The Worst Offenders: Expert Advice for Reversing Heart Disease With Diet Modifications Transcript

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Introduction to Dr. Steven Masley

everybody hold still. Buckle up. Don't move. I brought you one of the best clinicians that I could ever imagine inviting on Reverse Heart Disease Naturally Summit.

A friend for a decade plus. And really authentically an expert on the topic we're talking about. And that's doctor Steven Masley. How are you, Steve? I'm doing great and delighted to be with you.

Thank you. And I will officially introduce Steve and a little brief bio in a moment. But I had to say when we were putting together the list of people to interview, I actually believe there are under 50 clinicians in the world that can say, I've seen plaque shrink, I've seen disease, reverse, which is, of course, the very topic of this summit.

Building belief and strategies. And you're one of those people and you've been watching and doing that longer than me. So let's dig into that. But I do want everybody to appreciate, that you are a physician, your, nutritionist certified.

I know you and I have talked and I've seen you prepare food. You're a trained chef. And you did that before. It got a little trendy for docs. You can handle knives and cutting boards like no other.

And, you're a very successful author. 30 days younger heart being, the book that you and I can share so easily in terms of a cardiac topic and, and you just dominated the PBS world with your PBS special by the same name.

I mean, your fellow of the American Heart Association, American College of Nutrition. And you're in Saint Petersburg, Florida. And, way it's, the last few months of, unsettling weather there.

I'm glad you're safe and fine and, here with us today. So thank you for being here. My pleasure. So tell us, I mean, there is, a wonderful clinic in Saint Petersburg, the optimal health center clinic.

Tell us a little bit about how long, that has carried your name and how you have evaluated patients for the presence of a plaque in their arteries, because you can't reverse what you can't see.

So, how did you find plaque and your clinic? Tell us about it. Well, I started using carotid IMT testing back when I was the medical director in the at the Prediction Longevity Center 22 years ago.

And about 20 years ago, I moved back to Saint Petersburg, Florida, and formed my own clinic. And that was one of the hallmark things I measured from day one was, how old are your arteries?

Are you growing plaque? Is it shrinking? And we I followed patients over the last, 17 years looking at arterial plaque growth. And we had hundreds of patients shrink their plaque by more than 10%, a ten year typical plaque growth period.

Carotid IMT Testing and Plaque Reversal

And, you know, our average patient shrunk plaque. So we know that over time that most people are going back in about 1 to 1.5% per year, their arteries are closing, and our patients were shrinking over time.

So I actually have to say honestly, but embarrassingly, I didn't realize you were at the Prediction Center 22 years ago. Nathan predicted in his name has come up, aerospace engineer who changed the world with the belief that he could teach lifestyle medicine and got a group of doctors and published over 100 papers and developed the famous predicted longevity center.

So, wow, you have so many interesting, hats that you've worn that have culminated in you being the superstar you are. Just in case the audience didn't get carotid IMT.

Take two minutes and break down. What is the abbreviation? What's the test? What are we looking at? Carotid auntie is interval media thickness. We're basically looking at the thickness of the plaque growing in your arteries, which reflects the age, the important age of your arteries.

So I've met many people who've had plaque their age or 20 years older or 20 years younger, and, you know, so over time, as I said, most people are growing plaque in about 1.5% per year or so every decade.

They've blocked about 15% of their arteries. That's not good. So that 20 year olds who had the plaque, a 40 year old. So, I think it's the most important test we did in our clinic 17 years.

I'm in my eighth year at my preventive clinic. So you've doubled plus and I give you credit for that. So this is a simple ultrasound test. No injection, no needles, no iodine, no X-ray technique done in an office comfortably pretty much seated or lying.

Anybody is capable. Takes about what, 25 minutes? 20 minutes? Well, maybe ten minutes to get the data and another 10 to 15 minutes to analyze it. And in case anybody's thinking, yeah, I'll just call up my local doctor in my local hospital.

I mean, how is it different than the prescription a doctor writes for a hospital based carotid ultrasound, which it is different, but you and I, you know, that's a really good point because most 95, 99% of the time, if your local doctor writes work, are going to do a carotid duplex study looking at blood flow, the hospital setting, they're hoping to find your arteries blocked so they can do a procedure to open them, which has real risk to do.

This is measuring the thickness, the lining of your arteries, something almost none of the clinics or our, hospitals have the software to analyze, so you'd have to find a doctor, Google carotid IMT, and find someone who can do that kind of testing.

Right. And, it's so important to understand that because, you know, they're disappointed when I show them. I know their insurance may have covered the hospital based carotid study.

You know, it'll say less than 50% narrow. It doesn't tell you if that's 5% or 45%. It doesn't measure that thickness that you're talking about. And, you know, 1 or 2000 publications in the research world, it's nothing you developed or I developed.

It's something we've adopted as a tool. So you will, make a baseline interval, medial thickness, carotid measurement. And what's the earliest you've seen improvement.

You bring people back about a year. About a year. I mean, so, you know, we've looked at precision and you need, if you did the test multiple times on the same person over and over, your precision rate's about 4%.

So the quickest. So I've had people shrink their back by ten. I think my all time record was 16% in one year. And so you would need so by six you could in a in a rapid shrink.

Or you could look at it in six months. But for most people I think what's practical, realistic and cost effective is to do it yearly and measure your package over time.

And I agree with that. That's pretty much the protocol here. You don't turn this ship around. It's been going in one direction for 40, 50, 60, 70 years.

You don't do that in a month. But, a year is a good time point. And again, I just want to stress, I don't want anybody to be sitting anywhere but on the edge of their chair.

We've got a clinician we're talking to over 17 years, has proven. And you talked about it in your books and you've talked about it on PBS. You've proven that plaque can be reversed as measured by this ultrasound thickness.

It's it's radical that people should run to their family doctor. I still get excited about this opportunity now and ask, where can I get it? Carotid IMT and this is real that you can reverse plaque.

Help me do it. Find me somebody to do it. Now, you said in a month, you know we're not going to see a change in plaque. But I love a month. You know, that's why I called it 30 Day Heart Tuna.

Because that a month. People's cholesterol profiles, better importantly, their blood sugars improve their blood pressures. In prom. They're losing weight.

They feel better and they sleep better. And their sexual function has improved with their circulation improvement. So you can see a ton of improvement by a month.

But I'm total agreement. If you're going to check it on two, you should wait a year. Yeah, absolutely. And you know, there there have been some interviews.

We have the new advanced coronary angiography even with artificial intelligence.

Sugar, Refined Flour, and Arterial Damage

And it's an amazing tool, but it is an X ray tool with a fairly measurable dose of radiation and injection of iodine, being used in research projects and, yeah, entering into clinical practice, but, you know, more expensive, more invasive chance of allergic reaction.

This carotid IMT scan has so revolutionized my ability to help people. And, you know, you're you're a thought leader. Now, I just want to shift a little bit because, again, I'm going to put you on a rare pedestal.

We've got a doctor Ornish with a book on reversing heart disease, and a Doctor Esselstyn with a book on reversing it, and a doctor, Joel Furman. And now not too many others.

Nathan prediction that actually talk about that. But your dietary approach is a little different. And I've heard you talk about two foods and you are a certified nutritious in addition to being a physician.

So you're an authority two foods or food groups that you think just bugger up arteries, and cause plaque. So share with us your thoughts on, you know, your top two.

Well, number one would be sugar. Sugar to me is the number one cause of hard degrees, the heart disease that we see today in our Joe Platt growth. You know, that whole insulin resistance issue.

And and number two is ground up flour. I don't think most people realize that when you grind flour and when you grind a grain into flour or grain flour, it has the same glycemic load as table sugar.

So if you had three bowls, one of sugar, one of white flour and one of whole grain flour, one tablespoon causes the exact same rise in blood sugar levels.

So those are the two foods I think are most important to get out of our it's not fat. We healthy fats we want to cut out. It's the sugar we want to cut out okay.

So let's go into sugar a little bit. We have not talked a lot about sugar in various segments of this summit. Distinguish for us if you believe an apple and a cookie with, you know, a tablespoon of white sugar in it, do you find there's a difference in those added sugar. It's not.

It's enormous. I mean, you know, an apple has fiber. So it blunts the blood sugar rise and you get energy rising

slowly over time. A sugar is a big spike that's going to cause an insulin spike as well.

And insulin resistance. So an apples loaded with nutrients that blocks inflammation and oxidation. And you don't get any of that with sugar or, you know, flour.

So we probably won't eat on the same boat. We probably agree sugar sweetened beverages people are. I'm amazed when I take a dietary history for my patients.

And it's still, you know, a soda and energy drink, you know, an orange juice off the shelf of the grocery store that has no pulp and, no fiber in it. Would you agree with me?

Probably the biggest sugar spike to have added sugar in a liquid. So the worst thing is to drink it in a liquid. And the only thing I would throw in is I'm not sure the chemical sweeteners, the blue, pink and yellow packs are better though.

So yes, they're toxic, but those dietary chemical added ones NutraSweet, Sweet'n low, sucralose, Splenda those, those impact the bowel and kill off the good my gut microbiome.

So we don't want we don't want sweetener in our drinks. I think we should drink real water. Herbal teas. I'm fine with tea and coffee, even red wine. But, you know, give up the sweetened drinks, please.

And you and I know there are wines that are as sugar loaded as some sodas. And then there are more natural dry farmed. European wines. They don't have to be expensive.

Good old flask candy is typically a very or no sugar wine, so be snobby. In particular, if you're doing enjoy a glass of red wine, go a little deeper.

Where are hidden sugars in the diet? I mean, Doctor Mars. Okay, I get it. I'm going to swear off my Mountain Dew. But what are the next few that people need to be?

Really, really, you know, focused on? Well, when you read ingredients, what the companies do is they divide it up, hoping to keep sugar from being one number one.

So they'll put like those, split it. And so they'll be like, rice sirup and rice flour and they could be, you know, honey is mostly sugar. Yes. If you're going to have a sweetener on occasion, honey is probably the best one because it has some probiotic to it, but it's still 98% sugar.

You know, all these still add sirups. Well, you know, it's it's kind of an endless list. So there's probably sugar goes by at least 20 names and includes some of the starch like tapioca starch and corns, you know, corn starch.

So all these things are just other names for sugar that you have to be coffee. Be cautious about when you look at these ingredient list for food, you know.

But the advantage is when you're eating real food like an apple or like black beans, like letters. You don't have to read the ingredients. That's what it is. Real food.

Wonderful. What do you think is the pathway by which a high added sugar diet? I mean, of course it's often associated with others. A donut has more, donut has your refined flour.

A donut may be fried in poor quality oil that's been sitting in the fryer for hours. And of course, a donut has added sugar. So, you know, is it that added sugar is associated with so many other factors?

Or is there some pathway by which you would explain to the group that sugar itself can promote these carotid plaques that you so carefully measure? Well, when we get a sugar spike in our bloodstream, it causes an insulin spike, or it has a cascade of biochemical events.

It makes us inflamed, it makes our arteries constrict and creates more turbulence. You know, there's nothing good about a sugar spike unless maybe you're trying to outrun a predator.

You know, you need that short burst of energy. But generally speaking, we don't want these spikes in sugar spikes in insulin, which results in insulin resistance and insulin resistance.

I mean, especially that increase in not not, you know, not just inflammation, but it shrinks our brain cells. It gives us brain fog. It increases cancer risk.

You know, there's nothing good about insulin resistance that comes from sugar spike. So the problem is not eating an apple that has fiber and nutrients.

It would be drinking apple juice as you were saying, juice. You know, there's not much difference between a soda and apple juice. That just causes that very large spike in blood sugar levels.

All right. And it probably ultimately, I think we'd agree, is damage to the endothelium, maybe advanced glycation end products from repeated sugar spikes.

I think, many people on the summit have heard us talk about the endothelium over and over. And, you know, you keep pounding your endothelium with high blood sugar spikes after meals, after drinks, you get damage and damage, over and over leads to plaque development.

That's a really good point, because within 20 minutes of an unhealthy meal, the end of the union becomes dysfunctional and it literally constricts, and you lose about 20% of your blood flow for up to 6 to 8 hours from one bad meal.

Oh, so every time you have a bad meal, it decreases your athletic performance, your circulation, your sexual performance. All of that plummets, but when you eat real food like blueberries and black beans and kale, you know that apple, your arteries, that you enhance the the endothelial function and your blood flow increases.

So every meal gives us the choice to to constrict your arteries or to dilate them. And obviously we function better with better circulation. And so I want everybody listening to take this advice to heart literally.

The food industry is doing pretty good. There are a lot of no added sugar foods that you're probably not buying. I love barbecue sauce. I will put barbecue sauce on many odd food items.

My wife cringes at her well cooked meals got, covered. But there are so many additives in most barbecue sauces. And they're under those those names, those maltodextrin, those high fructose corn sirup, those rice sirups.

And there are a lot of no sugar barbecue sauce. You just got to do the work, search it out on the big box stores or your local store and become a fan of them.

And, you can still enjoy all the usual tastes. And if you are going to use the sweetener, you know, the ones I think are probably benign are things like stevia, monk fruit sweetener, or, you know, in small doses, a little erythritol or xylitol.

Nutrients, Supplements, and Hormone Optimization

And certainly there's nothing controversial at all about what you said about being an expert on the difference between refined grains and whole grains.

You know, if it's not crunchy, bumpy, brown, you probably shouldn't eat it as a grain. Because, you know, the research in the last few months has shown, refined grains are hard, toxic, whole grains are beneficial.

So it's not just you and I, you know, teaching the world this. It's well founded, so. Well, like steel cut oatmeal, you

know, that actually has a that's a grain that has a low glycemic load, in contrast to instant oatmeal, which has been ground into flour and has a high glycemic load.

Kind of slow down that slow cooking movement. So, Mr. Jones, Mrs. Smith is at the nasally optimal health clinic. They have signed up for the I will add no sugar.

I will avoid and eliminate refined grain program. But Doctor Massie, I want to get my abnormal carotid IMT. You just did. I want to come back and be a star in a year.

Are there any vitamins you found in your clinic? Are there some medications you found in your clinic? Of course, we're not going to smoke and we're going to teach body movement, fitness or anything off the shelf that you say has been going.

Yes, we so we we did an analysis of our thousands of patients who went through and when we first met them, and those people who were getting adequate doses of specific nutrients like magnesium, zinc, fish oil, vitamin K, vitamin D and fiber, if they were getting those nutrients and a good intake level, their arteries were younger than if they were deficient.

And up to 70% of people are deficient in things like vitamin D, vitamin K, you know, magnesium. And when we looked again over time, who is shrinking? Which minerals predicted shrinking plaque with your restore?

If you went from low to an optimal level in particular the same nutrients magnesium, zinc, vitamin K, fish oil, vitamin D, flour. When you added those in, and potassium when people added those as a supplement or from food, they were much more likely to shrink their artery plaque over time instead of growing.

So, you know, we noticed that your nutrient intake was much more important than your cholesterol level now. So, these food based I don't mean to say your cholesterol doesn't matter.

It does matter. But nutrient intake is is more important than your cholesterol level. From the data published from our clinic. But as a, patient going to walk out of the clinic with a bag of zinc or a multivitamin, but they're going to walk out with is a recommendation to eat well, the right food to avoid sugar and grain, flour, to exercise both aerobic and strength training, and manage their stress.

And and if you if you supplement that with like a good multivitamin that includes the vitamin D, the vitamin K, the zinc that can all come from your multivitamin and then magnesium, you're probably going to have that on the side and some form of long chain omega three.

If you're not eating that, then you can have to look at algae, you know, as a supplement. Thank you. I was going to say I show up at your clinic and say, I get it, and I want to optimize my omega three fatty acid level.

Do you mind if I do it with algae oil based capsules? They're great. They're awesome. And flax seed, chia seeds, hemp parts, walnuts. I don't think you're going to change your long chain omega threes with chia seeds and flax seeds.

They're great fiber. They have lignans. They have all sorts of healthy benefits. Right. But if you really want to have the long chain omega three benefit, you're going to need to use some form of seed, save that, you know, like from seafood, which includes algae.

You could either eat an allergy salad for five days a week or take an algae oil extract. Right, like a seaweed salad or, if you're doing vegan sushi, the nori roll has all that.

But of course, many providers online provide algae oil based omega three capsules, and I think that's the easiest way to ensure you're getting there, because probably most people aren't eating adequate sea salt and seaweed salad five days a week.

I agree, and as you know, ethically Asian, it's an adaptive taste. So a multi magnesium and an algae supplement that to me along with, you know, a healthy plant based Mediterranean diet is really the the optimal way of meeting your nutrient needs and your food needs.

Now that's I just excellent. Tell us more about, I know you do focus a bit on hormone measurement and optimization at your clinic. Any observations? Do you have a sense that, that has, facilitated the anti-aging, and restoration of more normal, arterial vascular Aids in your patients?

We looked at testosterone levels in men and estrogen levels in women, and we did not find a relationship to carotid IMT. But having said that, in terms of quality of life for people who have low levels, they feel dramatically better if you restore them to normal.

I'm not trying to make teenagers out of, you know, 60 year old men, but I do believe that if your levels are low and you have symptoms, your your your quality of life, your energy, your zest, your sexual function, your mental function all improved dramatically if you're restoring them to normal for men and women.

Excellent. Now I share that view. How about you're an expert on the microbiome and the link between, you know, all disease begins in the gut. Now, of course, we're talking a lot about food for plaque reversal, but specifically the microbiome.

Are there measurements. Are there probiotics. How do you handle those patients in your clinic? Well, you know, it's in I had to rewrite this book. That 30 day heart tune up.

Because I didn't have anything on the microbiome when I wrote it in 2016. And in the last 6 or 7 years, there's been a ton of published literature, thousands of articles showing that, your gut microbiome, when you add the right species, can lower blood pressure, lower blood sugar, help you lose weight, lower inflammation, and lower your cholesterol.

All the major risk factors for heart disease, except for quitting smoking. So, you know, and there's two ways to do that. We can either add these species in.

Microbiome, Probiotics, and Heart Risk

And I mentioned, you know, the specific ones that I like the best in the book. But you know, we're looking at multiple ones, not just a single one, at least ten, preferably 25 to 30 billion a day for several months to restore the gut.

And then you need to eat fiber, long term plant food, vegetable, fruit, beans. Not those are the fibers that we're that don't raise blood sugar levels.

They help to stabilize them. And they feed the gut microbiome. And we need to eat, you know, at least ten servings a day of these fiber rich foods to support the gut microbes that are good.

And then the last thing is, we now know that people who eat a lot of red meat make, a compound tmao trimethylamine oxide. That increases your risk of heart disease by 62%.

That's three times the risk of how high cholesterol you know. So avoiding red meat, buying more of a mediterranean plant based eating program lowers tmao and helps restore the gut microbiome to a more natural state.

Well, thanks for sharing that. We're talking to Stanley Hazen from the Cleveland Clinic, who, is obviously the king of Tmao research and, right. It's great to hear it from multiple people, all over, just in case the audience, big audience didn't see the cover of your book.

It's the 30 day heart tune up, published in 2015, but I know it's been, rereleased in 2021, all updated. You did a lot

of work, and it really is what the title calls it.

A breakthrough medical plan to prevent and reverse heart disease. And I would highly recommend that people look for you. Held back a minute on the comment that in the book, you list some specific strains or products in the probiotic world.

If you have them on the tip of your lips and you want to share them, that's fine. People are always hungry for them, especially the Lactobacillus species and the different bacterium.

And like plant Harris Plantarum is really has been shown to help with weight loss. Blood pressure and blood sugar control. All right. I think somebody out there is probably asking the question.

All right. You've got 17 years of this carotid reversal data. You've identified factors. You've actually pioneered the field, at all. What what about the heart though.

And you know, so talk a bit about your experience, the relationship between these carotid IMT studies and what's going on in your patients coronary arteries and how, you believe that benefited them at the same rate?

Well, at first, I think back in the beginning, I was doing a heart cath and a crowded IMT the same day. So initially I did both. But after having done that for several years, I actually never had a patient who had a significant difference in their two scores.

And every time I did a heart cath, I was exposing them to a dose of radiation that over time will increase. You know, tiny increased risk for, cancer.

So, you know, I and then there was data that came out where they compared and, you know, cap data, you know, probably our strongest look at the arteries, although it's invasive and it has like a 1% major morbidity risk with carotid IMT.

And they got 97% the same result. So yes, there could be 3% of people who have something different going on in their heart than they do in their carotid.

But, you know, there's no risk. As you said, you explained very well. There's no risk to this ultrasound technique. There's no radiation. It's lower cost.

There's no die. I mean, it's simple and beautiful and, you know, it reflects the plaque growth throughout the artery. You're not just growing it in your right arm and not your left either.

Growing it all over or not growing it at all. So, I mean, the data to me was really strong. And so I, I would rarely look at bones. I usually just look at carotid IMT.

Yeah. Fascinating. We had experience with lipoprotein little a is that a routine measurement in your lab panel? Is your lab panel pretty broad? Always looked at advanced lipid profiles.

You know, if you're just looking at total cholesterol, you're going to miss at least 50% of people at risk. You know, people with heart disease, 50% have normal cholesterol.

We need to be looking at the size of your cholesterol. If we're really looking at aspect. And that's a problem with sugar, sugar and grain flour when you eat them, not only are you more inflamed and you get that sugar spike, but yet it creates small, tiny little bubbles of LDL cholesterol that are much more likely to be oxidized.

And the worst of them all is LP little AA. That's a very small, shrunken, form of LDL that causes more clotting, more inflammation, and is is really a marker for heart disease.

But here's the good news. If you have high LP, a little AA, and you follow a program that you and I would

recommend, you can still shrink your plaque over time.

Despite that, you still have high LP little A it's only a small percentage of your cholesterol, and doing most things right allows you to shrink plaque.

But if you have high LP little AA and you follow the sad standard American diet, you're going to grow a lot more plaque than the average person.

Advanced Lipids, Coaching, and Stress Management

So watch out that that should be a real motivator, that you have the potential to grow plaque much faster than other people. If you have high LP or really small LDL particle size.

Yeah, fantastic. What do you surround your patients with? You've found any health coaches? You are a chef, but you don't exactly have the time to, get in the kitchen.

Too much nowadays, I'm sure. Busy, busy life. Busy writing, busy practice. I mean, what what has pushed them down the road after that initial couple visits at the clinic?

Well, you know, I will. I do cook often. I think that the most important thing I do on my life is to prepare food and eat delicious, healthy food. So I, I believe in cooking. All of us.

No matter, no matter how busy I am, I'm still going to take the time to prepare a meal with real food instead of something that comes out of a package.

And my wife and I both cook probably half the time. So I mean mean my goal when I meet someone in the clinic is I usually ask, would you like to be younger, trimmer, fitter, mentally sharper, have better sexual function, and prevent or reverse heart disease?

But I ask them that. Let's face it, 99% of people say sure, yes I would. What do I have to do? Well, you're going to eat healthy plant based food. Real food.

You're going to meet your nutrient needs, you're going to be active, and you're going to take steps to manage your stress. And if you do those four things, you're going to achieve all those wonderful goals.

That's the motivation tool I use for my patients. And again, I know that you and I share, obviously, the constant recommendation of fitness appropriate for the patient and their physical condition.

I think we also share an interest in a device that the listeners have heard a little bit about, but a stress management tool off your phone or laptop called Hard Math.

And maybe just a little bit from you about your experience in the clinic. Maybe you use heart math, but what what do you got to say about that? Well, in the initial probably ten years, I wasn't aware of it.

And then I started recommending it casually. But in the last few years I became a much more committed. And I did it like a vital sign, just like measuring a blood pressure.

I would check my patient's heart mass score over a year. I think it's that important that it's heart. Math is a biofeedback tool that looks at your heart rate variability.

You know, it should be going up and down and up and down a gentle, smooth slope as we breathe. And and when we're stressed, it tends just to be elevated and flat and stiff, just like your arteries get stiff if you don't have that appropriate variability.

So and it's it's lovely in that it gives you a score. You're either green you know how to get calm. Yellow you're

stressed or red you're frazzled. So you can use it and you put it on like you clip it on your finger or you clip it on your ear.

It measures your heart rate, it gives you a score. So it teaches you how to get calm and relaxed. And I think that's a beautiful thing because many people are just frazzled all the time and they're clueless, you know, and that's really harmful to them.

They're burning out. So I think it's a wonderful tool for people to use. And I thought it was important enough that I used it as a vital sign to assess cardiovascular health.

I think it's great heart rate variability as a vital sign as measured through using, this, application, this wearable called Heart Math. It's it's brief.

It's ten minutes once a day, twice a day, a little clip, a little smartphone breathing program. And I think, you know, we're both attracted to it because of the research going back 40 plus years, Chili's and PTSD and VA hospital patients and, school performance and blood pressure response.

And it was sleep and relaxation. Yeah. I mean, really for something that's inexpensive because there is a little cost for this clip on to the air, but, well worth the benefits.

And, you know, some of you can do, sitting in a chair on an airplane before you go to bed. Really? Don't do it while you're driving. It might be the one to you, be fully aware when you're driving.

Well, any last comments? Because I think this has been fabulous. You know, you're a pioneer. You're, heart disease reversals, slayer. And there's not a lot that I can bring on, like you to fire up, people's commitment to healthier, better lives and investigation of their health.

So, as you know, the problem is, you know, if I had a final point I want to make is that most people are in denial and they're procrastinating, and they're thinking, I don't need to make a change till something happens.

But with heart issues, that's a really bad choice, as you know, because the third of the time your first symptom is you're dead a third of the time your person is, then you've had a stroke or a heart attack, and maybe now you're in heart failure permanently.

A third of people get diagnosed with symptoms or on a test like you and I might do, but that means two thirds of the time, something really bad happens to you and your family, and we can avoid that.

And not only can you prevent one of those events if you but you could feel better. You can have more energy, better sexual function, better mental function.

All of these things improve when you follow a lifestyle that matches your genes, genomic makeup and so don't procrastinate. Get started today and within 30 days you're going to feel fantastic for doing it.

Well, I'm going to suggest we take that last minute as a public service announcement, create a ad that's played all over the world, and I think we'll make more impact.

That was so, you know, passionate and spot on. So thank you, Doctor Stephen Massey. Tell everybody where they can most easily find you and read your books and, enjoy your wisdom and experience.

The books are available wherever books are sold. And for more information, join me and look at my blogs and recipes at doctor Masley.com www.drmasley.com.

Thank you so much. All right thank you and give my best to your wife.