# Heart Inflamed And Overworked? How To Restore Balance To Your Endothelium Transcript

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## Summit Introduction and Guest Welcome

Hey, everyone. Doctor Eric Linsky here. And welcome to the Heart Attack and Stroke Prevention and Recovery Summit. I'm at least thrilled to be part of this live, transforming event that has been carefully designed to give you and your loved ones the natural living tips that you need to enjoy a long and healthy life.

This is information your doctor will not be telling you about, so please clear away distractions and take lots of notes seriously. You'll not find this collection of practical, natural solutions anywhere else online.

From avoiding hidden toxins in your home that are damaging your heart to easy natural product swaps to simplifying your lifestyle habits, each expert will empower you with simple, money saving tips that put your heart health back in your hands.

And remember to keep this life changing knowledge at your fingertips. Be sure to grab the summit recordings and bonus materials for ongoing support in your journey to a heart healthy, abundant life.

And today, I'm thrilled to introduce you to a good friend and colleague of mine, Doctor Peter Khan. Doctor Khan supports and manages patients with chronic conditions using a comprehensive approach by merging the exciting advances on functional neurology and functional medicine.

Doctor Khan is a board certified in Integrative Medicine, functional medicine and Chiropractic neurology. He is the creator of Neuro Metabolic Integration, a science based program that identifies the root causes of autoimmune and other chronic conditions.

Over 6000 patients from across the country have come to seek out his holistic approach that is changing the lives of those suffering from chronic conditions.

Born in Taiwan and immigrated to America at the age of 13. Doctor Khan has deep appreciation of the eastern wisdom and Western advances in natural health care.

He believes in the God given ability of the body to heal and regulate itself, and you could follow his work at Ask Doctor khan.com. Well, let's get started. You're going to love this talk.

Well, Doctor Peter, thank you so much, my friend, for for hanging out with me today. Thank you so much for having me, Eric. It's always a pleasure to, have some conversations.

Well, I want to begin with the most important question that I think we've asked anyone yet. How's your pickleball game? It is not good. Not definitely not as good as yours. So, hey, we got to talk about.

I don't know if we could even do a little bit of the heart health benefits of pickleball, but, folks, Doctor Peter and I are part of, just a wonderful group of natural health influencers.

We get together every year. And he and I had an epic pickleball battle last year, and it was great.

## Vascular Endothelium as an Endocrine Organ

He's a tennis guy. I'm not. And so it was really kind of fun hanging out and doing that. But there's so many fun things that we could do to keep natural living, natural health exciting.

And, you know, ultimately, doc, what we're going to do today is we're going to explain vascular endothelial function, and we're going to make this more into a how to.

So that's my that's my challenge to me and you is we're going to get this awesome head knowledge. You're going to just bless us really just just download that to everyone listening and then really practical.

Okay. What can I do now. What are some good next steps. So so let let's begin. Talk about the vascular endothelium as an endocrine organ. And knowing that I have spoken to yet has discussed this.

So I'm really excited to learn with everyone right now. Awesome. Well, thank you for letting me share. And this is a really interesting topic to me because as a chiropractic neurologist, you know, sometimes I see people coming in with post stroke issues.

And really in reality, clinically speaking, we see a lot of people who have previous history of stroke. They have previous history of mini stroke that are only identify on MRI of the brain afterwards, and people may not even know that they had a mini stroke, except that they felt like one day they felt really brain foggy, or they had a bad headache and they just chalked it up to another bad day.

But sometimes these are blood vessel damages that can impact blood flow to the brain. So obviously this is the the stroke and cardiovascular disease, you know summit.

So that of the blood vessels is important here. Now the vascular endothelium right. Vascular means the blood flow and endothelium means the inner lining of the blood vessel.

Right. So in your blood vessel you have different layers. You have the most inner lining which is in direct contact with the blood. And then you have the you know, the middle layer and the outer layer.

So the inner layer is called the endothelium. Now this endothelium vascular endothelium is a single layer of lining cells or endothelial cells that basically are in direct contact with the blood.

Now this is important because this inner lining is not just simply a barrier between the blood and the tissue, but it also serves as an endocrine organ.

So what do we mean by endocrine organ. Well, an endocrine meaning something that your body releases certain chemicals that will have an impact on some other tissue distally or more distant.

Right. So it's not just acting locally, it's acting systemically. So the vascular endothelium has is now being considered an endocrine organ, which means that the vascular endothelium produces chemicals that actually help with bodily function outside of just the blood vessel itself.

So that's just so important to appreciate that. Now the function of the vascular endothelium, some of these function includes vessel dilation and vessel constriction which obviously controls blood pressure.

That's one is of main function. So this vascular endothelium actually fully actively control the constriction and dilation your blood vessel thereby impacting blood flow.

It also controls the flow of different nutrients and hormones and different blood cells in and out of the blood, the blood vessel. It also regulates blood flow through controlling the vascular tone and also directly it influence the inflammatory cells so that your immune system can actually get to the spots where it needs it, where it's needed to fight an infection.

So the vascular endothelium is more than just transporting blood. It does does a lot more than that nutrient transport. It controls your blood pressure, your perfusion, which is deliver of blood, therefore fuel to your working cells and then also your immune system as well.

Some of these other functions, including balancing electrolytes, balancing coagulation and then play a major role, as I said earlier in immune system response.

Now the vascular endothelium produces things called nitric oxide. Okay. Now these nitric oxide are gases that your body naturally produce. And there's different enzymes that produce different that produces nitric oxide.

Now oftentimes in and out there in a while not in in the literature. But also, you know, if somebody was to just Google it, they'll see different mention of different forms of nitric oxide enzymes.

And these will be nitric oxide synthase. There are three different isomers or three different types of nitric oxide synthase. There's the inducible nitric oxide synthase.

There's the endothelial nitric oxide synthase which is endothelium. Endothelial nitric oxide means they're produced in the vascular endothelium which is really important.

And then you have the neuronal nitric oxide synthase okay. Now these are enzymes that basically live in different places of your body. Neuronal means they live in nerve cells or brain.

The the the endothelial nitric oxide lives in your blood vessel. And then the inducible nitric oxide primarily are involved in white blood cells and immune function.

Now they all produce nitric oxide which is the gas. And this gas in the blood vessel has the impact of vessel dilation supporting blood flow and blood circulation, and actually has anti-inflammatory function as well.

So why are we talking about this nitric oxide. Well, it turns out this nitric oxide gas, the person who discovered it basically won the Nobel Prize for it.

That's such an important discovery that the the damage of your vascular endothelium can lead to damage of these nitric oxide synthase enzyme within your blood vessel that produces this nitric oxide gas.

And the damage of that will lead to a decrease in nitric oxide production and therefore become a a problem for you. Become a sort of a risk factor and predisposing factor for developing stroke, vascular dementia, heart disease, and so on and so forth.

So know that damage to the blood vessel is not just like, oh, your blood vessels busted or it just atherosclerosis.

## Why Endothelial Dysfunction Drives Heart Disease

But really what we're talking about here is some type of immune system function, some type of inflammatory function that's damaging the blood vessel, therefore damaging the capacity of your immune system or of your blood vessel to produce chemicals that are protective of the blood vessels themselves.

Doctor, there's a lot to unpack here. And one thing I'm concerned about is, as I'm looking through this and, folks, I want to share with you, just. If you're like me, you get a lot of your research and you get a lot of information online, whether it's to an influencer, you might Google things you probably do.

And with the advent of AI, the wonderful thing is I've been trying to do this more and more. Doctor Peters, just kind of show people here. Here's how I'm looking at things.

Here's how I'm utilizing AI, because right now, AI is our best and most faithful research assistant. That doesn't argue. It gives us all the information that we want within seconds.

And what you took, you and I hours and days to find. Sometimes to surmise we get it in minutes. And so I have a concern that I want to bring up to you in just a question, and I'm gonna go share my screen really quick here, and I want to walk you through a process that I'm walking or that I'm having right now with this whole thing. So, you go

and you go to John Hopkins Medicine, for example, and one of the premier institutions in the world.

And you look at the anatomy of the endocrine system and the endocrine system, according to conventional medicine, is the hypothalamus, the pineal body, the pituitary gland, thyroid, parathyroid, the thymus, adrenal pancreas, ovary, testes, no mention of anything that you just shared at all.

Endocrine system, National Cancer Institute same thing you look at this look at the glands of that make the endocrine system. But here's something that I want to point out.

Back in 2001, there was this study is the endothelium as a metabolic and endocrine organ and the vascular endothelium very well laid out. And this was well over 20 some years ago.

So this conversation about the vascular endothelium being an organ, I want to flesh that out for just a second here, doc, because it appears to me if if practitioners are trying to help patients especially prevent and or recover from heart attack and stroke, and if they're not acknowledging, if they're not acknowledging this fact that the vascular endothelium is an organ that has this systemic endocrine effect and endocrine meaning create homeostasis in the body through hormone balancing and the connection between the brain.

What detrimental effect are we seeing with doctors not recognizing this, with not nurses? Maybe not treating this the right way. I don't know if I'm asking that the right way, but I'm thinking root cause resolution.

I'm thinking doctors are missing something. If they're ignoring this. So can you give me a little bit of your feelings and thoughts about why this is like?

It sounds kind of sounds like you're coming from left field here with this vascular endothelium thing, but after just five seconds worth of I and me hanging out, I'm like, oh no, this is going on.

People can talk about this for 25, 30 years. So why? Yeah, that's a great question, Eric. Because when you think of endocrine, you automatically think of hormones, right?

So so when people have hormone problems, you go to the endocrinologist. And endocrinologists are typically one that, you know, handle hormonal problems.

So that could be insulin, adrenal hormones, thyroid hormones, whatever hormone you want to talk about. And so that's that's when you Google John Hopkins.

They're talking about just basic textbook information. Now when we say vascular endothelium is now considered an endocrine organ, it doesn't mean it's going to be lumped into the textbook where, hey, this is where a endocrinologist, when necessary, you know, manage a vascular endothelial dysfunction, right?

It just point to the fact that the blood vessel does more than just transporting blood. Now, if you if you and you know, and I'm glad you pull up research because some people might pull up vascular endothelium as an endocrine organ, they pull it up and look at Johns Hopkins or Mayo Clinic.

They're going to see no mention of vascular endothelium as an endocrine organ, meaning that they're not thinking in terms of it producing hormone in a classical sense.

But if you go to pop med and you type in vascular endothelium, endocrine just putting those three words, you're going to see 1700 plus citations. So this is not something as you say as Neal.

It's, you know, 20 some years of research and you ask why. That's a great question. The reason I'm pointing this out and bringing to light in the summit, because this is that, you know, stroke and cardiovascular disease summit is that your blood vessel gets damaged by inflammation and your blood vessel gets damaged by inflammation, that vascular endothelium gets inflamed and gets damage.

That's what leads to the stroke and the heart disease. So the punch line here is that lipophilic medicine has been treating heart disease and stroke from the perspective of statin drugs.

You know, all these medication polypharmacy of using medication to lower these markers, which are actually the end result of the disease process, not the genesis, the disease process, the genesis of the disease process is vascular endothelium dysfunction, whether it's caused by loss of nitric oxide production, whether it's caused by inflammation from various sources, which we can talk about.

And that's really the root cause that's driving this, right. Heart disease and stroke still being the number one. Number two, top killers of America. In America it's because of inflammation, not because of lack of cholesterol lowering drugs.

Yeah, I appreciate you mention this. And just for the fact that endocrinologists are not considering this, in my opinion, and I just pulled up a study from 1995, I mean, just flat and vascular endothelium as as an endocrine organ in 1995.

This has been in the conversation for over for nearly 30 years now, and it needs to be part of that. And so that's something to consider. Folks, if you do have some sort of hormone problem or you're seeing an endocrinologist discuss discuss the heart, discuss your blood, discuss.

Just see what they're open to, to see what they're looking at. Because you cannot just isolate one problem mutually exclusive from the other. And that's really what I'm hearing that you're saying, Doctor Peter here.

So, I mean, let's let's dive into this a little bit more, with, with specifically the inflammation problem and what we're where can we go with this? We're talking about heart disease.

We're talking about atherosclerosis here. We're talking about the potential risk of heart attack and stroke. Where does someone start? Well, we want to start as upstream as possible.

Right? So this is where, you know, some it's like this is great. So then you can start to hear things that you may not hear from a conventional perspective on mainstream media of, of actual scientific information.

Right. Because a lot of what you hear, you know, out there on and news or even at your doctor's office is they're trying to dumb it down. So much so, so a layperson will understand it.

But when we delma dumbed down so much, the meaning, the true meaning can be lost. So that's why this type of event is great. So what do people start? Well, as I mentioned earlier, vascular endothelium dysfunction.

Right. The fact that the inner lining the blood vessels gets damage is what really caused people to have these heart disease, stroke, vascular dementia and so forth.

So just so you know, like this blood vessel problem doesn't just cause heart disease, it causes brain problem as well because your brain is richly supplied with blood vessel.

If the blood vessel going to your brain is damaged either by some type of occlusion or stroke or something like that, then you're going to diminish blood flow to the brain.

You know, just like a lawn that doesn't get water to it is going to start to turn yellow. The glass will no longer be green if you don't get blood to a certain region of your brain, then that region of the brain is going to suffer and not grow as well.

And you can you literally see this on MRI of people with chronic illness that may have decreased brain volume, brain atrophy and so forth. So when we talk about blood vessel health, we're not just simply talking about heart attack, because some people will say, well, I don't have any family history of heart attack, so I'm totally fine, but it can impact brain function as well.

So just keep that in mind. So where do we start with this? As I said earlier, it starts with inflammation. So then what the heck causes the inflammation in the first place?

Well first we have to understand what inflammation is right? People always say well inflammation is just the root of all disease. Well it it is. But it doesn't mean inflammation is a bad thing right.

Because you need inflammation. It's a normal bodily process. Like the way our body is made by our creator is that everything serves a purpose. There's a time to be stressed.

There's a time to not be stressed as time for a stress response to occur. So you can make hormones and different things so you can get over the stress and there's a time for you to come back to homeostasis.

So inflammation itself is not a bad thing. Just to really put it succinctly, inflammation is the weapon of mass destruction used by the body to kill infections.

And just keep in mind that there's always some bug that's transiting through our system. So we have to always be on alert to kill things that might over that might otherwise overtake our body like an infection.

You know, bacteria, they want to grow more babies do. Right?

## Inflammation, Cholesterol, and Root Causes

So if you if you let it, then the bacteria doesn't keep reproducing more and more. And that bacteria is going to just take over and eat up all the food and invade all your tissues, and you could die.

So it's always a battle between your immune system and the environment. The germs. And even some of these germs are the germs, as are naturally occurring in your body.

Like your microbiome, your body's all your immune systems constantly trying to trim back the microbiome as well. Because if it doesn't, then the bugs just grow way too much.

And then what's stopping that from growing way too much into your system? So know that inflammation is the the tool, the weapon that the immune system used to kill bugs.

And that's all good. If you have a bug to kill, that's all good. If you have an infection, it's not good if the inflammation persists even after the bug is gone.

Now you have chronic inflammation. And the thing with with inflammation is that the way that your immune system uses inflammation to kill bugs is that inflammation?

Think of it as a blowtorch, right? If you if you see some bugs, you know, it's a bad example. You see some cockroaches, you use a blowtorch. Cockroach gone. Right. That's great.

But what if the cockroach is on your couch and use a blowtorch? Well, the cockroach is gone, but your couch is on fire, too, so your couch might be your tissue. Your organ.

And then if your couch is on fire, your organ and tissue is on fire, that's when you get tissue damage, right? That's the inflammation DTG and degeneration.

So inflammation is not good or bad. It has a purpose. But when it persists that's when there's a problem. Now this inflammation if it's happening in your vascular endothelium think of a blowtorch to your vascular endothelium.

Endothelium poof gone. And when they end up sealing gets damaged the result and process is there's got to be some kind of healing that happens after that.

Right. If your tissue gets damage, if your skin gets cut, you get a scab, you get a, you know, scar forming in your vascular endothelium. The same process occur, it gets damaged.

That damage going to get plugged up. That's your cholesterol. So cholesterol is really essentially used to heal up a wound that's happening inside your blood vessel to patch it up like a pothole.

But why don't you patch it up then? That cholesterol has a possibility of being reacted to by your immune system, and that can create damage. Like, for example, foam cells that are in your vascular endothelium that can lead to the onset of the atherosclerosis and the plaque formation.

So really the atherosclerosis, the plaque formation and then the result in either stroke or heart disease, heat stroke and heart disease is like ten steps down the line.

Prior to that, you have to build up prior to the buildup. You have vascular endothelium, inflammation or injury. Prior to that, you have something that's causing the inflammation to occur excessively, that's causing the tissue damage.

So if we just follow the train back, then that lead us ultimately to our lifestyle. Like what can we do on a daily basis that are either helping promoting vascular endothelium integrity or causing damage?

And one of the biggest one, I'm just going to, you know, let people know, like because there's so many different possible things and different people have different causes, right.

Not everybody has the same causes, although we all have something that's common because we all live in this common toxic soup. Right? The environment is toxic. It's polluted.

The food source is not great. You know, not everything's organic. So there's a lot of problem with the environment that we live in. So there's some commonality.

But everybody how they handle different toxins and different stressors is different. So this war therefore there's different manifestations of diseases presented to different people even within the same exposure to the same toxin.

But the top thing that I see people having problem with is really number one's blood sugar issue, okay, blood sugar issue is going to lead to vascular endothelial dysfunction.

And this is a reason why diabetes one of the the downstream the main downstream effect of diabetes. The end sequela of diabetes is heart disease is hypertension is retinopathy. Why?

Because the blood vessels that supply blood to the retina are these fine capillaries that gets inflamed and damage because the high blood sugar and therefore that's a vascular damage to the blood vessel to the retina, you get kidney damage. Why?

Because the blood vessels that supply blood to the kidney gets damaged. So and then type three diabetes, which is you know what? Alzheimer has been dubbed as type three diabetes because there's so much correlation between high blood sugar and Alzheimer disease that Alzheimer's being called types of the ID type three diabetes. Why?

Because the blood vessels that supply blood to the brain can get inflamed and damage, and you can get these vascular damage, and therefore you have these mini stroke that show up on MRI.

And then therefore people end up with neurodegeneration, Alzheimer that develop all the time. By the way, Alzheimer is one form of dementia. Under the umbrella of dementia you have Parkinson's, Alzheimer's and then vascular dementia, super nuclear palsy.

You have a whole bunch of different types of dementia. But vascular dementia behind Alzheimer's is one of the top reasons why someone will have dementia and neurodegenerative degeneration they age, and vascular dementia.

The number one reason is either hypertension or vascular endothelium dysfunction. And I will even go on to say that the vast the hypertension then can also lead to this vascular endothelium dysfunction.

The reason why blood high blood pressure is so bad. Because when your blood pressure is higher than normal on a consistent basis, you have this mechanical pounding of each heartbeat that's pounding the blood into that restricted space of your blood vessel.

And that eventually just wears down the blood vessel that causes damage in your blood vessels. So then the hypertension leads to the the damage and ilium that leads to the plaque.

Then atherosclerosis closes and on and on you go. So you can see how this is all kind of unified in a way. Right? There's some common things here that the the inflammation is driving the vascular endothelium damage.

Then that leads to nitric oxide production imbalances, which is a gas I regulate blood. Blood flow and blood pressure. So then you get the hypertension, you then you you get the the damage in the blood vessel, then you get the, the stroke and then you get the, the plaque buildup, you get the cholesterol.

That's all downstream. So we want to go as upstream as we can. And one of the, the most important thing, egregious things that we see in America is blood sugar problem.

Right. And then related to the blood sugar problem is, sedentary activity, which also lead to the blood sugar problem. Those two things are just A12 punch for vascular endothelial dysfunction.

What was first, I'm so glad you explained it that way. By the way, that was probably the best explanation I've ever heard that. And I've spoken to many a doctor over the years and read many a book.

The book that first introduced me to this was The Great Cholesterol Con. And I actually wrote a research paper that was published, and that was a great inspiration for me as I was looking at this concept.

And the reality is, when you look at what's happened in the historical timeline, when when fat got demonized as the source of high cholesterol and then cholesterol became the focus, sole focus and just high low, it's just numbers, right?

It's a number and the focus becomes a number. And by the way, has changed many a time. And every time the numbers change of high, low cholesterol, guess what happens?

More and more like millions of people are now indicated to get on standards. And that seems to be the game. I mean, when you look at it, it's hard not to be a conspiracy theorist like, oh, the American Heart Association changes the guidelines.

50 more people now are now qualified for statins. That makes interesting sense, right? Number one selling drug on the planet. And so when you start looking at what really is the root cause here, it's it's it's not necessarily a, quote high fat diet.

But here's where I want to make maybe shift and some practical things here doc. Because what happened is I know you know, guess what? Big food companies are coming out with low fat everything.

And yeah, we have we're going to now manufacture food that doesn't have, quote, fat, but it has what to replace it because it needs flavor, has sugar or I'll have artificial sugars or I'll have other artificial flavors that satisfied because if something doesn't have fat, it doesn't make us feel satiated.

And it doesn't satisfy the cravings and hunger that we have there. Got to put something else in the food. So people have been essentially poisoning themselves with, quote, manufactured low fat foods for 30 plus years because of this scenario.

And it's like, okay, how do we bring balance? Like I was hoping what you could do just for a quick minute and then and then we could shift in and maybe end the discussion with brain and really focus, because that's as a chiropractic neurologist, I know that's your specialty.

And maybe even dive into the gut brain scan connection for a second or two. But, how do you bring balance to this and, and how do you help people find peace with this conflicting message that we're getting?

Yeah. And I think that you brought a conflicting message, and I think, first I want to say something about cholesterol and and then, as I mentioned in this presentation, in this interview, that cholesterol is also not good or bad, just like inflammation is not good or bad, right?

It serves a purpose in the body. Now, if you have very high serum blood cholesterol readings, does that matter? Does that increase the risk for heart disease?

And the answer to that is yes it does. But again I think it is helpful to the conversation to know that why is a cholesterol increase in the first place, that the cholesterol may be increased as a response to inflammation because there's vascular endothelium injury or other type of inflammation, they require the body to use cholesterol to patch something up.

So your body might increase the production of endogenous endogenous cholesterol to for that purpose of healing. So so and then now if you if you have high cholesterol that cholesterol can still matter.

If that cholesterol is inflamed. Right. So there's a specific marker that can measure whether you have inflamed cholesterol or you have high cholesterol.

You also have inflammation markers. So you can have inflammation markers. And your goals I have inflamed a cholesterol markers. Both of those are going to make the cholesterol problem more insidious more problematic.

So I'm not saying that cholesterol numbers does not matter at all. It does matter. It's just what's causing it upstream. There are some people that still may need short term management or even long term management if they have a genetic issue.

And some people do, they have a genetic hypercholesterolemia where they do have higher cholesterol, and then not every single person with even genetic high cholesterol all have heart disease or die from a heart attack.

Some have genetic high cholesterol, and they never have a heart attack even without cholesterol. But some do. So it's a it's the literature is the proof is all there.

It's just what's causing what. That's the question right. And my, my, my idea is that we want to go as upstream as possible. That means that there may be a time and place to use cholesterol drugs, but most often time, if we can go as upstream as possible and work on a lifestyle, then that's going to give you a better long term outcome.

Because if you can address it at the root, then there may be less need for the colossal medication or taking a lower dose, or eventually not even needed.

So we hear people in my practice, at least people are able to get off the cholesterol medication all the time. That doesn't mean there's not some people that just, you know, they just need to have closure medication.

But I will say a, a majority at a time in my clinical experience that people are able to get old cholesterol. So that's hope, right? That there's a reason for hope and there's reason to really continue to learn and continue to work on as far as balance.

## Lifestyle Strategies for Better Vascular Health

You mentioned how that low fat craze of the past 30 years has really shifted, and the focus for the big food

manufacturer to put a lot of sugar and flavoring in our food.

So they will eat it, because a lot of the fat makes food less satiating, less tasty. So then we just replace it with sugar. Absolutely true. But now I think the past ten years keto craze has came back in.

A lot of people are interested in keto and paleo diet, and I think what's happening is that there's a lot of keto snack, like, I go to Costco, there's tons of like ketosis back.

And you look at it, you know, it's a lot of nuts and, you know, different things like that. But then I think the key thing to take away is that just because something says it's keto or it's low fat or low this and that doesn't make it healthy, it's really what's the source of the food, right?

We want to eat whole fresh food whenever possible. So even with fat, if there's something says keto approved, it just means it has a lot of fat and very little sugar in that food product.

But if the fat that that keto product has, it's all, you know, high hydrogenated fat or seed oils, then that's not so desirable, even though it's keto approved.

Right? Because here we're talking about vascular endothelium injury. And that has to do with inflammation. And one of the things that can really cause inflammation is the use of these processed fats like seed industrial seed oils and different things like that and trans fat.

So that the focus is on the inflammation aspect of it. The sugar problem can cause that, right? So definitely there's a reason to do keto because when you do Tito your low carb.

So by being low carb you kind of if you already have high blood sugar, doing keto will help with that aspect of it. But you also need to be aware of other sources of inflammation besides just blood sugar problem like sudden dairy activity, like stress, like toxin exposure, like chronic infection.

So you can clear like chronic, you know, stress, you know, so there's a lot of different things that can cause it. So we have to be aware. Right. So then how do we create balance really just prepare a whole fresh food and eat food from scratch rather than processed.

That's going to be your best bet. And as far as, like, how much fat, how much carb, I think that's a more complicated question. Some people might might need to be on a ketogenic diet for a period of time for a therapeutic purpose, right?

And then some people may not need to do that. So that's up to a person's individual goals and their clinical condition for us, and working with a doctor to decide what's appropriate for them.

So I don't think there's a one size fits all where everybody got to be plant based. Everybody got to be carnivore, everybody has to be this and that. I think everybody should get to select what's best for them based on what they need.

And that's where, you know, learning, learning from you doctor will be very helpful in that regard to to learn like, okay, what are the different scenarios.

And that's what we do in our practice anyhow. You know, we don't prescribe one diet for everyone. I mean, even for diabetics, you know, some people with diabetes, they do well with keto and other people with diabetes, keto just not going to work for them either.

The gallbladder is removed so they can handle too much fat or the blood sugar so unstable they get hypoglycemic if it hits, don't eat. So keto just doesn't work for them.

So sometimes it's just balance. So I think for for cardiovascular health though, the general rule is, you know, whole

fresh food, not so much carbs, not so much sugar.

What to say? Not so much. How much is not so much. Just whatever you're doing now, a little bit less, right? Unless you already keto, then you're already very low carb.

But if you're just eating regular standard American diet, lower carb, more vegetable fibers, probably more in a protein intake, but it's all about the quality of food, I think.

With that said, I think it's going to take a lot of stress off of people having to follow a specific prescription, and if they don't, then they're doing the wrong.

Like that's too stressful. It doesn't have to be like that. I love it, I love it, folks. Doctor Peter said something that I feel needs to be defined or clearly understood because I had no idea.

Doc, when you mentioned endogenous cholesterol. Everyone, your body produces cholesterol. Cholesterol is a main component of your phosphorus lipid membrane that's surrounding every cell of your body.

If you don't eat enough cholesterol. Into my understanding, last I checked was like eight eggs worth of cholesterol. You don't eat eight eggs a day, which most people don't.

Your body is going to produce all that extra cholesterol. So first off, and doc, I mention this because before I went to school, I was educated by TV.

I was educated by commercials. I thought that cholesterol was only in my body because of the foods I ate. No one told me otherwise. And that's kind of how it's really kind of tricky.

You can lower and increase and all this stuff. Low fat, low fat, low fat, right? So first off, just know that cholesterol is not the enemy. I think that's a big takeaway.

It make puts a smile on my face realizing that like wow, that's a big moment when now I'm not looking at a cellphone regulating mechanism as an enemy.

And that's a big deal. And when you start to embrace, oh, that's how my body really works. Now, what does that look like now? You don't have to freak out.

You can have eggs. You don't need egg whites. Again, if you are vegan, that's a different story. But you don't need to worry. You need to take things in balance.

And we're looking at the root cause of inflammation, which is the root mechanism of this whole scenario. And that's basically my explanation and summary of what you're sharing here because it's so important. So doc, I want to I was hoping to get a little bit more out of you with the lifestyle shifts because you mentioned food.

I'm really glad you explained the way you just did. On how to approach food, and one undertone of everything you're sharing here is basically what we need to do to stop the endothelial dysfunction, the inflammation.

We need to stop the insult of what is the word damage and threat. And I want to be careful with those. So what could what are the damages and threats?

You mentioned food. You mentioned toxins, other things. What are these lifestyle shifts that you recommend to your patients? Like just blanket everybody?

I don't care young, old, black, white, male, female. What are the things that everyone needs to start thinking about and maybe even implementing? Yeah, I mean, in my practice, everything I do is, you know, pretty customized.

Of course, there's always some overarching, you know, ideas that can apply to everyone. And I think that one idea,

if I were to say on this particular something, which is a cardiovascular and stroke prevention summit, will be physical activity, exercise, I love it, you know, because I mean, of course, within exercise you have anywhere from just yoga or walking to very high intensity exercise.

You can run marathons, you can do CrossFit. So it goes the whole gamut everywhere in between. So that's a even a deeper discussion. But I think a lot of people I think you see a lot more people who are under exercising than those who are over exercising.

Just keep in mind over exercising is a problem too. But I see a lot more people who are under exercising, either because they have a chronic health condition and they're either told that, oh, you shouldn't do too much and therefore they do nothing right not doing it.

Maybe they can do too much, but that doesn't mean you do nothing. You should do whatever you can do at your current capacity to at least get things moving.

If you're having trouble walking to the mailbox and back, then just walk inside your house, back and forth. You know, for however many you can, even if you just can't even walk right now because your knee is bad, well, then do something in your bed, right?

Or, you know, a bicycle, you know, lay on your back and do a dead bug or something like that. The point is, do whatever you can do, because the activity level is the main driver of nitric oxide production, blood flow, turbulent blood flow.

How do you get turbulent blood flow? You exercise so the blood is gushing through your blood vessel at a faster rate to get to your muscle so you can do the exercise.

That's a response, an adaptation to exercise. So the more you exercise, the more you're going to stimulate nitric oxide production, the more you're going to help with this vascular endothelium.

That will be a blanket, you know, statement that everybody can benefit from. Of course, start where you can start and work your way up. That's awesome.

And in any sort of, general supplementation guidelines. And when I use general folks, we understand you need to be working with a qualified health care practitioner, ideally a team, someone who specializes in functional medicine, who understands this. You need to get customized care.

However, I think you and I are in the same boat here. Doc, everyone should be minimizing you know, phthalates and and PFOA as is and forever chemicals and all the things that we're doing every day in and out that are causing that threat to the body that causes that chronic inflammation.

We need to be thinking about, okay, how do I minimize my risk? How do I put my body in a healing state? And that's what we specialize. And that's what my wife and I have devoted the last 20 years of our life to giving people, hey, how do you make your home into a healing haven?

You mentioned exercise, really important movement. Any sort of general guidelines about supplementation, maybe things that people I don't know. I would love to kind of put you on the spot.

I'd love to hear you say, you know, what things that are out there right now are kind of, a marketing ploy. Stay away from that. Or hey, you might want to consider this.

You mentioned nitric oxide. Should everyone be taking beetroot powder? I don't know, it's like, can you give us some some insight into some of this stuff?

Yeah. And that's a great question. You know, I think some sometimes a supplement may be needed based on a specific marker. Right. Let's just say somebody has very high hemoglobin A1 C because a diabetic then their

nutritional supplementation need might be different than somebody who doesn't have diabetes.

But what I will say is in general look at, perhaps do a test for homocysteine. If your blood homocysteine level is elevated, then definitely you want to consider taking folate and perhaps B12 along with it, because that homocysteine is an amino acid your body naturally produced as a byproduct of making other things, and your body normally can get rid of home assisting on its own.

But if it's not efficient at getting rid of homocysteine either due to a genetic snip or due to an increased production of homocysteine due to some kind of stress or inflammation infection that homocysteine is like that blowtorch that's endogenously endogenously produced that'll damage your vascular endothelium.

Full stop. That's a it's an independent risk factor for heart disease and dementia because of the damage you can do to to your blood vessel. So typically ideal homocysteine range optimally will be 5 to 7.

Minimally less than ten is what we want. But 5 to 7 is great. And the supplement for that will be methylated a folate and methylated B12 combination of that'll really help with all the methylation pathways to, to address, you know, that homocysteine issue.

So I will say that will be one because what all my heart disease that's one that's just really stands out. There's also another marker called C-reactive protein cardiac or C-reactive protein. High sensitivity.

It's an inflammation marker. It's associated with cardiovascular is the reason because inflammation, as I said, right, is not because it's a cholesterol marker.

It's an inflammation marker. So if you have a high CRP you need to find out why you have high CRP. Typically there's some type of underlying infection toxin, some kind of acute stressor that's happening inside your body.

But certainly supplement wise, turmeric can be helpful here to help just dampen the inflammation pathway as you identify the cause of that inflammation.

So, you know, a supplement is helpful. But at the end of the day, it's all about what are you doing with your life, right? Are you continue exposing yourself to chemicals in your household?

Are you changing things out? Are you continuing to stressing yourself out with your lifestyle? Are you continue to stay up late and watch Netflix and not going to bed early?

Are you continuing to not exercise or you continue to eat those high carb foods? Those are the things that if you can focus on the lifestyle aspect, that's going to give the most real payoff, and then the supplement could be supplementary to that lifestyle, especially if you have markers, I can tell you that you need specific things.

Doc is, you know, Sabrina, my wife, mom, Izzy, as many people know, her, is pregnant with babies. Number seven, we are in the throes of the most challenging season of my life for a variety of reasons.

With six babies at home and a lot of pressure on us to be present and to be parents and to be caretakers and to be providers and to maintain life gets tough and it's hard sometimes it's hard.

And you listen to a talk like this, and I look away and I look at myself. And one tendency is, and maybe this is that old carnal nature that we read about in the Bible is to beat myself up a little bit, to be like, you know what?

I haven't worked out as much as I normally could. I've done this not right. I've done that not right. And I start checking the boxes of why should I be on the naughty list yet?

What if we flip the script and start checking the box of why should I be on the good nice list and creating boxes that we could start to check off. And so one thing I want to leave people with is just something.

A mutual friend of ours, Doctor Isaac Jones, recently shared with me. That was really cool. Little exercise, snacks, he calls them and I am fine. And I'll just be very transparent with you all.

Other than me getting away for like an hour and a half here and there to play pickleball with my friends, which is my mainstay. It's my mental peace. It's my hanging out, it's my fellowship.

It's a little bit of exercise, a lot of exercise. But for me to go to the gym and do weight training and things for me to devote an hour is near impossible.

Or at least I think it is. But you know what I can do after this conversation? I can go out and do 30 or 40 pushups. After this, I could go stand on my vibration plate for five minutes.

I could take calls instead of zoom. I could get on my phone and I could go outside and walk back and forth. I've tried my best little things like that, right?

I could throw away my aerosol and put on the diffuser behind me. I could decide not to do this and do that little thing. So start to check that list off.

I want to encourage you all because it's these little micro habits that will change everything, because like Doctor Peter said so eloquently, this is a chronic condition that took years and it will take sometimes months, days and years to reverse.

But to find yourself into a well balanced, abundant life. I love this talk. I may or may not borrow your flame torch brooch, analogy because I literally just killed a cockroach last night, and I love that analogy, folks.

That is the inflammation. When you you don't want to burn your couch with the flame flamethrower because you're trying to kill a cockroach. Folks, any other, Doctor Peter, any other, lasting thoughts you'd like to give to everyone listening?

This has been brilliant, and I so appreciate your time and your energy and your your your focus. Yeah. Thank you so much for giving me the opportunity, Eric.

And I think you you mentioned something that's great. You know, find the boxes that you can check. Right. And you don't have to have a box where so far beyond your grasp and it's not realistic, like, oh, you know, you're not exercising right now.

You say, I'm going to run a marathon. Maybe don't start with that box, right. Just start with doing something every day, even five minutes, ten minute.

I'm a big proponent of what our mutual friend Doctor Joel says. And I've been saying, you know, I call it micro exercise instead of exercise snacks, but I've been saying micro exercise for years, which is just do whatever you can, like, you know, every hour if you're, you know, doing a desk job, you know, set an alarm every hour, just do 2 or 3 minutes of something.

Air squats, push ups. That goes a long way because it does compound. Imagine if you do ten push ups every hour. You have eight working hours. After eight hours you've done 80 push ups.

It still counts. It still works. You're still going to get stronger. So I encourage everybody to just start doing something on a regular open. I love it, folks. I really appreciate you taking the time to listen to this.

A lot of great practical information. You're gonna have to really listen to this one again. Doctor Peter, thank you for your help and your support and for sharing your brilliance with us.

And as always, this is Doctor Zelensky landscape. I hope and prayers that you and your family truly experience the abundant life. We'll talk soon. Bye bye.