Introduction and Runner Cardiac Arrest Story

Welcome back for another very interesting conversation we're going to have today with a dear friend of mine, cardiologist Dr. Steven Lome, here in California.

And I'm really excited to speak to all sorts of things about hypertension and its silent progression and some other things today with you today. But how are you today?

I'm doing great. Thank you so much for having me. Well, I think before we even get started, I would like to if you could give a little bit of a summary of a really interesting situation that happened to you last year when you were running a half marathon.

Just so people can understand, you are really an amazing expert, but you've had some really incredible things happen this last year. If you could kind of give a quick serve in your story, please.

Yeah, it's been crazy. My whole life has been very well set up to be a lifestyle medicine type of physician. I was 100 pounds heavier a long time ago and I got into exercise thinking exercise was the key to good health when really it's more diet.

But I got into running and I ran some marathons and half marathons. Try to ignore the diet part didn't work. So I really obviously ended up getting strict on the diet.

But one of the things I ended up doing last year was running a half marathon with my two older kids out in Monterey, California, and it was a normal day and I thought everything was going to be great.

At Mile three, Runner had a full cardiac arrest right in front of me. Literally, he died. And it was a fatal rhythm called ventricular fibrillation. Had to do CPR, shock him, and eventually he found out he had a Widowmaker blockage, got it fixed.

But after he had that cardiac arrest of mile three, I figured I got to keep going. Right. Because he's but he he revived and he survived. Yeah. Yeah, he was alive.

He was better size that I got to keep going because what else am I going to do? He's in the ambulance. He's on his way. There's nothing more I could do for him.

And then I cross the finish line and a second runner collapsed literally right in front of me. Exact same thing. It's uncanny how similar such situations were.

It hit his head and no pulse. The same rhythm, the fatal rhythm had to shock him. We got to him really fast. He woke up and he stopped the Strava app on his watch so he could record his race time and he wanted to get up how we got to him so fast.

But he also went to the hospital, got a Widowmaker stent, and they both made complete, full recoveries and they both now are following very clean, whole food plant based diets, which is amazing because they're a great example of how exercise is only a small percentage of being healthy in regards to heart health, high blood pressure and everything.

It's going to be about 20% of it, but a vast majority of heart health is dietary related. You can never out exercise your diet is the expression perfect?

And then you guys ran a half marathon last month, right? Yeah.

Why Hypertension Is the Silent Killer

So it was just a few weeks ago I was the one year anniversary of that event when that when the two runners had the cardiac arrest. They are amazing people, man.

I tell you. Their resiliency and their their mental strength to come back a year later and take on that same race. We did it together. We stuck together the whole way.

We finished holding hands, arms up. Yeah, we did it. So a bit emotional when the runners hit the spot at the course where they had their cardiac arrest.

But at the end of the day, they fought through it. They did it. And it was it was a great moment. That's fantastic. So if you want to see more about it, you should check it out.

Just click today's show and Dr. Steven Lome and you guys can see this really cool interview with them and you meet them in person. So that was that was cool.

You were there in person, but they don't recall that you saw them again. Right? Actually. Right, right. Right on the TV show. Well, let's just dove right in here in.

I got some questions for you. And really, let's start with like, why is hypertension often labeled the, quote unquote, silent killer and what makes its progression so stealthy?

Yeah, so hypertension is extraordinarily common. And they say about 70% of adults over the age of 50 have it. So it's tens of millions of people in America have high blood pressure and honestly, slowly creeps up on you as the blood pressure goes up over time in America.

I mean, that's not the way it's supposed to happen. But with our lifestyle in America, our diet and the rates of overweight and obesity, that's what ends up happening.

And as the blood pressure creeps up, 131 4154, the top number, the systolic blood pressure, it just there's no symptoms, right? So people don't feel their pressure is high.

At least it's most people don't. And so it is silent. And but the whole time that the blood pressure is elevated, it is putting a lot of strain on your system, not not just your heart, but your kidneys, your other vessels, your brain.

And it can lead to lots of different issues in you know, if there was a clear symptom related to high blood pressure, I think a lot more people will be aware of it and would would come to the doctor, get things fixed.

But without the symptom, it just kind of slowly, slowly attacks our system, putting at risk a heart attack, stroke, any damage and other things without your knowledge.

And that's what makes it so, so deadly. And because of the lack of symptoms, it's somewhat underdiagnosed. A lot of people don't know they have high blood pressure.

Exactly. And we'll get to that here in a minute. But I do have a question here. What are the initial signs or symptoms? So, like you said, there aren't any symptoms, but how would someone would there be any symptoms?

Like, would someone be like maybe I should get my blood pressure checks? What would be some of the more subtle signs? Yeah, I know a great question. So first of all, everybody should be seeing a doctor every year when you go see your doctor, they should check your blood pressure.

So let's say they haven't seen a doctor in a while or just wondering how often or when should I check my blood pressure?

Blood Pressure Numbers and When to Worry

For those of you who are at risk for high blood pressure, whether there is a strong family history, if you're overweight, drink alcohol on a regular basis, have sleep apnea, have a high salt or unhealthy diet.

It will be nice for you to have some way to check your blood pressure intermittent on a regular basis. There's no specific rhyme or reason, but once a month or something, just so you have the number, because again, you may be somebody that has no symptoms.

Now, symptoms of high blood pressure frequently don't develop until the blood pressure is pretty advanced and pretty severe. Say the top number, at least like 160, 170.

And, you know, I've even had people come in blood pressures, 200 to 20 for the top number 220 over 120. And they don't even feel it. But a lot of people, when the blood pressure is that high, they have a little sense that they're feeling tired.

They may have a headache, they may have some visual changes when it gets to be really bad, what we call a hypertensive urgency or hypertensive emergency, people could get chest discomfort, just pressure, shortness of breath, and even the most feared type of symptom stroke like symptoms can develop.

And that becomes more of a medical emergency when high blood pressure is that bad and is causing those symptoms. But frequently, the blood pressure could be very, very high and have no symptoms.

So if I have a patient who who's blood is 220 or 120 in the office, and they feel completely fine. It's not like they need to go to the emergency room, but we do need to quickly address this because the higher the blood pressure is for, the more years, and the more, you know, months and years that it's elevated, the more strain it is put on your system.

It's a cumulative effect over time. I kind of compare it to like smoking cigarets the more you smoke and the more years you smoke, the more the damaged well, blood pressure is the same, the higher the blood pressure is like smoking more cigarettes, and the more years you leave it elevated for, the more they of damage and kind of risk to your system. Hmm.

Yeah. So early detection is key. So can maybe we speak to a little bit about what are what is normal blood pressure? We spoke to it in some other speakers, but I think it's important to kind of reiterate, I hear kind of as we lead into a few other questions, but when someone goes to get their blood pressure checked or maybe they check it at home or someone checks at home, it's like, you know, these numbers actually might require some type of intervention.

What does that look like in what do you advise patients? Yeah. So the two numbers, the number in the top call systolic, which is a blood pressure when the heart is squeezing the number in the bottom, we call diastole like it's the blood pressure.

When the heart as relaxing, the number on the top should be less than 120. The number in the bottom should be less than 80, so normal to be less than 120 over 80.

And it's important to understand the less than because I had people come in to say, my gosh, my blood pressure's 110 over 60. It's too low. Oh, no, no, no, no. That's great.

That's exactly where we want. It is 110 over 60 or even 100 over 60. Those numbers are great kids and young, healthy people in their teens and and hopefully twenties when they're fit.

And then their blood pressure frequently is 100 over 60. And that's where that's the way it should be nowadays when adults get older, everybody's so used to having high readings.

How High Blood Pressure Damages the Heart

So when all of a sudden it comes out 100 over 60 people think, Oh my gosh, that's low. But no, that's not too low. That, that's, that's great. So when the top number becomes between the 120 to 130 or the bottom between 80 and 85, that's when you're like, Oh, you're getting into that.

We used to call it pre hypertension, just kind of borderline that where we would really say, this is crazy dangerous, but it's kind of our, hey, warning, warning.

You're creeping up there and you really should make some aggressive lifestyle changes so you don't hit the next level. And if you're over 130 for the top, over 85 for the bottom on a regular basis, and there's different guidelines from different societies, I follow American heart Association, the American College of Cardiology guideline documents.

Then then we're calling stage two hypertension, which frequently would require, you know, it's every every hypertension requires intensive lifestyle changes which we can get to.

But when you're doing the best you can with lifestyle or you're still working on getting things right lifestyle wise, then and there's the pharmacotherapy, the medications.

So definitely blood pressure medications indicated to get it down even while you're proceeding with lifestyle interventions as the first step. But medications obviously are needed in some cases.

But I want to get to kind of this back a little bit to the silent progression. So when you mentioned you've had patients with blood pressures in the 200 systolic and they come in and they're minimally symptomatic, how does that happen?

Like how does the body adapt to or respond to these prolonged, elevated blood pressures? What mechanisms at play? Well, the human body is absolutely amazing how it can adapt to so many different things and situations, honestly.

But I mean, since when the blood pressure is as high as 220 over 120, that didn't happen overnight. You know, that happened over many months or sometimes over many, many, many years.

And so in those instances, the heart itself, being a cardiologist, that's usually my focus. The heart muscle actually thickens up and it thickens up. You know, I think of just like any muscle, if you work any muscle really hard, you lift a lot of weights, your biceps can get bigger.

Well, your heart's some of also, if it has to pump against a higher blood pressure, it's going to thicken up, too, which can, you know, lead to some some major issues.

But you get changes in the artery wall. There's neurologic changes and even the kidneys start to have issues. But over time now, that high blood pressure certainly can increase the risk of clogging of the arteries.

And and and, you know, making the vessels, you can kind of think of it being more fragile, prone to stroke, plaque rupture or hemorrhage in the brain.

Is that the most feared complication? So it's it's amazing how it happens. It's very similar to, you know, when people become diabetic, their sugars go up.

When it happens over a very slow period of time, symptoms take longer to develop versus when it happens rapidly, then they get more symptoms. Yeah, perfect.

So can we speak a little bit to heart failure? What that is exactly.

Heart Failure From Hypertension

And what are the symptoms of the different types of heart failure that someone might they actually might actually show signs of that before they even realize they have high blood pressure. Yeah, absolutely.

So congestive heart failure is the number one reason in the United States for somebody to be admitted to the hospital. And it's a situation where the heart simply isn't pumping enough blood to meet the demands of the body.

And there's many different causes of heart failure, like heart attacks or heart valve conditions. But certainly one of the top risk factors for developing congestive heart failure is having had high blood pressure.

When the blood pressure is high, especially over many, many years, again, the heart muscle thickens and when it's really bad, it can make the heart weaken because you can kind of think about, again, going back to the lifting weights with your biceps, you start lifting weights, you can do it for a little while, but then you're going to hit a point where you're going to say, Oh my gosh, my muscles are fatigued.

I just can't keep doing this. I have to put the weights down because the muscles fatigued while the heart muscle gets the same way when it's pumping against such a high blood pressure over a period of time, it reaches a point where it just says, I just can't keep doing this.

And it starts to weaken. And when it starts to weaken, it's not pumping enough. The pressure builds up. When the pressure builds up, the heart camp up enough blood to all your organs, including the kidneys, for you to get rid of water, to urinate out with the fluids that you're taking in.

And so water accumulates in your body, a lot of times accumulates in the legs because of gravity. People have their legs hanging down but eventually worked its way up.

Can get into the lungs and make people very short of breath. And so congestive heart failure when it's from hypertension alone, that's a really not a good thing because that means the hypertension is been very uncontrolled and there's very likely significant permanent damage done to the heart.

Now, there are other times where the heart can remain strong and it doesn't weaken, but because of the thickening of the heart muscle, it has abnormalities in what we call relaxation.

The diastolic like function, which means the feeling of blood. It squeezes strong, but if it can't relax adequately to fill with blood to prepare for the next heartbeats, then overall output of the heart goes down too.

And that causes that same type of congestive heart failure symptoms. Hmm. So what are the typical treatments for that and how does lifestyle or plant based eating help with heart failure?

Well, so when heart failure is related to hypertension, I mean, you could think of it the cause of the hypertension and thus the heart failure is is lifestyle related and always the best treatments going to be improving lifestyle, no question about it.

Trying to normalize the blood pressure is absolutely critical. And yes, like we said, in the short term, you know, sometimes medications are needed. But almost every single case, if somebody is intensive enough with their lifestyle change, you could reverse the hypertension, which may not completely reverse all the damage done from the high blood pressure on the heart, but it can reverse quite a bit of it.

Lifestyle, Medications, and Resistant Hypertension

And so the critical things when somebody has heart failure related to hypertension is controlling the blood pressure, controlling the water balance. And then there are other complicating factors that can happen from that, whether the kidneys are strained or heart rhythm issues develop such as atrial fibrillation in those situations, controlling those things are critical to keep the water out and help somebody breathe better and feel better from congestive heart

failure.

Okay. So if you have someone, let's say that they are doing everything they're supposed to. We have someone who's eating a whole food plant based diet.

They're in an adequate, healthy weight. They're exercising regularly. If they still have elevated blood pressure, maybe we're requiring, you know, two or more medications.

What should they do? Like, is is it just written on the wall? This is your fate or or is there something else we should be looking at? Yeah. So it's a great question.

So first of all, just to address, some people think, you know, blood pressure is genetic, but just like diabetes or heart disease, we always see the genes load the gun.

But diet and lifestyle pulls the trigger. Even if you have genetic risk, your lifestyle choices are way more powerful than your predisposed genetic risk.

Let's say somebody is really doing perfect. And I have patients telling me they're really doing perfect. I go, All right, let's really examine what you think is perfect and make sure that they're doing things right.

Regular exercise, whole food, plant based, low fat diet, reaching, ideal body weight. Because a lot of people may not be overweight or my body mass index is 24.5.

But, you know, technically ideal weight might be £10 lighter than that and that might be that £10 you need to get your blood pressure down. We think about alcohol because some people still, you know, think that red wine isn't all that bad for you.

And that's not true. Any amount of alcohol is bad for your cardiovascular system, not to mention cancer risk. So I make sure there's no alcohol being consumed.

And then one of the most overlooked things that raise blood pressure is actually sleep very good. Sleep is critical, whether it is just somebody gets interrupted, sleep because they have a lot of pain in their back or they wake up to pee all the time or sleep apnea.

Snoring, snoring, stopping, breathing. Statistics actually show the number one cause of resistant high blood pressure, which we define as high blood pressure, despite being on three different medications or more is sleep apnea.

That's uncontrolled snoring and stopping breathing. It even raises the blood pressure all throughout the day, not just at nighttime. So even if the person says, I don't snore, well, you know, you could have sleep apnea without snoring.

That can happen. So in a situation like that, I would have them referred for a sleep evaluation to make sure that they don't have any sleep apnea present as well.

And really look at the sodium in the diet. We try to increase potassium in the diet and I think that's pretty much it. Eat your veggies. It usually works good.

There's some other things like, you know, ground flaxseeds, blueberries, other things that have some softer amount of clinical trials that can kind of help lower blood pressure, but there's no other magic remedy, the natural, you know, garlic pills or anything like that, that has really been adequately shown to help with blood pressure when somebody is doing everything else perfect.

So so I'm sorry. Following up on that, tell me everything perfect. And we went through all those things that we still can identify. Then we start thinking, is there something else going on?

Is there a hormonal issue? Is there a adrenal tumor or is there what we call a secondary cause? And so that requires further investigation. So if you're in a situation where you doing everything perfect and your blood pressure is still high, make sure your see your doctor and some other tests that need to be run.

MM Can we speak a little bit to the sleep apnea? I interviewed a sleep specialist, a physician, and it was really helpful. She had mentioned the nighttime dipping doesn't occur of your blood pressure naturally overnight.

But what would you say the mechanism is for that? High blood pressure is secondary to the sleep apnea. Can you just give a little bit of the physiology that's occurring there?

Yeah. And so, you know, I'm not obviously a sleep medicine specialist and perhaps they could speak in more detail.

Sleep Apnea and Secondary Causes

But my understanding is the sympathetic nervous system, which is adrenaline mediated, is hyperactive when somebody doesn't sleep well. And that is one of the main driving forces, very similar actually to alcohol intake activates a sympathetic nervous system.

So I know that that is one of the main physiologic mechanisms is that even during the daytime, your general level adrenaline levels end up being higher when you don't sleep.

While we have sleep apnea. Mm. So when we get to the hypertension and someone is discovered, they have hypertension, they go to the doctor like this is elevated.

Maybe it was like 150 over 90 or something. Are there other tests they should be doing at that point to to make sure other things haven't been damaged already?

I mean, yes, of course, they'll be hopefully advised on lifestyle intervention. Not always, but sometimes they are. Is there anything else that we should be concerned about at that point, as we're starting medication in Africa?

Absolutely. So the first thing we do is just routine blood work. The most critical is is kidney function. I make sure that nothing is has damage, the kidneys.

And that's important, too, because when it gets to the point where medications are needed, many of the medications, we need to make sure our kidney function and electrolytes are good before we start them.

So so that's one thing, you know, I'm assuming this person has no symptoms and the lack of symptoms, routine blood work, checking, kidney function, we check thyroid it cause thyroid abnormalities can raise blood pressure to come in too.

So it's a simple blood test. Might as well just exclude any thyroid disease. And then here in our cardiology office, of course, we do an EKG as well, EKG where they put the stickers on and we measure the heart electricity.

We could see if there's hypertrophy or thickening of the heart muscle, which tells us there's more urgency to address. That has probably been elevated for a while and is already starting to affect the heart.

And so that's an important piece of information besides those things. If there is no symptoms, there's really no other specific testing that we would do.

Again, if we think they have sleep apnea, we would refer for a sleep evaluation. Any of the other symptoms going on, we may focus testing on those other symptoms.

Would you how would you be your let's say, your activity, your exercise prescription, be with someone with hypertension? And what would that look like?

Yeah. So the most of the research on hypertension focuses on aerobic exercise, endurance exercise. And so the current recommendations are 3 to 60 minutes, five days out of the week of moderate intensity aerobic exercise.

So that means two days you get you get to rest. The other five days, you should be doing 30 to 60 minutes of moderate intensity. So modern intensity is a type of exercise or degree of exercise where you're getting a bit short of breath, maybe a little bit sweaty.

But if somebody asked you a question, you'd be able to speak to them in a full sentence. You'd be able to answer them pretty well. And some people talk about, you know, what heart rate should you be?

Testing, Exercise, and Diet for Blood Pressure

And usually we would say 50 to 70% or so of your age predicted maximum heart rate when you're going more to the 70 to 85% of your heart rate, that gets to be in the more, more vigorous physical activity level.

I know you could do vigorous exercise so you have no time. You're a busy executive and like like I said, have no time. Fine. Cut the number of minutes and half of exercise.

You do, but make it vigorous. That's considered okay to do then specifically for heart health, they say in addition to that aerobic exercise, that endurance exercise, it is very helpful to add resistance training two days a week.

So two sessions, maybe an hour each. And, you know, a lot of people are to myself, I'm not a gym guy. I'm not going to go bench press, you know, 300 pounds or whatever.

Crazy. Well, it doesn't have to be that. It is very simple core training, stepping up and down on a box, you know, doing push ups against a desk. I mean, anything that just kind of activates the muscles in the core and gets you some good resistance training, too.

So that's been shown to be beneficial as well. Perfect. You know, resistance training, I think is neglected by so many of us because it's just easier to put on your sneakers and go for a walk or jog or hike versus move something heavy.

So yeah, I just did a osteoporosis workshop last night and it was such an important piece to speak to throughout your life to be doing these things. But I want to just hone in on the last question a little bit, if you can speak to are there any particular foods in the whole food plant based diet that have been shown to be more beneficial or that some of you might want to pay attention to a little bit more than everything?

Like, where would you say, do this, do that, maybe not this. Yeah, I think great question. So there's a couple of different ways that I could answer that.

One way is to say that one of the most powerful things about the whole food plant based diet is actually not necessarily the food you are eating. But if you're not eating when you're eating whole food plant based strictly, you're not eating processed foods, right?

Which are extremely high in salt. 70% of salt in the American diet comes from processed foods. And then even animal based foods are very high in salt and can raise blood pressure.

And so a lot of the benefits of eating, hopefully plant based honestly, are just simply because you're excluding all those other harmful foods in your diet.

Now, in regards to what's actually in some of these plant based foods, you know, phytonutrient it's and insects that are good for your blood pressure specifically what a lot of people point to in my world cardiology world is is the natural kind of nitrates, the beets and beet greens and arugula is the rocket lettuce, they call it, because the nitric oxide effects that you have when you eat the green leafy vegetables now in our whole medical world and lifestyle medicine, we really want evidence to back a statement.

We want a randomized, controlled clinical trial. And it really is unfortunate that we don't have randomized controlled clinical trials saying you eat a bunch of arugula and you don't eat arugula and let's see who's blood pressure gets better.

So it's hard to really say, oh, yes, this specific food or that specific food has definitely has solid evidence to say that it helps support and or lower blood pressure.

But there are a few things I've seen some trials on ground, flax seeds with some benefits and some blueberries. There were very small trials, not very well done, not long term, but hey, I kind of think of it, though, as more as it's not always necessarily what you eat is what you're not eating.

And the dash diet, a lot of people talk about the dash diet is not 100% plant based. It's mostly plant based. But the writer is the authors of the Dash Diet specifically said that 100% plant based is the best.

But clearly, being exclusively for plant based is superior to being 90% whole food plant based. There is individual variability, but for a vast majority of people, you really want to go all in to have the greatest effect.

Perfect. I think that's a great way to end it. I my sweeping recommendation for every human alive is a whole food plant based diet. Absolutely. There's some nuances to, like you said, the individual, but everyone will benefit from plants in.

So that should be a great way to end it. But thank you, Dr. Lome, for spending time with us today and sharing your knowledge. We really appreciate it.

Absolutely. Thanks. Thanks for having me again.