Salt’s Impact: What Your BP Needs Transcript

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Introduction and Guest Welcome

Welcome back to Reversing Hypertension Naturally. And we are so excited today to really have one of the forefathers of eating a healthy plant based diet and just really embracing lifestyle medicine in the early days before it even had a name.

Dr. Michael Klaper, how are you today? I'm just fine. Laurie, it's great to be with you and your viewers. Oh, thank you. And today, we really wanted to hone in on a topic that I think most of us understand, that salt can cause an issue.

But even still, I even get some pushback sometimes with people who are hypertensive and still should be aware of the risks. So I just wanted to kind of clarify some of the processes with you, if you wouldn't mind.

In particular when you think about, you know, salt in the hypertension link, how does excessive salt intake contribute to the development of hypertension?

Oh, my. That's a very important question. The answer can be a bit convoluted. And since we have time to speak at the summit, Laurie, you take a big, long windup as a former ballplayer here and so, first of all, sodium, it's amazing.

Adam and Risen Adam is one of the elements that makes up the universe, that makes up the core of the earth. And we have a very primordial relationship with sodium.

How Salt Raises Blood Pressure

The of course, its sister, Adam Chloride, makes up the the mildew that is the liquid aspect of our cells. All our chemistry takes place in a watery medium, but it's not pure water.

There's a lot of sodium in there as I said, it's a primordial relationship we have because where did this sodium come from? Well, of course, if you believe in evolution that life began in the sea when we developed into multi, multi cell organisms and then eventually made that epic trek onto land, we took the ocean with us and it's in the form of our blood circulation and in the the intracellular liquid that's in all our cells.

It's a salty solution that we live in, that we depend upon. And we've got a delicate relationship with it because of some of the remarkable properties it has a solution of electricity, a solution of sodium chloride happens to be able to convey the electrical current.

Well, that's wonderful because we are electrical creatures, our nerves of fire around electrical impulses, our muscles rely electrical impulses. And it's this sodium that's in our cells on either side of our cell membrane that allow this electrical phenomenon to happen.

And we've got a delicate relationship with sodium light like Goldilocks. You can't have it. Who couldn't have the soup too hot or too cold? We can't have too much sodium in our cells.

We can't have the sodium can't be too concentrated. We would go from the inside if that happened, but it can't be too low either. We would too much water would enter our cells and we would cease to function.

So we need to keep the sodium balance in our body and our blood in our cells and a fairly narrow range similar to the salinity of seawater, you know, and there knows no coincidence of that.

So over the eons, our body, what became our body, namely the organ known as kidneys, that all organs have, they become very adept at regulating how much sodium is in our blood.

It's the sort is the kidneys job largely to determine how much sodium to hold on to in our bloodstream, how much to let go of in the urine. And so the the are healthy kidneys are safeguards of the right amount of sodium in our bloodstream.

And they do a pretty good job of it because sodium out in the wild there, our ancient foraging days, a million years ago on the African who build their meal, we spent most of our days foraging for calories, digging up roots and tubers and energy and edible grasses and berries, etc., and occasional carcasses rotting in the sun, I'm sure.

But salt sodium was a fairly rare commodity. Not many plants have that much sodium in them. And and so we naturally ate a low sodium diet and their kidneys had no problem excreting these moderate amounts of sodium in their.

You're probably high blood pressure wasn't an issue to our ancient Paleolithic ancestor, but welcome to the 21st century. We now use salt profligate profligate of the food manufacture here.

Does that understand how seductive, salty foods can be? And and so now most any processed food, if you read the label, has some salt in and sodium chloride.

And whether it's the chips, the snack foods are obvious. The salty French fries at the fast food restaurant. But cheese, you can't make cheese without salt, exalting pretty bland stuff.

And so the huge amounts of dairy products and these five cheese go as the salt load and the restaurant meals you the spaghetti sauce in the Italian restaurant, the soy sauce in the Asian restaurant.

Tasty. But meanwhile, it adds to the level of salt that's coming in here. And now what are your kidneys do with with after a meal? Save all the money.

So sorry your blood is going up. Not a very good things far as your kidneys go. Why? Because again, the kidneys job is keep the salt concentration getting too high.

I don't want to take all your cells from the inside there. And by their I mean the salt would draw water out of the cells and our cells would shrivel while the sodium atoms pull water to them wherever they are, and you would get an intracellular dehydration.

Now, if the salt concentration gets too high. So the kidneys sense that salt concentration, blood is going up after a bag of extra large, extra large bag of fries and two slices of pepperoni pizza.

There's a big salt load in the bloodstream where the kidneys do well. The quickest way to to lower the salt concentration is to dilute it out. And so how does the kidneys do that?

Well, they retain water. A message goes actually from the brain. We also sense senses too much salt down to the kidneys and kidneys. Know that that that water you were going to excrete in the urine.

Hold on to it. We need to we need to dilute out this all this salt in the bloodstream, that messenger molecules called the anti diuretic hormone HGH. But it makes us retain water and it works and lowers the salt concentration. Yay!

We get live to eat another pretzel. But. But there's a price. Normally your body's pumping. Your heart's pump around about eight pints of blood. Well, now you're.

You're holding on to water that you would have excreted. Now you're now your heart's got to pump around nine pints of blood. And then the blood volume goes up.

When you retain all that water, we'll ask any plumber what any extra volume does to the pressure in the pipes. In any system there, you have more fluid and the pressure's going to go up.

And so this is the change. And there's a long answer to your question how does salt raise blood pressure? There's a number of mechanisms that basically the soil kinds of accreditation goes up, the kidneys retain water to dilute it out.

The extra volume is going to raise the the sodium going to raise the blood pressure. But there's other mechanism involving the level of muscle tone in the arteries.

We'll probably talk about those. But in general, salt makes you retain fluid raises blood pressure. It's fantastic in the pressure when you talk about pipes, asking a plumber, when we moved into this home, we had to re pipe our home.

It was it's a 50 year old home because the pressure from outside was coming in at such a high volume, at such a high rate, that it was destroying the pipes, the house causing little leaks.

Anyway, it's a very clear demonstration of how much too much pressure can be damaging. So yeah, absolutely. So that's fantastic. So the next question I'd have for you is, so what is salt sensitivity in the context of hypertension?

And how can one determine if they are actually salt sensitive? Right.

Salt Sensitivity and Blood Pressure Measurement

Well, we're talking about blood pressure and you don't want to walk around high pressure in the system. Why? Because after a while, it's hard on the pump.

It's hard on the heart and the heart starts to thicken, then eventually fail. So how sustain in high blood pressure is hard on the heart. You're congestive heart failure, but it's hard on the kidneys as well.

That high pressure slamming into those delicate filter membranes. And your kidneys, heartbeat after a heartbeat, eventually damages the kidney, damages the eyes.

You start getting hemorrhage in the eye. The system is not meant to run up to higher pressure like the like the pipes in Dr. Marbas's house, you exceed the pressure, you damage the system.

So this this is why we're concerned about it. The your question again, I guess the. Salt sensitivity, because it's. Also. More sensitive to salt and sexual assault and don't have like normotensive individual may or may not be able to take salt in and not see.

But I'm not sure if that's so true. But anyway, you tell me. Yes. No, she's right. She usually is those of us who do it out of ours in that and is that going to be any great surprise given any biological response in a group of human beings, including the human population?

You're going to get, as the statisticians tell us, is this glorious bell shaped curve and most people are going to be in the middle. Most people react with X amount of elevation, of blood pressure to a salt load, but some folks will react not at all, for they're there for any number of reasons.

Their their kidney function, their the tremendous elasticity of their of their arteries, of maybe their absorbed, whatever it is. Some people are at the tail of the bell shaped curve out there who don't react much at all.

But they are of course, their opposite number is there's a bunch of people who, even with just moderate or small amounts of sodium low, they get a very exaggerated response.

And they they are, first of all to milk salty water under pressure to 20 over 110 for hours. And this is not a good idea or they're just constantly due to their daily diet walking around with pressures ones 65 or 95, day after day after day and again.

Over time, this builds up and causes damage. So are you a hyper responder or not? Well, the only way to find out, of course. And we get around, I guess, the subject of accurate blood pressure measurement.

They are of all the things we do in medicine, we're measuring, blood pressure is one of the more inexact science is it seems what is done is a cuff is placed around the around a major artery, usually the peripheral artery in the upper arm and a stethoscope is placed on that artery as it emerges from a blood pressure cuff because it's inflated to a higher pressure than the pressure in that artery coming down the arm.

And then the pressure is slowly released and the person measuring pressure is listening to the first time in years they had heard that blood surge through under that cuff.

At that point, the pressure by definition in the arteries equal to whatever it was reading on the cuff there. That's the systolic pressure. That's the highest pressure that the heart is mustering to to make the blood move through the system.

This is how the blood pressure is measured. You then keep listening till the sound disappears. That's the second number as the diastolic pressure and this range ideally should be.

No, the first number should be no higher than one 2130 in that area. That's the actual numbers. When the arteries relax between beats, you want their pressure to drop down well below 1982, or preferably 70 to lower.

Yeah, that's true. That split second, the arteries get relaxed. So that's when the and what you're looking at these now these are the peak in the trough of the pressure wave that the arteries have to deal with as the heart is beating.

And you don't want them too high or too low for a reason. Dr. Morris's pipes, they're the sustain pressures that are consistently high are certainly going to set you up for, you know, damage to the arteries.

As far as measuring it properly, this really distorted, we are all told, when students are told the med school, before you check anybody's blood pressure, be sure they've been sitting in a chair quietly for five and 5 minutes.

Let their heart rate come down. Let those arteries relax and get a baseline. But they're so often that what happened, everybody's in a hurry in a doctor's office, a nurse or should sit you down further cuff on there are more 150 over 98 until you have high blood pressure and all blood pressures go off just with physical activity, just walking across the room, sit in a doctor's office, generally and generally, adrenaline is going to raise your blood pressure.

So the blood pressure is notoriously inaccurate in the doctor's office. The best are done at home with your own blood pressure cuff again after you've been sitting quietly, either in bed or a chair for five minute, think yourself out in a nice summer day in a pasture, the blue skies and butterflies for 5 minutes before you hit that button there, let their pressure come down and you'll get a fairly decent reading.

Do readings are different often in the morning, then in the late afternoon after a full day of activity there you might notice the circle pressure's higher or lower.

Note it just write them down. But these are the numbers that your doctor really is interested in. These are the more valid numbers for you, because as you read all through plant based diet, those arteries relax and the pressure comes down.

If you're on blood pressure, medication and maybe it's time to start decreasing them or stopping them, and you'll know that pressure because this is a go to, you know, you're standing up, you get lightheaded, your pressures, 70 over 40, pick up the phone and call your doctor's office and say, I'm getting lightheaded when I'm standing up.

And here's the last your numbers or do you think I might want to reduce my medication or maybe stop them? But this is how the process unfolds. So important.

Those accurate numbers are important to give to your doctor there. That's how to get the best numbers. They're perfect. Yeah, no, I agree. 100%. It's so important that they're monitoring at home so carefully and give very strict guidelines because not only do they do, but if someone else is eating the food that they're preparing, sometimes I call it positive collateral damage.

Basically, when people are eating these healthy foods and unbeknownst to them, that they're also going to get better need monitoring of their medication.

So it's really important the people around you, too, that are consuming these healthy foods. Which leads me to my next question. What are some of the recommendations for effectively reducing salt intake?

Like if someone is cooking or going out or traveling, like what are your suggestions for people who are in different circumstances? Yes. Well, as a recovering sort of holic myself, I've become very interested in this issue and I'm making an effort to entertain my tongue with non salty flavorings.

I love what umami flavorings they are. And but there's too much salt since too much salt. So what to do? I've become a big fan of squeezing lemon juice on my greens and my places where I wouldn't think long works on baked potatoes is sweet, but there is a very fun, strange places there.

So it's a C where lemon juice can. It can be entertaining. There's a whole world of balsamic vinegar. We've got quite a collection in our pantry, and they are they come in all flavors and shapes and sizes there.

So try an assortment of those those help to other things. There's, there are salt substitutes that have instead of sodium chloride, they are potassium chloride and they work.

And in some people don't like the aftertaste, some people find it really tasty. So you might want to check out some salt substitutes with the potassium chloride, but you can mix up your own if you get on the internet and put a homemade salt substitute recipe, though there's dozens and dozens of them using all these wonderful herbs black peppers and rainbow and time and all these things.

You put them in waves or coffee grinders and it turns into a lovely powder to sprinkle on your on your veggies there. So look up some of the recipes for homemade salt substitutes.

And then finally, I'm a big fan. I have no stock in your company. I wish I did, but there's a lot. One of my favorites is called Benson's Table Tasty.

It's nutritional yeast with some dry herbs, but it tastes salty, but it has very little sodium there.

Reducing Salt Intake in Daily Life

So I'm a big fan of Benson's. No, I know, I know. Make anybody go through your sales of their cover product. So these are things to do and you really make an effort.

And if you hold the restaurant eating to a minimum, if you have to do restaurant food, usually produce healthy, do the best you can and and enjoy the meal and then have us have an extra salad the next day.

Exactly. Exactly. So which actually got me to the salt substitute. So when you were mentioning the potassium chloride, how is that helpful? And, you know, is is how is the potassium sodium balance helpful?

For example, soy miso, even though it has some sodium, but it has more potassium, might be in potential. Okay. Substitute in small amounts. I don't know what what would you suggest.

Oh so much in there. Excellent question. Here. This primordial pairing of the sodium chloride that makes up table salt and makes up the milieu of our of ourselves and the dissolved salts.

And, well, there's another atom out in the wings here called potassium that has a similar relationship with chloride. Potassium chloride is and potassium is a very useful atom in our circulatory system.

Our muscle depends on normal potassium. All the relaxation of our of our artery walls depends on potassium and one of the nice things about a plant based diet, most plants are rich in potassium, but little extra potassium often is beneficial.

As far as lowering blood pressure, it does have a the property of relaxing the artery walls. And so it also makes for an interesting sub substitute instead of sodium chloride and classic cables.

So they pull out the sodium, put in the chloride of the potassium atom. And so now it's potassium chloride and it tastes fairly salty and and it gives you a little bit of potassium.

And also, again, when substituted for the sodium, you might have been eating on your popcorn or whatever what it is regular salt. So some potassium chloride is a very useful type of of sodium of salt, substitute.

And again, may have benefits actually in lowering your blood pressure a bit. But all of these are used in tiny amounts here and become noticed how little sodium you need to create a salty sensation.

And Dr. Mervis mentioned to me so I'm a big me so fan is fermented soybeans it's a paste that you can mix up into gravies and soups and sauces and I love the taste to me so but classic miso is fairly rich in sodium.

They've now been backing down, inching down the sodium content of many today's moderate measles. And now that some of them even have our potassium based miso and yeah, I welcome that.

Apparently, according to Dr. Greger Miso in general, there's something else in the soy paste that seems to prevent big rises in blood pressure, despite a bit of a sodium content there.

But again, you know, a tablespoon of miso once a week in a soup broth is probably not going to cause great, great risk for cardiovascular system. But if you can get the lower sodium version of it all, the better.

Fantastic. So because a lot of people switch over to these fancy sea salts and then they're still the high risk of high sodium as well. Correct. Now, the salt assault, even if it comes from the crystal caves in the Himalayas, is still salt.

Even actually salt is salt. At the end of the day, it's just this distress the same. So then when we speak to iodine, because, you know, iodine is a really important micronutrient and many in the developed world's eat table salt that was iodized, which helped with thyroid function.

So any recommendations to kind of go off a little bit of a of it. But we'll come back on to the salt here in a minute. But for iodine consumption and making sure people are getting what they need.

Yes, that's Barbara's touches on a a true fact of physiology in medical history and people who don't have enough iodine in their diet to develop goiter is in your thyroid gland is the thyroid is working overtime to produce thyroid hormone without enough iodine and the has very dramatic appearance to these folks.

And so you want to give your thyroid gland enough iodide? No question. Obviously, the ocean water is full of iodine and so the fish eaters get plenty by dying.

But really we are friends of the fishes and we'll let them off the hook. There. So where does the plan Peter get iodide should be in the soil to it's a soil or soil element and an organic farmer should be the ideal.

Like organic farmer is they enrich their soils with multi-user, etc. It should be plowing back seaweed back into the soils there and really keep their soils iodine rich.

There's other ways to get that into the soil, but it should be coming in supposedly root vegetables that take up soil

minerals. So carrots are onions and turnips and beets should, you know, should be good sources of iodine and healthy, you know, from healthy soils.

But might not be just commercial vegetables and grow iodine poor soil. You may need to look for other sources. Right. And so where else can you look for?

One places that whoever's mentioned is iodized salt.

Potassium, Miso, and Salt Substitutes

People were eating back in the 1920s and thirties. They were eating so little iodine containing foods, people getting a goiter. So they started adding iodine to table salt and it did take care of the that the goiter problem.

So and iodized salt is still around and it would play a useful role to in the life of a vegan who was looking for an idea and source. I think there's we'll come back to that as far as how to use iodine.

So there are other iodine sources, there are organic sea vegetables you can get. What common is that green vegetable in the in the Japanese restaurants.

The sale is there and I gather that on your super salad few times a week will we'll give you the iodine you need. What comes in other sea vegetable ever may is no issue as you can get these and you still come and throw them into a supercell a few times a week so you can get iodine that way if you're taking a vegan multivitamin.

And many of us are to ensure we get another zinc and vitamin D well, learn the label. Most of my 150 micrograms by date. And I think that's a that's a good place to get it as well.

So finally those other sources, the C vegetables in the in the the multivitamin mentioned. What about iodized salt? I'm all for it because it comes down to the issue of table salt and or salt at the table.

And I hear today in this in this low salt world and it's not true. And the reason people say, oh, we got rid of our slow triggers, got real, never salt or food.

Actually, that's the one place you've got control over the salt intake there at the Italian restaurant. Nothing you could do about it's already in the spaghetti salt, but at the table you can decide how much salt you should be cooking with it.

You can add so much salt in boiling water, you're going to taste it. But salt, if you're going to use it, should be added at the table because very little salt, it lands on the surface of the veggies.

So when you bite into the corn or potato, you get a big salty head on your tongue for very little actual sodium. Little salt crystals deliver the salty taste without without a teaspoon of salt being involved.

So I don't have a problem with the salt at the table if it's done in proper amounts. Like the toxicologist told us, the dose makes the poison and we're talking about a pinch.

Literally, you'll get your salt on your veggies. That's about an eighth of a teaspoon a little less. And make that extra and a pinch of your very pinch of salt on your on your veggies, breakfast, lunch, dinner, that 3/8 of a teaspoon of the general recommendation is, you know, one teaspoon is about 2500 milligrams sodium.

So it's less than that. But, you know, and that's as much as you want to use because all you would really need to use and that would give you about 50 micrograms of iodine depending on the actual salt.

So if you're going to use a pinch of salt, make it iodized. You can get iodized sea salt actually as well. You're a big sea salt and you get it tonight.

So, yes, if you're going to be using salt, hold it to a pinch, let it be iodized. And unless you've got runaway high blood pressure, if you're on three medications for blood pressure and it's still too thin over what to, don't be putting a pinch of salt in your food it at all good.

But if you get it, blood pressure isn't an issue for you. Hold it to a pinch. Or the older. Perfect. No, that makes complete sense. I have one of my newer patients this last week is on five over shrink and still control.

Should not be my. Heart rate so. Reduced that you had. To be new to the play based world and I'm really excited to see where she might go. But it was like she didn't even understand the medications, what they were for.

She's like, Well, the cardiologist prescribed them like, well, this is why and so break my heart. Right, just a few more questions, Dr. Clapper, and I really appreciate you staying with us and answering a few more questions.

So excuse me, when we speak to the amount of salt people should be consuming and educating the public, so what are some of the effective ways we can educate general public, our neighbors or our colleagues about the risk of high salt intake and its relation to hypertension?

Where where should we begin? Or maybe, you know, speak to your efforts to help educate young medical students about lifestyle medicine in a plant based diet, especially.

Oh, my, how do we educate society to change this course? I turning an ocean liner here because again, the fast food industry has to have been artistic in their ability to to seduce the public taste towards.

So I saw foods and again when your body is there buffalo really takes the salt that's loaded with it into the cheese the thick cheese pizza you don't taste the salt was loaded with it and we were coming to accept it as normal.

Iodine, Iodized Salt, and Sea Vegetables

And so it's quite a quite a habit to break. And of course, this is tied into the bigger issue. The truth is humanity and certainly the American public needs to, as individuals and as a society, make a big evolution of our diet to plant based foods, to a plant based food stream for every region you can imagine, it would clean our arteries and our guts and and reduce our chronic disease burden.

But it would we'd need so much less land to grow our food that the forest would come back. And as the trees grow, they take carbon dioxide out of the air, turn it into solid.

Would it reverse? Global warming is the only smoke, only tool. We have the most powerful tool we have to reverse global warming. The lights are flashing.

Humans want to survive as individuals and you want to survive as a species. Evolve your diet, your plant based ones. The era of animal eating is over, you know, that's the message that the humanity needs to hear.

That's what many of us in the plant based world are trying to convey. And I'm trying to get under the guise of to the young medical students, you want to heal your patients or you just want to treat their chronic disease, or you want to heal your patients, get them on a plant based diet, and you'll reverse the disease as you're spending all these hours treating here.

So I'm telling them for the sake of becoming better, more powerful physicians who can really heal disease, to educate themselves and adopt a plant based diet.

But I'm also doing it because I know it's a key, key passage that our our noble profession has to go through. We are the medical professors, major bottleneck preventing this this change to a plant based diet.

Our society, you know, doctors don't mention nutrition. We don't try. We don't talk about it. We don't know anything about it or learn about it. So nothing gets said at the visit when it's one, the treatment that could actually save our

patients and help to save their own lives.

They're free themselves in these diseases we're going to get would make medicine fun again to see these people get healthy or they would save their own medical practices.

But we really will silence the conspiracy of silence. No one says anything. So the patients remain obese and sick and doctors are very frustrated. And our society's continues down towards bankruptcy from for medical debt, when none of this has to be changed to a plant based diet is essential and it could be done.

What if every doctor at every visit at the end of his a by the way Joe by the way Mary has a plant based diet or I change to a plant based diet. Six months ago man I feel great.

How's your is going you want to see Mr. Smith, a plant based dietitian down the hall to talk about your diet? I'll be glad to arrange it for you. What if every doctor said that it would really change the course of medicine?

It would change the course of our society. So you're asking you about how do we get people to eat less salt dried together, be less animals, less left to move to plant based diet?

So the two answers converge. You're sorry to go off on this tangent, but you know I'm facing the same thing on a larger scale here as we both are. So what would it take, really, if it would take educating the public?

And I'll talk to read books like. Glenn the that food is food is climate by Glenn Mercer a little book, 60 pages. You can read it in 2 hours and it'll, you know, educate you on the issue.

I read a book called Comfortably Unaware by Richard Upton Lander, who makes it very clear that adopting a plant based diet is our only hope and our most powerful tool.

So educate yourself then, you know, make make your own change. But for change in your own diet, set a good example for the people around you. But then elect people who will involve God.

Got to break up the logjam in Congress through our young progressive legislator candidates. The farm bill is coming up. We don't want to give more hundreds of billions of dollars to animal industries that just keep the the pollution going.

So let's let's elect lawmakers to change the subsidies. Eliminate subsidies or help the broccoli farmers help help farmers and ranchers transition to some other use of their land.

You don't have to run cattle land, grow broccoli, grow fruit trees grow. Help govt pay them to let the forest come back to you and help these people transition.

It's all doable. But you're asking what would it take? Education, social transformation, legislation and and then do it and then get their huge marketing machine geared up.

What if you had sports celebrities and movie stars and. Oh, I went plant based six months ago in my dog bear with me and you know what?

Educating the Public and Medical Students

If all these glamorous movie stars and TV commercials and billboards, you know, you could change design. It's doable. All this is doable. So asking, you know, how can we get people to eat less salt?

You could do well, you could do a, you know, the salt interest wouldn't be happy, but you could start taking out billboards and TV commercials and again and he'd tell the doctors.

And there's been campaigns to educate doctors about the high salt, the risks of high salt. But what if every doctor

at every visits how's your salt intake years out?

Here's the low salt vegetables that you ought to be eating, etc. And then again, in public, you know, public campaigns, it could be done. And but, you know, buyer beware, caveat emptor in Utah, beware, caveat, Utah now eater beware.

There's hidden sodium in processed foods. You know, if it's if it comes in a package or box, it's probably got salt in it. The things you can identify, like growing in the garden, there's a tomato, there's cucumber.

They probably don't have a lot of salt, you know. So Whole Foods are always going to be an island of safety. You know, if you're if you're if the salt intake is an issue here, keep the food on your plate, too.

Recognizable vegetables, fruits that you can call by name and you'll probably be okay. Yeah. I always liked. There is. I can't I don't recall who actually came up with it, but the saying of if you can read the ingredients on a can in your grandmother, recognize the ingredients, you're probably okay.

But if not, we'll put it back. So you need to keep another guest. Yeah, I agree. That's a good one. If you need a chemistry Ph. D. to decipher exactly what's going on.

Right. Exactly. So I love to share further your work that you're doing with medical students. Can you tell us a little bit about it and how maybe people can get involved if they're interested?

Sure. The sad truth is they are screaming from us at every angle of medicine. But the powers that be just don't want to listen to it is if the vast majority of patients that we are seeing in the high schools and the clinics and private practice offices are not there due to some weird and wonderful infectious disease.

The majority of them are sitting in front of us overweight, hypertensive, diabetic after school rather than inflamed for what they're eating for the standard Western diet, they're pouring through their bloodstream every 4 hours, the bacon and eggs for breakfast and a cheeseburger for lunch and a fried chicken for dinner.

The ice cream for dessert, that's the toxic food stream that's causing all this inflammation and Organ dysfunction and you get these folks on a whole food plant based diet and they get leaner and healthier.

The diseases are worse, the inflammation subsides, their joints start working. It's a magical. And every doctor needs to know about this, especially every young doctor really needs to understand the power of plant based nutrition and.

I realize that there's an acupuncture point in the system there. If I can reach the medical students before pharmaco sclerosis sets into their brains and they think that drugs and surgery are the only treatment for these these illnesses, it's the food change that.

And I know Chang will say the patient's life and I'm thinking this is such an important, career changing message. Somebody should be telling the medical students that somebody should tell the manager.

And a little voice on my shoulders is about you die. And I realized that the best use of my talents at this point in my career is to go to the medical students and say, listen, there there's these diseases that high blood pressure, diabetes like these are not etiology unknown.

It's the food generally. There's other lifestyle issues, but it's largely the food. And so I give them the lecture I wish someone had given me 50 years ago called What I Wish I Learned in Medical School about nutrition.

It's on my website. And to give this message to them and tear down the curtain of etiology, unknown and empower them to give you the resources to educate themselves about how to become more aware of plant based nutrition once they get out of our medical school into practice, where they can practice medicine like they know it should be, should be practiced so I've been reaching the students with this message.

We've established a nonprofit initiative called Moving Medicine Forward that helps me deliver this better. This message to medical students across the country.

If people would like to learn more about what we're doing and probably support us, it takes money to run websites and by plane tickets, etc. I go to Movingmedforward.com Movingmedforward.com and as a reward for sitting through my discourse at so I will look forward to Dr. Marbas, the four page handout.

My healthy, healthy living, healthy body plan handout that I give to all my new patients about what to eat and how to live a healthy day there. And so just Dr. Marbas, to make that available to you.

But to help moving that forward, you'll understand what we're doing and we could sure use your help. So thanks for letting me talk about it. Yeah, no, I think that's fabulous.

I, I love that you're still passionate after all these years. You know, a lot of people would rather to go and sit on the beach and relax, but you're still making changes and still pushing forward.

And it's important that we all do and on all aspects of our careers. So we appreciate you. So thank you. Thank you. It's the least I can do for this profession.

You've been so wonderful to me as Felicia I over to our sacred calling here. So thanks for letting me get the word out. No, absolutely. We definitely appreciate it.

So thanks, everyone, for listening and we'll see you in the next conversation. Well.