndrome is a burning sensation for which no dental or medical cause can be found. The International Journal of Oral Science said the patient with a complaint of a burning sensation in the oral mucosa, which is the lining, the name of the type of smooth lining in your mouth, presents one of most difficult challenges to the care professional.

So it's well recognized in medical and dental establishment that burning mouth presents a challenge. And this is another quote from that same article.

Most clinicians dread seeing the patient presenting with a primary complaint of burning pain. They dread saying, you, why is that? Why do they feel like that they don't have an effective solution.

And those of us that are care professionals, what we want is for people to feel better. When they do not feel, better, we feel we are not doing our jobs.

And so it ends up being really somewhat fearsome to face somebody and feel like you can't do anything for them and you know they're in distress. And these are some of the symptoms.

First and foremost, it's the same feeling in your mouth as if you drank something too hot and it burned your mouse, that it feels scalded. To be considered burning mouth syndrome by definition, it needs to be happening every day and be a deep burning sensation.

Symptoms and Diagnostic Criteria

Some people have the intensity of the pain constantly throughout the day. some people wake up in the morning and the pains not so bad and it gets worse through the.

I've talked to people whose only relief is when they're sleeping and they keep wanting to take naps all day because that's their only really from pain.

The intensity is considered moderate to severe, similar to a toothache. Well, toothaches are pretty severe pain, so we don't have a way of really measuring pain other than people telling us how bad it is, but generally in medicine, it's known that tooth ache is pretty sever pain.

Some people find that when they eat or drink, if feels better, other people will find it feels worse. For some people with burning mouth syndrome, their sleep is interfered with.

And like the example I told you about somebody I talked to this week, her only relief was when she slept. So it's really variable. Where does it happen?

Well, the most common thing I see happen is pain or scalded feeling that starts at the tip of the tongue. It ends up most often being in the front two thirds of tongue, The medical name is anterior or front.

We see it also on the hard palate, the front of the heart palate. I've had many people tell me that inside their lower lip, that shiny tissue called the mucosa, burns and often it's in more than one site.

And it very often travels over time. So it may start on the tip of the tongue and then it travels to one further back on tongue on one side, then may go to the other side.

It may to go the cheeks and it can go even further. I've talked to people and I had somebody contact me recently who said their eyes and their nose bothered them.

Where nasal passages are burning. all the way up into your eyes. Your eyes are burning and tearing. All the down into you lungs and bronchial tree is burning.

and even skin surfaces. So the example of the testimonial I gave you of a fitness professional that was the first person I encountered with this, she had burning on her back, on the, her shoulders and her upper back that came at the same time as her mouth was burning.

We know that this process, this burning can be, occur in many different places. And again, for the official definition is it needs to be present at least two hours a day, the burning.

It needs be over three months to considered a chronic pain syndrome, which is what burning mouth is, and not have any evident cause. So one of the things that we are challenged with doing as patients and also as physicians is to figure out if there's some other treatable cause that need to address that can give a person relief.

One of the discouraging things about burning mouth syndrome is it can take a very long time to diagnose. And people often see multiple, multiple specialists.

I had somebody tell me that she had burning for a year and was really depressed. She had a history of depression

previously. It got worse with the development of her burning tongue.

The tip of her tongue burns, her taste sensation is abnormal and we'll get into that. And she told me she had spent $12,000 on treatments that were unsuccessful.

I had somebody contact me in regards to this webinar who said, I've seen every kind of doctor you can imagine from A to Z. And when I got so discouraged and felt like I couldn't stand the pain anymore, they admitted me to a psych hospital for seven days.

So didn't help my pain and it was a humiliating experience. We know that patients go from doctor to doctor, to make a diagnosis. I had one patient tell me, her primary care doctor said, well, I've got good news for you and bad news.

For you, the good new is I know what you've gotten. It's burning mouth syndrome. The bad new says I don't know to do to help you. And this is what patients confront over and over.

And so because it's in the mouth, many people go to see dentists, oral surgeons, your nose and throat specialists, wondering if it is an allergic problem, seeing allergy doctors, I'm seeing their usual family practice doctors and internal medicine and alternative health practitioners as well.

How does the disease go? Some people remember the month it happened. It was pretty sudden onset. They connected with something that's gone on in their lives. They had dental work done, they had a traumatic experience, They were on steroid hormones, a whole variety of different kind of precedents.

that they remember pretty specifically when it started. Other people start having burning. It feels like their tongue was scalded, not all the time. Then as time goes on, it becomes more distinct, more progressive, and it's there more of the times.

Half of patients have onset of pain and can't connect into anything. Like it says here, a number of people will relate it to dental work, to an illness or medication.

And so far, we really don't know of the connection that any of these things actually causes burning mouth. And we all certainly desire to try to figure out what caused it.

So we will often put it together with something else that happened at the time. I can tell you stress and trauma definitely are connected. There's been a lot of work done to see if dental work, if certain dental composites, People are allergic to them, and that really hasn't panned out as a reason for burning mouth syndrome.

And how does disease go? Well, symptoms usually go on for months or years. One of the articles that I read said that there is spontaneous and partial recovery in 20% of patients after six to seven years, It's not that it goes away, but the symptoms become more intermittent.

However, for the bulk of people, it doesn't usually get better on its own. We certainly don't see the people for whom it's gotten better, on it. So we see that people who have seen all the doctors from A to Z and taken months and years to get diagnosed and not found a solution.

There are other symptoms that are associated. 70% of people have altered taste perceptions, which can be really distressing. A feeling of a metallic taste in their mouth or salty taste, food doesn't taste right, a sensation of dry mouth.

And I write a Sensation of Dry Mouth because when studies have been done in burning mouth syndrome patients and saliva is actually measured, the saliva production is measured.

Causes, Misconceptions, and Pain Mechanisms

It's normal saliva production, but the feeling is that your mouth is dry and uncomfortable and difficult to eat, difficult process, food in your mouths, difficulty to swallow.

And we certainly see anxiety and depression and stress. I'll get into these as we go. So how do we make the diagnosis? So here's some things, if you're having a problem with pain in your mouth, burning on your tongue, here are some thing that you can take a look at, try to see if have.

Is there a white coating on you tongue? Thrush, which is also yeast infection of the tongue can give you a light or gray coating and there can be a lot of discomfort with that.

Are there little blisters, herpes or shingles infections? It can a give a a of pain and burning. and will show up as tiny blisters either on the tongue or inside the mouth or the lips and face.

Are there white or purplish gray patches? There is something called lichen planus, which is An autoimmune, partially auto immune cause also partly could be caused by a virus.

No one is completely sure what lichen planus is, but it creates pain in the mouth. So it's discrete little patches that might be, oh, the size of a diameter of pencil eraser or smaller.

And then is there low salivary flow, which is something that is hard to measure yourself, but dentists who specialize in these kinds of problems can evaluate salive very flow.

And I'll explain why that's an important distinction in a little while. You want to rule out that there is some going on in the mouth causing an irritation or burning.

So a dental prosthesis, a bridge, crown, something like that that rubbing and causing pain and contact hypersensitive have persensitivity to dental materials, which hasn't, in fact, been shown to be a cause of burning mouth syndrome.

But some people might possibly have that as a caused of irritation in their mouths. You want to look at whether you have allergies to foods, the flavorings, additives, fragrances that you're using on your body.

Is there anything caustic that your using? Are you eating a lot of acidic foods? Do you have a kind of chronic habit of biting your cheek? And gastrointestinal reflux.

So gastronomical reflox happens when stomach acid comes up your esophagus and sometimes can even come into the mouth. And not only do we see reflux coming into mouth, it also can go the back of the mouse, the pharynx, And a lot of times, this kind of reflux can be caused by problems during sleep with oxygenation and the structure of your mouth and throat, which causes problems with low oxygenations and a collapsed airway during asleep.

And with the alterations in the pressure between your mouse, your stomach and your lungs, that acidic stomach fluid gets pulled up into the back of the mouth and throat and can be a cause of burning.

And so you want to rule out whether you have a problem with gastrointestinal reflux, ref flux of acidic, stomach contents into, the, back, of your throat, and mouth, which will cause burning also.

There are other things that can cause burning. So vitamin deficiencies such as the B vitamins, vitamin B12 and zinc can cost nerves to malfunction. And we see that in people who have certain chronic illnesses where they have low B-vitamins.

Sjogren's is an autoimmune disorder with true dry mouth, and people with Sjoegren syndrome can have a burning tongue. And we try to distinguish, is it Sjorrens, auto immune, or is that burning mouth syndrome?

And one of the big distinguishing features is that people with Sjogren's have not only dry mouth, they have dry

eyes. So if you're somebody with dry as well as dry-mouth, this can be a distinguising factor in whether you have Sjoegren, which is autoimmune, requires somewhat different type of treatment, or burning mouth syndrome.

Diabetics are known for having neuropathy or a malfunction of their nerves. And it's possible, and it usually the nerves on the feet and the legs. It could also be hands.

and It also can end up showing up in people's mouths. So you want to rule out whether you're diabetic or pre-diabetic having problems with regulating blood sugar and blood sugars being too high.

And then medications can cause burning in the mouth. And there's one particular class called the ACE inhibitors, or angiotensin converting enzyme inhibitor, and they have names that end in P-R-I-L, like lisinopril and captopryl.

For some people, changing from this type of medication to another blood pressure medication will give some relief of burning. Let's talk about misconceptions, because for me, this has been one of the most concerning features in people suffering from Burning Mouth Syndrome, that it's all in your head.

that you're anxious, you are depressed. Some of the scientific articles actually said it was cancer phobia, fear of cancer that made people have burning in their mouth, that it with stress, it's a somatization disorder, meaning instead of feeling your feelings if you really sad you'll get a stomach ache.

And there are some people who have trouble expressing their feelings and they will get aches and pains as their way of saying that they're emotionally not feeling good.

But this certainly is not a somatization disorder. This has a physical basis. Does anxiety, depression, and stress play a role? For sure. but I'm going to tell you how.

There's definite physiologic reasons for how these things are tied together. First of all, any chronic pain syndrome causes depression. We know that. And if you compare people with burning mouth syndrome to age match controls, more than 50% of the burning-mouth people will have depression and anxiety.

But if look at other chronic-pain syndromes, you'll find that the rates of depression and anxiety are similar because living with chronic pain is really difficult.

And then there was an article that I honestly, I couldn't believe it when I read it. This article said that, and it basically is referring to women because of course that's mainly who has burning mouth syndrome.

People watching upsetting soap operas on TV is the reason why they're having burning mouse syndrome. And that actually was in a scientific article, believe it or not.

The problem with healthcare professionals is they assume just because we can't see anything and there's no testing for it, that it's got to be in your head.

That's wrong. So we're gonna talk about really what is burning mouth syndrome and what do we know about it currently? Before I do that, I wanna talk to you about different types of pain, acute pain and chronic pain because this comes into play.

Acute pain serves a number of functions, right? If you put your hand near a flame, you feel pain. And it's a signal to your body to withdraw your hands from that danger.

It helps us get out of danger. The other thing that it can do, if you twist your ankle, it hurts right when you twisted, and it keeps hurting for a while.

And what that does is tell us to take care of it and not put weight on it, not go about our everyday activities as if it didn't happen, because it needs to be immobilized for awhile so that can heal.

So acute pain serves us protective and healing functions. It keeps us alive. People that are born without pain sensations generally die much earlier than average age because they do not feel the pain that warns them that danger is there.

Chronic pain ends up being something where it's not related to what's just happened. If you have an acute pain, if you get a tiny cut on your finger, it hurts a little.

if You get it great big gash, It hurts A lot. And what happens with chronic pain is that you lose the relationship between the amount of damage to the tissue and the Amount of pain.

So you end up with the situation where a very small initial insult can end Up magnifying into a Very large pain It can be more intense than what the original insult would call for.

It could be over a larger area of, you know, the initial insult might've been the tip of your finger. Now your whole arm hurts. And eventually it takes on a life of its own.

So even though the initially insult is over, The pain keeps going. and these are the characteristic of chronic pain, which is what burning mouth syndrome is.

And pain is a two-way street. So we're aware of pain as a sign of danger, right? You put your hand in a burning flame, you withdraw it because it feels hot, and you keep yourself from getting hurt.

That's not the only thing that happens. The message from the tip of your finger that there's something super hot there that goes to your brain, then your brains pulls your hands back.

There also are, it's a 2-Way street, there are pain inhibiting messages that go from your brain to the tip of your finger. And that's going on all the time when we sense pain.

Pain goes up, pain dampening signals come down. When there's a mismatch and you don't get enough dampenign signals, all you get are pain sensations going up to your bring all time telling your break that there is a bad pain going.

The other way that pain is two-way street is in your nerves, there are always two processes going on. One is inflammation and it's part of telling your body to get out of danger and to rest and heal.

So inflammation is normal, healthy and protective as long as it doesn't run away with itself and become chronic. And some of the factors that the chemicals that are inflammatory factors in our nerves are things like histamine and something called CGRP.

And these are inflammatory irritants to nerves. On the other hand, we have a number of healing chemicals. BDNF, brain-derived neurotrophic factor, is very healing and calming to nerve.

and the innate repair receptor in nerves is very calming to nerves. So we have these two things going on all the time that are part of the balance of keeping us healthy so that we can get out of danger.

But when it becomes a chronic problem and when things aren't going properly, You don't, you have too much of the inflammation which causes pain and not enough of healing factors.

And so our therapy needs to be geared at calming the information and increasing the healing factor and how do we do that? I'll tell you in a little while, I've just finished talking about what BMS is.

So it's a chronic pain and it is a neuropathic pain. Neuropathy means a disease or disorder of nerves, which typically causes numbness, weakness, or pain, and for burning mouth, it means pain or burning.

pain pathway. So if you have a pinched nerve in your neck, and it's on the right side, you'll feel pain down your right

arm. With neuropathic pain, it can all of a sudden be on other side of your body or be lower down or higher up.

It starts to take on a life of its own and is not limited to what we see with an acute insult and acute injury. This is one really interesting lesson in burning mouth syndrome.

So dopamine is a neurochemical, it's a neurotransmitter, It's in our brains and it is our reward hormone. You've heard of dopamine and like social media or texting on your phone.

you get excited, you look forward to getting a new text and that releases dopamine. Dopamine is also what gives people initiative and drive to get things done, to achieve a goal.

Dopamines also lessens pain. And when they did specific dopamine brain scans in people with burning mouth syndrome, their scans looked like people's with Parkinson's disease.

What do we know about Parkinson? Parkinson is a low dopamine disease, The areas in the brain that are sensitive to dopamine become injured and resistant to dopamines and don't function well anymore.

And people end up with a tremor and difficulty walking. So those are different neurological consequences. But the fact is it's been proven that dopamine levels are low in people with burning mouth syndrome.

You have lost some of your pain dampening chemicals when your dopamine level goes down. And low dopamine also can cause depression and anxiety. So this is one of the physiologic connections between having pain and the depression in anxiety, so you not only are depressed and anxious because you're having painting, you can't do the things you wanna do in life and your life is severely impacted.

You actually have a physiologically reason which is low-dopamine that is occurring with burning mouth and with depression and anxiety as a cause of depression an anxiety.

It's not in your head. What else have studies shown? When they've done biopsies and looked at the tongues of people with burning mouth syndrome, the pain receptors and the nerve growth factors were different.

Who Gets Burning Mouth Syndrome

So BDNF, brain derived neurotrophic factor, that's a wonderful healing factor for nerves. There wasn't as much in burning mouth patients. And when they did specialized stains looking at the nerves in the tongue biopsy, they could see that their nerves were degenerated.

The nerves didn't look normal. Other MRI brain imaging showed changes in brain. So we do, in fact, these are more like research tools. We don't do biopsies in everybody with burning mouths.

But the fact is these are showing us definite reasons on testing why, you know, that something is going on that's not normal. And then this is a big clue.

Who gets BMS? So it's estimated that anywhere from less than a percent to up to 15% of the population has burning mouth syndrome. different parts of the world and different studies report different percentages of population.

We know that it tends to increase in frequency as people get older. And it occurs far more in women than it does in men. Depending on the study that you look at, it's anywhere from Three women to every man who gets it up to 20 women.

To every men who get burning mouth syndrome. And I have to say I've seen far more women than men and I would say it's probably in 10 or 20 to one ratio.

A large percentage of women who have had their ovaries removed surgically have oral pain. They lose their

hormones and they have pain in their mouth. The average age of getting burning mouth syndrome for women is age 60. If men have it, they usually get it at an older age.

It's very unusual to see burning mouse syndrome in women under age 30 or in men under 40. So it occurs later and less frequently for men. And this to me is the real clue to where things are.

90% of burning mouth syndrome occurs in perimenopausal and menopause women. Hormones play a role for sure. And rarely in women under 30, at age 30 you should be hormonally your optimal in life, somewhere between age 25 and 30. Your hormones should great.

That's not necessarily true in this modern day and age. We have toxins in the environment, we have stress, We don't have the greatest food supply, so we're lacking some micronutrients.

So I would say people are not as optimized as they could be between ages 25 to 30 but that's when we are functioning hormonal at our best. And as time goes on, and especially with the changes in menopause and we'll talk about that, we see the rise in burning in the mouth.

There are lots of protective hormones, protective against for your nerves and they decline with age. And this is the list of them. Thyroid hormone goes down with H, human growth hormone, goes with A, Osterone goes down with age.

DHEA, which is our energy and vitality hormone, by the time you're in your mid-40s, it's half of what it was when you were in you late 20s. Pregnenolone, very nerve protective, important for your memory.

It goes, down, Down, as we age, melatonin goes Down. Harder to go to sleep the older you get. And oxytocin, Which is known as the cuddle hormone goes Then the other thing that happens with menopause is that we lose our estrogen and progesterone, which are hugely protective.

The other things that happen with age, everything's going down, down or disappearing except for cortisol, our stress hormone. It goes up with the age and up stress.

Guess what? Cortisol damages nerves. We know that stress impacts the brain. We work a lot with patients with cognitive decline. Stress actually shrinks your brain by damaging nerves in your So we don't know the original triggering cause of burning mouth syndrome, like what made the nerves degenerate, but we certainly know many of the factors that could make it better and can make worse.

And we know stress plays a large role because going back to the initial patient I told you about, our fitness instructor, she got on her hormone restoration program.

Her burning tongue was way better. Couple of years later, she had a divorce. And with all the stress of the divorce, her burning tongue got worse again.

So we know that stress plays a role, cortisol plays role in damaging nerves and allowing this process to happen again, and I've seen that in more than one patient.

where they get their pain is greatly diminished, they're functioning pretty well, and then a very stressful event occurs and their paying comes back or increases.

It doesn't mean it's forever, stress declines, we adjust their hormones, so we work on stress reduction techniques, We work things that keep cortisol from doing as much damage as it does and we have supplements to do that and pain will generally diminish again.

So what you have in perimenopausal and menopause of women is what I call the perfect storm. There's been some nerve damage. We don't exactly know what the reason is, and that's something that we're still trying to figure out.

there's hormone decline and there is psychological stress. And even if you don' feel really stressed at menipause, what happens with your loss of estrogen is you lose a lot of your stress resilience.

And estrogen is an incredible buffer and anti-inflammatory and diminishes your stress response physiologically. And we see it in our patients who say, you know, I used to be able to juggle so many things, be so even tempered.

I could handle anything. and I went through menopause and now I can't do it. i get stressed and i can handle it and a lot of that is loss of estrogen.

So it's a combination of things that go on that I think come together and result in burning mouth syndrome. So we'll go on and talk about treatment now.

And I'm going to tell you about the things that are typically done. I'll tell about what I've seen work and not work. Then I will tell the innovative things we've been using at the Sklar Center.

So for neuropathic pain, for many people, whether it's diabetics or people who have had a back injury that's now converted to neuropic pain. Antidepressant and anti-seizure medications are very commonly given.

The typical antidepresants can be the modern ones like Prozac or can some of the original kind of first generation ones, like amitriptyline and nortriptaline.

The problems with amitriptyline and nortriptaline is one of their side effects is dry mouth. So if your mouth already feels like it's dry, that can be a problematic side effect.

Gabapentin is an anti-seizure medication that is given very frequently for neuropathic pain. It blocks some of the excitatory nerve chemicals or neurotransmitters that we think are pain producing.

The problem with gabapentin and actually most of these Prozac and amitriptyline is we have them seen them work very well in burning mouth patients or at least the people that are coming to see me have been on them and still are having a lot of pain.

The other problem with gabapentin is it can have a lot of side effects. It can make people feel like, and the VIMPAT also, which may be more successful in alleviating pain, but causes so much sedation and so many brain fog and difficulty thinking that you're trading off pain for not being able to function for another reason.

You're too sedated and foggy. And there have been studies done looking at the effectiveness of these things. They don't seem to work all that well for burning mouse syndrome, although they do work in some cases for some people.

So I don' discount them. But what I'm saying is the people that come to see us have already been on these. These are typically what's given by primary care doctor and internal medicine doctors and pain management specialists.

Topical clonazepam. So clonazepam is a sedative in the benzodiazepine family like Valium and Librium and Xanax. It seems to particularly work on the tongue and it does work pretty well for some people.

it directly calms the inflamed nerves on the surface of the tongue.

Hormones, Aging, and the Perfect Storm

And so the way it's recommended to be used is you take this little tablet, put it on your tongue, and let it melt for three to four minutes, moving it around in your mouth to the different areas that are the most painful.

And at the end of the three or four minutes, you spit out the residue. And what this does is make it less likely that you're going to build up tolerance and get addicted to it.

it helps because it's directly working on the nerves on a tongue. And one study showed that 40% of patients got some relief from this. It seemed to help not only with the pain, but with an altered taste, that abnormal metallic or salty taste sensation, and the sensation of dry mouth.

So it is certainly worth trying. Just about everybody who comes to see me is on mouth moisturizers of one kind or another. And Bioteen is a company that really promotes treatment for dry mouth.

They help somewhat. It certainly doesn't help the burning. And I looked at some of their products. Some have parabens in them, which are toxic. So you want to, if you're going to use their product, be sure and check to see if on the contents, it says that it has paraben or not and pick something that doesn' I had read about this topical capsaicin, and I recently had a patient who actually had used it.

And capsation is the chemical that makes chili peppers hot. Capsation does a couple of things. It lowers histamine, which I explained to you before is one of the inflammatory chemicals in nerves.

and it also lowers substance P, a chemical which causes pain. And what people do is use hot sauce or a capsaicin formula from a compounding pharmacy, put it on their tongues.

Initially, it burns like crazy, because it stimulates those capsation, which are now called the nulloid receptors, but it can end up blunting them after a period of time.

And this one study I saw anywhere from 20 up to 80% of people improved after years using capstation. A third of people can't tolerate it because it's too painful.

And the patient that I met who had used this and had her pain reduced had dry mouth as her still very significant symptom. So there are articles about the use of capsaicin and you'll see it in the literature.

Mass cells are white blood cells that come to an area of damage and release their chemicals, presumably to kill viruses or bacteria that are in the area.

And one of the things that they release is histamine, which I've mentioned before. There is a doctor named Dr. Lawrence Afrin who has a small series of four or six patients with burning mouse syndrome that he saw and prescribed histamines blockers.

Histamine blocker are things like Pepsid or famotidine, Claritin, which is an antihistamine for environmental allergies, also called the radidene, and also using something called Celebrex.

We tried this on some of our patients and it did not diminish their pain. So I'm not sure if he had a certain subset of patients with mast cell activation where these white blood cells would release histamine and cause their pain, but we did not find that it worked well in our patients.

Certainly using things like Pepsid and Claritin are not harmful, especially in the short run to try it out, so it might be worth a try. Low-level laser.

So this is a type of healing light that brings oxygen and blood flow to an area of damage. And it may be helpful for some patients. A lot of these things, there's like a study that shows benefit, and then there are a lot studies that don't.

But one of the studies showed that people who use the laser three times a week had a significant decrease in their pain and an improvement in the quality of life measures.

So they actually were able to function better in life. There also was a placebo group, and we always have to rule out, you know, what is the placebo effect and what's the effect of the lazer or the medication.

And the placebo group had some improvement, but the treatment group with the low-level laser actually improved

more. And then there were other studies that showed that pain got better, but quality of life didn't improve.

So this is something that is certainly not harmful to try and may work for some people. And what about supplements? So alpha lipoic acid is I think pretty well known to people who've been researching burning mouth who have it.

It's a supplement that has worked well for people with diabetic neuropathy. There was a group in Italy that did a number of studies showing benefits of using alpha lipoic acid for burning mouse syndrome.

But nobody else was able to reproduce the results of those studies. So it casts some doubt on it. It's an antioxidant. it has virtually no side effects and it's certainly worth trying.

This is a picture of a 300 milligram alpha lipoic acid. For people who want to try it, we recommend using 600 milligrams two or three times a day in order to give it a try and see if it works.

And then there's cognitive behavioral therapy, which is not a way of saying it's in your head, but it is a ways of trying to reframe negative thoughts and relieve stress and studies with burning mouth syndrome showed significantly decreased pain.

in people who underwent this kind of therapy. Some of it was short term, like they had three sessions of cognitive behavioral therapy, some people had longer term like 10 to 15 sessions.

And what it tells me is it points to the very significant effect of stress in burning mouse syndrome and other chronic pain conditions. So not saying it's in your head, but saying that stress releases a whole cascade of chemicals that worsens pain and irritates nerves.

So what about some newer hormones and cutting edge treatments? There are, in spite of the fact that 90% of people that have burning mouth syndrome are perimenopausal and menopauseal women, I have searched the literature for the last 40 years and there are maybe four or five studies in burning mouths looking at hormones.

And they all showed benefit. They didn't use bioidentical hormones, always like the ones that we use, but it seemed like almost regardless of what type of hormones estrogen and progesterone they use especially estrogen, it helped.

And so this is one study from the Journal of Oral Surgery and Orals Medicine and oral pathology from a long time ago, from 1989. And there was less depression, more ability to cope, and two thirds of the women experienced decreased mouth pain.

And so this really speaks to the benefits of hormones. Why is that? And we're going to get into why do hormones work? What do they do? There are a couple of classes of hormones.

One are the steroid hormones and all of the hormones listed on the left-hand side are steroidal hormones, so estrogen, progesterone, testosterone, DHEA, pregnenolone and vitamin D.

You might say, well, what's vitamin doing in there? But when you look at the chemical structure of vitamin-D, it in fact is a steroi and Vitamin D functions very much as a steroids hormone.

And I put this in here and mentioned that there's steroid hormones because people worry when they hear the term steroids. They think about steroidal abuse and they think of damaging things that happen say in the bodybuilding world.

with people abusing steroids and having organ damage and adverse consequences. So you can abuse anything and the steroids that are used in bodybuilding are generally synthetic steroids, and they do have a lot of side effects and we don't use those.

but I just wanna explain to you so you don't worry that using steroids is a bad thing. And steroids are not only made

in our ovaries and adrenal glands, steroids actually made the nerves in your brain and in other parts of your body and they're called neuro steroids and have tremendous healing and protective value.

And then there are the non-steroid hormones that also benefit burning mouth syndrome, thyroid, melatonin, and oxytocin. And we're gonna go through each of these and explain them.

So first we want to address, are hormones okay? Because everyone's heard about the Women's Health Initiative, which it's actually almost 20 years since the results came out, and it still makes big news when it hits the papers and somebody has revisited the women's health initiative and once again come up with, hormones are dangerous.

Well, they use the wrong hormones in that study. The company that made Premarin was sure that Premarine was going to be shown to a fabulous advantage and raise it to even more of a blockbuster drug than it was.

And that didn't happen. They use Provera, which is a synthetic progesterone that does, in fact, increase risk of breast cancer. It's still on the market.

I honestly don't know why, but we certainly don' t use it. And so we find that, and studies have backed this up, that if we use bioidentical hormones, meaning the same chemical structure as the hormones our own bodies make, we do not see an increase in breast cancer, uterine cancer.

Cardiovascular disease, in fact we see reduced rates of Alzheimer's. People who are, women who, are on hormones and menopause have half the rate of alzheimer's disease as women We see protection in the cardiovascular system and a number of other benefits that I won't go into right now.

But hormones are healing, protective, and pain relieving. And as I mentioned with estrogen, when we lose our estrogen we loose a huge anti-inflammatory impact on our bodies.

Estrogen is made in lots of places, primarily in our ovaries, but as I mentioned, it's also made our brains and our nerves. Why is estrogen made on a nerve?

What would it do there? It doesn't have anything to do with reproduction and having babies, because estrogen does a lot more than that. It has anti-inflammatory properties.

it calms the pain pathways, especially in the head and the face. And it reduces that pain-producing inflammation. It protects and regenerates nerves. So you have damaged nerves that are causing you pain.

You want to regenerate new healthy nerves, that will then function normally.

Conventional Treatments and Supplements

And estrogen helps with that regeneration. I picture nerves and nerve stem cells as like a little tiny seedling, and you put it in a pot with fertilizer or even better compost, you water it, give it sunlight, it grows up into a big beautiful plant.

That's what we want to see new little baby nerves do. Estrogen, I mentioned before, calms the stress response and lowers the release of cortisol, that very nerve-damaging hormone.

And what about progesterone? Progestorone, first of all, we know it's very brain calming. It helps with sleep, it helps mental focus, and helps anxiety.

And it is pain relieving and increases endorphin release. So you know what narcotic pain releavers are, right? Like oxycodone and allotted and coding.

We make our own internal pain relievers and they're called endorphins and progesterone and it's a very important metabolite breakdown product, allopregnanolone, protect nerves, calm pain and increase our natural pain-relieving

chemicals.

And what about testosterone? It's good for women as well as men and testosterone is an important pain-decreasing hormone. And in addition, for women, men have lots of good benefits from testosterone in terms of mood and energy, and women also get energy from testosterone.

But the one thing that's been found in women is that testosterone improves overall sense of wellbeing. Goodness knows, if you have chronic pain, you need something to improve your wellbeing, right?

This is pregnancy alone. We have in the past had pregnant alone at the score center as a supplement. It's available as the supplement, it is one of the very important neuro steroids made in nerves made your brain protects nerves.

What causes burning mouth syndrome? We don't know if it's some toxic assault, if its a viral or something like Lyme. We really don' know what gets it going, but we do know that these hormones protect your nerves against toxic assualt.

And again, pregnenolone is a chemical that is one of your body's own natural pain relievers. DHEA restores injured nerves and DHeA goes down when you get stressed.

So how you make your cortisol is DheA is an intermediate step. And if you're very stressed and you are making a lot of cortisol, you will be converting a lots of your D HeA into cortisol.

and having lower DHEA levels in your body. And we actually see this in our stress patients when we do their lab testing. If they've been through a really stressful time in life, their DheA is low.

DHeA restores injured nerves, so you lose some of your nerve restoration ability. And they have done studies on the saliva of people with burning mouth syndrome.

Their morning saliva has decreased DHEA. So in their mouth, they are not having as much DHA to help those nerves in the mouth as they should be. And vitamin D does similar things.

I hate to sound like a broken record, but reducing inflammation, protecting against toxins, and helping to make healing nerve factors. And what about thyroid?

So one of the kind of scientific trends for a while was to say we wouldn't call it burning mouth unless we ruled out thyroid problems. And this is a study done on 123 women who had burning-mouth syndrome and 123 woman who didn't have burning mouse syndrome.

And of the group with burning mouth syndrome, well, far more had low thyroid function, 58 compared to 13 in the groups without burning-mouth syndrome.

And when they gave thyroid treatment, two-thirds of symptoms resolved in women with Burning Mouth Syndrome. So there definitely is a thyroid connection.

What about melatonin? So we think of melotonin as being in the sleep hormone, and this little kitty is having a lovely nap, but melatonin has potent antioxidant and anti-inflammatory properties.

And the same as the other hormones, helps the healing of nerves. Oxytocin is one of our newer, holding a lot of promise. So oxytotin is the birth and nursing, breastfeeding hormone.

And I mean, how do we get through labor if we didn't have oxytocin? So there is growing evidence of oxy-tocins relieving pain associated with headaches, chronic back pain, irritable bowel syndrome, and other types of pain.

It's made in the hypothalamus, which is part of our brain that is our master hormone regulating gland. It then acts

on the hypothalamic pituitary adrenal axis, our stress axis.

And at times of stress or pain, the hypothalamus releases surges of oxytocin into the brain and out to the nerves and extremities. So oxy-tocine stimulates your own natural pain-killing receptors, The opioid.

We have opioid receptors in our brains and in Our endorphins that we make are natural pain relievers attached to those opioid receptors. And oxytocin stimulates the receptors and lowers pain.

So the spinal cord is the initial site of pain transmission from your tongue up to your brain. and oxytocin blocks the pain sensation in the spinal cord neurons.

That's where chronic pain gets amplified in your spinal chord. And so it has calming effects on that area of the spina cord and prevents that amplification or enlargement of pain that happens with chronic neuropathic pain.

It has calming effects on the amygdala, which is the fear center in the brain. So that's a key factor in negative emotions and reaction to pain. And oxytocin decreases the production of cortisol, Which then reduces symptoms related to stress and reduces pain So there are many ways in which oxy tosin helps and we are currently using it as a nasal spray.

because it can get directly into the brain, through your nose, and up into it. There's a very thin, bony, porous plate between your knows and your brain.

And so nasal sprays are a good way to get medications to the bring. We also use a medication called low-dose naltrexone. So naltrexon has been used for opioid overdose.

It will block the opioid receptor. So if somebody's had an overdose, the opioids they've overdosed with will not be able to attach to nerves and cause damage and depressed breathing and overdose and stopping breathing.

And eventually, you know, cutting off your oxygen and dying. It's been found that if you use naltrexone in very low doses, it doesn't block the opioid receptors, it does the exact opposite.

It stimulates them and it reduces pain and reduces inflammation as well. We use it a lot for autoimmune patients. And so it activates your natural pain receptors in your brain and in you nerves.

Its extremely safe. it has virtually no side effects. It can cause insomnia. It's usually a short-lived side effect. If you can wait it out for a week or two, it wears off.

Some people have very vivid dreams, too vivid, unpleasant. So we tell them to take it in the morning rather than at bedtime. But it certainly has no serious side effects.

It's considered experimental and off-label. It has not been developed by Big Pharma because they're not interested in developing it because it's really very cheap and they are not going to make a ton of money off of it.

So it is made by compounding pharmacies. we find that it's very helpful for what we call central pain disorders. So that is neuropathic pain that now no longer is in your tongue, it is also in you brain, which is where all neuopathic disorders are.

And so any time that a pain has gotten developed into a neuopathy pain, low dose naltrexone can be very healthful. It's a capsule and you take it at bedtime.

on the horizon are what are called peptides. And they have represented an amazing advance in restorative medicine. They're signaling molecules. they tell ourselves what to do.

What's really wonderful about peptide is they don't just dampen your inflammatory response across the board or upregulate this or that across help our poorly working cells thrive and become healthy and efficient again.

And what this means is more nourishing factors like BDNF getting produced, fewer of the inflammatory factors, and reducing pain on that pain highway I showed you about.

So peptides hold out tremendous promise for many, many chronic pain conditions, including burning mouth syndrome. And that's the latest and greatest on.

That so looking to the future, just to reiterate, it's not in your head, no matter what you've been told, there really is something going on We know what you're going through.

I've heard so many stories from so different people and I can appreciate the impact that this kind of pain has on your life. The problem is, you look okay.

Nobody sees anything wrong. Actually had a patient tell me she had had breast cancer and she went through radiation and chemotherapy and said, it is nothing compared to the burning mouth syndrome.

It was something that people knew what to do about. They treated me and it's over and done. And this is unending. We have a good success rate in people who are on our complete restoration program using all the things that I told you about, it kind of like juggling balls.

It's hormones and low dose naltrexone and oxytocin. About 75% success rating, meaning people's pain gets significantly diminished.

Hormone Therapy and Newer Approaches

Does it go away completely? Not usually. It's often there from time to time in some low level. We are not curing it. If you stop treatment, the burning comes back.

it's not purative, it doesn't end it, so I like people to understand that. but we are able to help people. I remember somebody telling me, I had Thanksgiving with my family for the first time in four years because before I couldn't eat anything and it was embarrassing and I didn't want to go and not be able eat this and eat that and have to explain what was going on.

And she said, had thanksgiving with family. So, you know, so much of our socializing goes on around food that if you are not able and you're limited and in pain when you eat, um, You tend to withdraw.

Any chronic pain conditions withdraw, but people withdraw and become isolated. But especially with burning mouth because the whole issue of eating and food is such a huge one.

know that our understanding of burning mouth is increasing all the time. And so, as I am constantly reading, I know those of you with burning-mouth syndrome are constantly on the internet searching.

I hear from you all of the times. Just know I'm constantly looking for the latest treatments so I can relieve your pain. We have a way for you to get a copy of the slideshow.

If you would like to be on our email list, let us know. if you'd like a consult about your burning mouth or another subject, you can contact our office.

And so if and put in your name, phone number, and email and let us know what you would like. Do you want the slideshow? Do want to be on our email list?

Or would you like a consult? Somebody will get back to you in the next few days. And I'm happy to take any questions. I have not looked at the chat. Let's see, I'll stop the share.

We have questions in chat, okay. Yeah, so somebody said, sinuses and throat as well as mouth, tongue and lips. I can relate to all of this and no, it's not in my head.

Mine was diagnosed and told, sorry, something you just have to live with. Somebody else said extreme dry mouth and eyes and BMS. So as I mentioned, if you have dry eyes, and dry mouths, you may want to get a look into whether you Let me just get the right view here.

You might want to look into whether you could have Sjogren's syndrome. And that can be diagnosed with blood testing. Let's see. This is somebody who said she has burning from the minute you open your eyes until you go to bed.

doesn't taste food, ears are ringing, headaches for five years. And it started when you had teeth removed and started with an upper and lower partial.

Then you've started allergy testing to ingredients in the partials. Regardless, it's also possible that hormones are playing a role. I don't know what your age is.

Harvon Jest, I was 47, and that certainly is the age. Perimenopause actually probably starts around age 35, goes on for about 15 years until actual menopausal, which is average age of 51. What about male menopus?

So men don't actually have an abrupt drop off in their hormones, but certainly men as they proceed through life have lower and lower testosterone levels.

And a testosterone, as I explained, is a great pain reliever. It's possible for men that low testosterone happening as, they get later in life, and this person, you're 52, your midlife, still your testosterone level is probably about half of what it was when you were young, may be helpful.

Somebody asked about surgeries such as radio ganglion block blockade. I don't have a lot of experience with that except for one patient who had surgery and it did not change their pain.

So I do not have wide knowledge about surgery for the pain Somebody wanted the number again, let's see. The text number, it's in the chat, 562-280- 2191. Let's say, could it be hereditary?

I have not heard of it being herditary. This person said their dad had Parkinson's. Parkinson is often caused by toxins, environmental toxins. So I would say, as far as I know, burning mouth is not hereditary.

Certain autoimmune diseases seem to have a genetic or herditary component. And Parkinson's does. I really don't know about burning mouths. Here's somebody who developed it postpartum.

Well, when you're post partum, you have the hormones of a menopausal woman. You have no estrogen and no progesterone. And if you're nursing, that continues on.

We see women whose, for example, vaginal lining looked like a 50- or 60-year-old woman because there is no estrogen and the vagina tissues become very thinned out.

So clear to us that there's lack of estrogen, and it's possible that that had triggered this. Is it connected to immunoglobulin? So immunoglybulins are our little fighting army that fights bacteria and viruses and people with low immunoglobulans are definitely more susceptible to infection.

I don't know if they're more acceptable to burning mouse syndrome. So I'm sorry, I can't answer that. Somebody who's 66 asked if estrogen is okay for all ages of senior women.

So my view of hormones is that you're never too old to start on hormones and particularly if it's for relief of a pain condition. The hormones that we give are safe.

They don't cause increased risk of blood clots. they don' cause breast cancer. I know the traditional medical establishment says that, you know, if you're over age 55 or 60, shouldn't be started on hormones.

But honestly, that does not have scientific basis. It's just kind of guessing. at what's okay or not okay. And that's true for a lot of the information that comes through about hormone use.

There isn't really a sound, a scientific basis. It's just, you know, doctors getting together and saying, oh, I don't think it seems like such a good idea, not because necessarily there has been found to be any harm.

So we do use hormones on women, like I said, regardless of age, Information on burning mouth. There's quite a bit of information on our website. If you go to scar center.com we have a couple of blogs and a discussion about treatment for burning mouse.

a discussion of peptides. So peptide are not over the counter. Peptides are a prescription. And right now peptidies are somewhat under attack by the Food and Drug Administration because pharmaceutical companies are trying to get a corner on that market.

And so the federal government keeps coming out with regulations. And even if the pharmacy is functioning within the regulations, they're still told they can't make peptides.

So they are getting a bit harder to find. But there are pharmacies that make peptides, we stay in touch with pharmaces that makes them and are able to get them.

I hope that answers your question about the peptide. heavy metal toxicity. There hasn't seemed to be a connection. Mercury has been studied and does not seem to necessarily be causative factor.

Certainly there's a whole issue of mercury and mercury toxicity. We see people with fatigue, we see with cognitive decline because of Mercury, but heavy metals have not so far been implicated in burning mouth.

And I say so because we have so much to learn about this. Yeah, somebody mentioned if you have dry mouth issues to get to a knowledgeable dentist, because dry mouths can lead to gum disease and tooth decay.

So you definitely need to use products so that that doesn't happen. We refer people to what are called biological or holistic dentists. And you can find one in your area by looking in the IAOMT, the International Association of Dentists, oral and medical toxicology, IOAMT.

Right, so somebody said that they took DHEA and alpha lipoic acid ordered from my office, but they never seemed to help. So we have a product called Burning Mouth Advanced Support that has alpha-lipoic-acid, D-H-E-A, and pregnenolone in it, along with vitamin B12.

I did a small study on it and about a third, a quarter to a 3rd of people got relief using the supplement. And we certainly have people that order it year after year because they're getting relief from it.

If you didn't get relief form those things, it may be that it wasn't sufficient amounts or that wasn' t the full complement of hormones. We know that people get better relief when they are on the Full Hormone Restoration Program.

which means becoming a patient at the Sklar Center because the other hormones, DHEA and pregnenolone are available as supplements, but the hormones are prescription.

Let's see, somebody had said it started after brushing their teeth with activated charcoal. So that's interesting because the activated charcoal absorbs toxins.

So I honestly can't think of like a physiologic connection of why that would have happened. Let's see, someone has had burning mouth condition for three years.

Can treatments, I guess, we've worked with people. It doesn't seem to matter how long you've had burning mouth syndrome. We've have people respond even who have had it for many years.

Can you just have burning lips and have a burning mouse? Absolutely. we see people with any combination of burning the tip of their tongue with their mouth, the cheek.

So yes, that's certainly possible that that could be your only sign. Let's see, and somebody had relief with alpha lipoic acid, R-lipoic at 600, but has hair loss.

I'm not sure why that would happen, because it's an antioxidant, which usually helps hair. It doesn't injure hair, so I'd want to know more about that.

And then biotin, is it OK to take with BMS? Absolutely, biotein. Just try to get the products that don't have the parabens because they're toxins. You don' want to be on.

We get exposed to a lot of toxins in the course of our everyday life.

Future Treatments and Clinical Results

Don't want get expose to toxins unnecessarily, especially putting things in your mouth. Parabens are in a lots of health and beauty aids. So they're in lotions, they are in cosmetics, and what you put on your skin gets absorbed.

And the same thing is true for biotin, it will get absorbed, so try to find the one that doesn't have parabens in it. Let's see, that looks like all of the…

questions so far. I'll wait a couple more minutes. And Dr. Sklar, I got a few that, um, this is Jessica. That was just to me. Um, so when someone was curious if Crohn's disease is a trigger.

Wow. Well, Crohan's diseases is an autoimmune disorder and it certainly creates stress. So I would say any significant illness that creates, stress could be a And the other one is, does hormone levels have anything to do with nerve pain in leg or heels?

And there are 65. Right. It's possible. And really, you want to know what the cause of the pain is. So if somebody has diabetic neuropathy, we kind of lead them more toward using lipoic acid and trying to get their blood sugars under control.

If it's pain radiating from the back, from a pinched nerve, it could be a neu Propathy and something like the peptides can be helpful. Any other questions, Jessica?

That's the thing that I just got, but a few more have been popped onto the whole group. Right, I see. What's first step I need to take to start to find relief working with our office?

If you let us know either through that text or call our Office, and our Offices number is 562-596-5196. We set you up with a consult and then we go from there so I can get some information.

After an initial consult, if it looks like we'll be able to help you, we set up what's called a comprehensive exam. We ask you to fill out a very extensive health history.

I spend an hour going over it with you learning the details of your situation. We decide what lab testing would be helpful to start sorting things out.

We have to get the lab-testing, and then we meet for a review of results. And at that point, I know a lot about you. I what your lab tests have shown, And I'm able to put together a plan to help you start getting relief.

So contacting my office or going through the text request, which, you know what? I can put that up again. Let's see. Jessica, can you read me more of the questions?

Because I realize when I have that up, I'm not able to see the chat unless I am just lame and not seeing it. Yeah,

no problem. Let me see here. So, grave disease, is that another trigger?

Graves disease is an autoimmune thyroid problem. Could it be a trigger? Like I said, anything that's a severe stress, it depends on how bad the Grave's was.

Did you have thyroid storm with huge high thyroid levels, which is extremely stressful. Certainly any auto immune can be trigger for inflammation other places in the body.

So I would say the combination of autoimmune inflammation and the stress that comes from having a significant auto immune disorder could be a trigger.

And then what about antidepressants? What can they try if antidespressant are not working? Right, if anti depressants are Well, there's the one called VIMPAT lacosamide, which has helped one patient I talked to.

That was the only person I've talked with that got relief from antidepressants. You would need to get a doctor to prescribe it. It's prescription. And if you're not getting relief, from anti-depressants, then you want to start looking at some of the other treatments like hormones, the oxytocin, and the low dose naltrexone and peptides.

There's also other like the cognitive behavioral therapy and the low level light. So those are some other options. Do we ship to Canada? I feel like I should know that.

We do. Yes, we do ship the Canada BMS advanced support to canada. Is there anything that someone can eat to help it be a mess? I can't say that there's any food that particularly helps.

But what I routinely see is that people can tolerate citrus or anything acidic. Tomatoes, citrus, grapefruits. Everybody seems to have a different set of foods that may bring them relief or not cause as much irritation.

So I can't, I don't really have a blanket dietary recommendation and usually people know, you know because it bothers you when you eat it and that's the best way to figure out whether you should be eating it or eating not eating.

Can you say the antidepressant that you mentioned again and spell it out for people that are asking to Oh, the VIMPAT. Sure. V-I-M-P-A-T. And then hypnotherapy.

What are your thoughts on hypnotherapy? I have not seen any studies on Hypnotherapy and Burning Mouth Syndrome, but I think hypno therapy can be helpful for pain and also for stress relief.

Great. That's everything that I see in the chat right now for questions. Anyone else? Great. Well, I thank everybody for coming. I appreciate your… I know it went on for a long time.

But I do really appreciate you staying on and listening. And I certainly hope that this has been helpful for you and can help lead you towards some resolution of your problems.

Dr. Sklar, real quick, sorry I missed one question. Anything to do with the previous spinal or neck injury? Can that trigger BMS? Have you seen any links to thoracic outlook syndrome?

I haven't seen a connection to either of those. Yeah, I'm sorry.

Audience Q&A and Next Steps

And then who can prescribe hormones? It depends on where you live, but In the US, certainly a functional medicine doctor is who you want to see. The endocrinologists, by and large, are very opposed to any mention of bioidentical hormones.

They don't want talk about it. they don' believe in them. So you really want get either an anti-aging specialist or a

Functional Medicine doctor. And we are currently seeing people throughout the country.

Since COVID has happened, we have lowered our requirement that somebody has to come here in person because travel is so difficult. So we're treating people from other states besides California without needing to be seen in-person.

Let's see, I finally figured out how to see the chat. Let see. Any other questions? There's specific type of peptides. There are a whole variety of peptides that are used in different combinations for neuropathic pain.

And somebody said, thank you so much. You're very grateful. The question about geographic tongue, you know, nobody knows exactly what causes geographic time.

So, and we had a patient recently with geographic tone. It seems to be possibly autoimmune. And she had extreme dry mouth and actually all of the things that we tried for her made her dry mouse so much worse that she couldn't tolerate being on anything long enough to see if it would work.

I don't know if we actually can apply this to people with geographic tongue. I was willing to use our autoimmune approaches to geographic tongues, and that may be helpful, but the last patient we had, the only person I tried to treat for geographic time was not successful.

Yes. Peptides are used for skin. It can help with wrinkles, but peptides also are helpful for pain, a whole variety of other uses. We use peptide for intestinal problems, pain disorders, chronic kidney disease, cardiac function problems, energy and stamina, sleep, ulcerative colitis.

So a whole variety of different things can be treated with peptides. Just the cosmetic industry has glommed onto peptide because they can't be helpful for helping skin and helping wrinkles.

Let's see, we've got some more questions. What if the pain sensation is in your gum area? Yes, it still can be burning now. Do we take insurance for our services?

So people who have PPO insurance can certainly use their insurance, for all the lab testing, or a lot of the Lab testing. We do not contract with insurance companies, but we provide you with billing slips so that you are able to send it into your insurance company and get some reimbursement.

Yes, so yes, have I heard about the hypothesis that burning tongue comes from dysfunction of the chorda tympani nerve, which is in charge of taste and pain inhibition?

Absolutely. And the corda timpani is a branch of one of important nerves in the head and head-and-face. The cordia tyimpani helps to inhibit pain. So if the cordsa is not working, You don't get pain inhibition, you just get unremitting pain signals getting sent to the brain.

And is there a hormonal relationship to that nerve's health? Absolutely. The hormone relationship applies to many, many nerves. We see it in cognition and brain function, we see in relief of mood problems, and we it with burning tongue and burning mouth.

Terrible taste in the morning. Oh, I think I don't know if you're the person that asked about it. I responded. It can be a periodontal problem with gum disease and bacteria that are unhealthy bacteria.

where food is fermenting in your stomach that shouldn't be fermentating there and creating bad gases and coming up into your mouth. So a holistic dentist and an intestinal evaluation would be in order.

Good. Well, it's almost 730. I appreciate everybody's engagement, staying on for so long and being with us to participate in this. And please contact us.

Again, our number is 562-596-5196. We hope to hear from you.