Podcast Introduction and Guest Background

99% of heart diseases is preventable. And that's the beauty of this kind of medicine is that not only does it prevent catastrophic problems when you get older, but it's a more enjoyable way to live.

Welcome to the TBD Fit Podcast on Dr. Talks. I'm your host, Daniel Keeley, and I will be guiding you through this wellness journey in terms of optimizing health and longevity, where we unpack the science, the do's, and everything in between.

Come join us. Look forward to seeing you inside. Welcome back to the TBD Fit podcast. I'm your host, Daniel Keeley, a functional medicine practitioner focusing on regenerative and restorative medicine, bridging the gap between conventional health care and precision-based root cause healing.

Today, I am truly honored to have with me one of the pioneers in the field of integrative functional cardiology, Dr. Giovanni Campanile, And he is a Harvard-trained cardiologist and a former director of the Dean Ornish Intensive Cardiac Rehabilitation Program.

He is quadruple board certified in internal medicine, cardiology, interventional cardiolgy, and integrative holistic medicine. Which is obviously synonymous with my middle name.

So super excited to get him on the show. His impressive career includes serving as a cardiologists to former president George H. W. Bush, conducting research at the Farringham heart study and leading and integrative medicine programs such as Rutgers, Duke, and Yale.

Obviously, Dr. Campanile has quite the expensive history, which we're going to get into today, but he's also the author of the Sicilian Secret Diet Plan, which now we're talking the same love language because that goes back to my roots.

He's the cohost of the Sicilian secret diet podcast. And so I'm super interested to see what that secret is about and a leading voice in the longevity and heart health movement.

Welcome to the show. Well, Daniel, thank you. My honor. It's a real pleasure to be with you today. So I love to open up each episode by learning more about the guests, identifying what their purpose is and how they got into what they're doing.

Well, I started out, you know, my career. Basically well way back when I used to go around doing house calls with my father who was a general practitioner and And I still you know I got I think I get interested in medicine because I Used to see the effect he would make on people's lives like he was just walking into like you he's an old-time He was he he passed away, but he wasn't old time and with a doctor's bag, we'd go to the patient's house and just his presence.

And he'd sit there and have coffee and cake and whatever. I could see that people just felt better and that stuck with me. Then later when I went to medical school, I became very interested in, originally I started out in orthopedics.

So I wanted to be an orthopaedic surgeon. But during my first year of that, just had the fortune of meeting some people that were in cardiology. And I got exposed to the newer techniques in interventional cardiology.

So I said, this is what I want to do. And then I, uh, you know, I trained up in Boston in the Harvard system and I had the fortune of meeting Dr. Joseph Pezzorno.

who was the president of the naturopathic school of medicine in Washington state. And he introduced me to natriopathic medicine, and then we decided to create a program to teach natiropathy medicine to allopath physicians.

So that really got me involved with this. Along the way, I met a whole bunch of really great people like Dr. Dean Ornish, who really discovered that with lifestyle change, you can actually reverse heart disease.

He wrote the book, Reversal Heart Disease, and he did the original studies that actually proved that you could reverse disease before that. No one really believed that that was possible.

You know, using no drugs, no procedures, nothing, just lifestyle change would take plaque and he would show these sophisticated kind of scans, cardiac PET scans where the blood flow in the heart would increase 300% after doing his treatment, which basically involves diet, exercise, stress reduction, and then connecting with others like group sessions.

And what's interesting about that is that. every, those are the four legs of his program. If you take away any one of the legs, like I used to think that the group sessions were, you know, I'm, i'm going to do this.

It's really not that important, but the groups sessions turned out to be super, super important. And I have patients that I took care of that. I became the director of.

Uh, reversal heart disease program on the East coast, and I still am in contact with groups that have been doing this for decades now. That's amazing.

So it's like, so. You know, it's amazing what we can achieve with this kind of medicine. So that's why I think that, uh, you know. I really don't like these terms like functional integrative, even though I call myself a functional cardiologist.

There's only one way to practice and you practice. You get the tools that are really good and use them when it's appropriate. And that's the way I look at medicine.

So what I have found is it sometimes often offensive how we have labeled things as holistic or alternative or, you know, kind of these secondhand therapies.

What you've done, I didn't realize until now, bridging the gap between conventional allopathic care and holistic care. I think that's essential.

Dean Ornish and the Four Pillars of Reversal

That's brilliant what you've been able to do both with Pizorno and others in terms of how you have been to grow your practice and the efficacy of patient outcomes certainly.

You're absolutely right. I think there's a disservice when we almost have this dichotomy or these kind of extreme ends of people now are seeking either one way or kind the other way, right?

And it's almost this black or white approach. And there is so much that happens in the gray area where healing happens, instead of these these kind of extremes, but let's dive into the four pillars actually.

Let's start there. let us unpack all four of them and maybe where sometimes you mentioned one is overlooked, what are the constituents that make up the 4 pillars that was able to achieve this reversal?

Well, the first is diet. The nutritional aspect of our lives is very important and there's really no way, one way of eating. It's all personalized depending on your genetics and your constitutional makeup, your exercise level.

But the way you eat is important. And the ways I look at it, I don't like looking at food like Uh, like saying what you

shouldn't eat. I like looking at what should eat, you know, the things that are, uh, very good.

And I, I usually tend to go towards a, a sensible way of eating, Mediterranean style diet. It doesn't necessarily have to be Mediterranean because that can be actually offensive to some people that.

That are not from the Mediterranean area. and so, You know a sensitive way where you eat everything and, um, and you don't eliminate any one food group.

And, uh, and you try to get all the benefits of. The plants, you know, the plants that we've evolved with, all of the polyphenols, of flavonoids and the, um, antioxidants that are in plants.

Meats, one of my big pet peeves about meat studies is that if you ever, if look at all, it's always processed meats. We've never had a study looking at quality meat, I think that If you eat quality meat, it's good for you.

The cows, if they are free range and they're eating all the polyphenols and all of the flavonoids or the plants, and you get that into their system and eat them.

It's a different experience than eating processed meat. So I think that eating good eggs, for instance, the choline and the perfect protein from eggs.

There's no way that's going to be bad for even though we know that there's data showing every week. It's a different study showing it's good. What I tell my patients is, eat eggs, but don't go overboard.

And then in my patient's, and it is personalized. I do certain advanced testing like Boston Heart or Vibrant testing, which tells us If you are a hyper absorber of saturated fats or not.

And what's interesting in the Dean Ornish program. Um, and I'm, I don't necessarily use the diet that was used in Dean Orange because it's 10% fat vegetarian diet.

I do use it sometimes. If someone comes to me that's. Needs bypass surgery and they said, i don' want to have bypass or I want do everything I can. So for a certain period of time, do put them on a very restrictive.

vegetarian diet, and then I liberalize it to a more Mediterranean diet. But the dietary interventions can make a big difference. And so by knowing if you're a hyper absorber of saturated fats, you probably will respond to lowering saturated fats if you have problems.

When a patient comes to me and says, you know, what are my risk factors? I look at all the risk vectors and I looked at their arteries, and there's newer technology that we have today with artificial intelligence ovary that if your arteries have been affected by your diet or by cholesterol and that sort of thing.

So we really don't care about cholesterol. We care what is that cholesterol harming you in any way. That's the important part of it. Is it haring you or is it not harping you?

I love that you said, we don't care about cholesterol. I don´t love what you say, but I loved that. You said it because you're looking at it through a very, very different lens, a modern medical lens.

And often cause you'll hear people, patients come all the time, you know, my LDL, that my HDL. There's so many components to that, before we unpack cholesterol, which is going to be obviously corporate for the discussion.

In terms of nutrition, what I like what you really highlighted is the context. Like the content certainly matters. What is someone trying to achieve? What I, we always say here is I suggest eat what your ancestors ate.

That's typically going to be the food that's going serve you best. So I don't put an Asian or someone of the orient on a Mediterranean diet. Um, their microbiome or the signature usually isn't reflective that they're going do better with that.

And in terms. Vegetarian or otherwise meat. Is foundational to life. I always say if it ran, um, ran walked or fly, it's, It's good to eat. If nature made it, if, uh, eat, If man made, stay away.

Like if nature baited, its okay. It comes out of a plastic bag or box or process. As you said, Uh, probably doing as hard codes. No barcodes. There you go.

Why don't we get to look at a label, right? This is a health food, but you have to turn around and look the label. Like, stop and think for a second. How is there a Health section in a healthy store?

It's like we've normalized the abnormal and we don' recognize that in our fast food convenience based culture. A lot of cardiac issues, it's more a blood sugar to me, dysregulation, which then kind of upregulates the plaque and now you the narrowing of the arteries.

The saturated fat is certainly interesting. I mean, I don't do well with higher saturated-fat diets, so we do nutrigenomics testing in our practice as well to assess, okay, does someone respond well, to keto?

Not so fast. Context matter, the genes matter. Your environment matters. How close are you to the equator matters? Are you going to do better with carbohydrates?

That matters, So we dive into those details very, very effectively on a myopic level to ensure because nutrition is going to heal you or it's going hurt you.

There is no in between here. That to me, it is very binary in that regard. Because while we breathe about 30 pounds of air per day, we eat about the same amount over the week.

And so there is a lot of impact in terms of nutrition. We don't recognize, because when you said cholesterol good, cholesterol bad, eggs good eggs bad.

Choline, brain food, right? Interestingly, if you look at protein as an example, there's component of fat. And there's a component of protein. Uh, so in meat, like there is protein and there fat.

And in nature, as I say, nature made it perfect in order to absorb protein, you need a little bit of fat, what are we doing? We're just eating egg whites to enhance protein?

What is the bioavailability? Are we looking at that? I will be looking and I seasonally, I think grown in season. Is it fresh? Where are the nutrients?

You know, we, have, our own chickens and my son is, um, he went to medical school for two years. Hated it. Completely hated it. So, you know, he and I had a talk and said, there's so many unhappy doctors out there, we need another one.

He decided to follow his passion. And he's now a regenerative farmer in North Carolina. That's the thing that was meant for him to do. Fascinating. We look at the, the eggs that he, you know, he makes, He gives his chickens, who's got 25, 30 chickens and he gives them the best possible feed.

And, uh, and these eggs are just phenomenal. They're full of omega-3, they're of choline, full protein. But the other thing that he does is he creates soil.

I think one of the problems we have is our soil is completely depleted. One of slides I show my patients, the way I run my practice is it's sort of like a slide show.

And I showed them every picture I could possibly show about everything I talk about, because that's education more than anything. So I shown them this picture of a real plant in real soil that goes down like six feet, super rich.

Uh, and you know, that's where the plants get older nutrition. So if you're eating a plant like that, you are getting the

nutrition you need. Then I show them a picture of a factory farm with three inches of soil.

And they said, you know, there's no way that plant is going to have any nutrition. In fact, studies have been shown, I think in Scientific American, that they looked at apples from the 1950s and apples today.

You'd need about 25 apples to match the nutrition that was available in the 50s. So our food, this is part of the big problem is that not only are we overeating a lot of junk?

Even when we try to eat well, the food is depleted. And so, it's a very important issue for patients to understand is that, you know, It's not something that you can't overcome.

You just have to be aware of what we're dealing with. There's lots of studies looking at for example, the oxidative stress of foods. There's a study looking at one of these fast food breakfast sandwiches, and they measured TNF-alpha, which is a major inflammatory marker.

It's also a marker of cancer. And the TnF alpha not only went up, but it went and stayed up for about two or three hours after that breakfast sandwich.

If obviously, if you're not eating well on a regular, you know, your body can take this. If you have one of these sandwiches once a month. our bodies are very resilient, you can deal with it.

I don't want people to be perfect, I just want you to good 80, 90% of the time. But if you do this three times a day, like you're eating a fast food, a breakfast, lunch, and dinner, then your body never gets over this and you get this oxidative stress and inflammation.

That's really the foundational problem from a nutritional aspect is that we get this oxidative stress, inflammation, it affects the powerhouse of ourselves, the mitochondria.

And that really is, you know, when we, we think about anti-aging, We're thinking about, You know really the Mitochondria, The mitochondrion starts failing.

and if the mitochandria doesn't get the nutrition it needs, It's not going to make the energy you need. So everything in our bodies, including atherosclerosis has a mitochondrial basis to it.

so we have to take care of these things. You now we're learning about Everything, you know, I think this is the way I look at it, we're in an age of awareness.

We're learning about the microbiome, the friendly bugs in our gut. People are very interested.

Nutrition, Soil Quality, and Personalized Diet

I have a podcast called The Rest is Health and I interviewed a bunch of good people, but the You know, I remember you mentioned a keto diet, and I interviewed Dominic D'Agostino, who's like, he's probably the, the keto-diet guy.

And it's impressive how effective, used correctly, how something like that can be effective. But then there's a lot of controversy about things, you know.

I also interviewed Walter Longo, whose the fasting guy, his world renowned, I'm actually interviewing him again tomorrow. His opinion about protein, uh, is different from, let's say, Peter or Tia.

Peter TIA feels that we should be eating, you know, a lot of protein and, um, and his opinion is completely opposite. So, You know there's a of mixed information out there.

We don't know. You who's correct about these things, but that's why I think eating a sensible diet that similar to.

populations around the world that live well and long.

You know, we don't have to reinvent anything. These are populations like we did, like I mentioned to you before we got on, my wife and I wrote a book, and we went to Sicily.

We studied the elderly population. And we looked at centenarians and super centenerians, interviewed hundreds of people. The way they live is very simple.

They eat very well. And I think the key to their longevity is their lifestyle. They never sit down in front of a TV or a computer, they're always active, They eat very simple, good foods.

And then the most important thing for the elderly is they are well respected. the community and their children and grandchildren all come to them for advice.

So this is part of their connection. This is very important. interviewed Dr. Desposito, and he's a real, he is a cognitive guy and a neuroscientist. And he also in his work, connection with others is very important for cognition.

You know, you don't You get demented if you don't have good connections with friends and loved ones. And again, going back to the four legs of Dr. Dean Ornish's program, the connection part of it is very important.

So being connected with others, even though it sounds not important, it's a super important thing for our lives. So are you telling me right now, Giovanni on this podcast, the epitome or the zenith of the American dream with the white picket fence and the really big house and a nice car and flying first class and not talking to everyone and always being on my phone and So the point of being, uh, never, you know, I've taken care of a lot of people.

Uh, You know I was, to be, it used to, be an interventional cardiologist. So I did stents for patients having heart attacks and I, unfortunately, when you do that kind of work, deal with people that end up dying too, heart failure.

And I have never talked to one of my patients and they. When they're dying, they remember their car, their vacation in Hawaii. What they really want is their family around them and their friends.

That's what you really look for at the very end. And that goes to show you that's the most important thing in our lives. you know, are the people we love.

And that's in, and that turns out to be clinically very important. You know there are studies looking at, in my field, people going into the cath lab for a heart attack.

If they have their spouse next to them before they go in they're much better outcomes than someone who doesn't have that. It goes in alone. So it's a, You know, it's, a very important thing for humans to have that connection.

And in addition to, you know exercise and stress and, uh, stress reduction and the diet. We are more globalized and less connected. and I say it is my unlucky seven.

I know Peter T is force for horsemen and he's amended to add one or two more, but my lucky seven is in terms of, how people's health outcomes are going to accrue.

we're going. To me, the root of disease is going to be either bacterial, it's going be fungal, parasitic, viral. It's gonna be now heavy metal, environmental toxin, or stress.

And that's the thing I think you were alluding to the stress piece being less connected. When I evaluated the blue zones in Dan Wiener's work, to me it was a principle that Two things held true across all the blue zones.

Number one was community and second was movement. Nowhere in this was the acerola berries and the rosemary and Okinawa potatoes. They had their own natural nutrients.

Right? Covering from Mother Earth. They were rich with minerals that are, unfortunately, devoid as you need to. That had such an incredible taste. I remember my childhood growing up in my summers in Rome and Sicily.

When I eat a piece of fruit, it's like biting into honey. Right, when you eat piece a tomato here, is like, biting it into cardboard. No wonder kids do not have a proclivity for vegetables.

It's because it's fruit even, it is devoid of taste. So now we have these high fructose corn syrup with everything because our taste buds are so sweet.

We don't know what actually true food can taste like because the soil is so depleted and devoi of minerals. But beside that is if you look in a lot of these blue zones, nursing homes don t exist.

You don You were elderly. The elderly, there's so much sage there and there is so many reverence. In Italy, as an example, you build generational homes.

It's such a waste of talent. is a, you know, they're a depository of wisdom that you can't replicate. And no matter, how many Google or AI you use, You cannot replicate the wisdom of the elderly.

We in this country, and it's, I don't like to talk disparagingly about United States because I love America and I like, we do so many great things, except that we have such a an advanced society that we lose track of what's really important.

I have my nephews on Wall Street, and now he's not doing as much, but him and his buddies on wall street, they spend 10, 12 hours in front of a computer all day long.

And it's like, there's probably nothing more unhealthy than that. It's natural for us to do that, we need to be outside and get light, uh, you know, an hour of light in the morning, uh and, and light, several hours of like during the day move, just moving.

We don't have to, um, do, I like the data on high intensity interval training and all the exercise and I do tell my page, but you really don t need to do that.

I mean, as long as you move during a day and you're outside, we've a lot of people don't ever get outside. It's, you know, the light energy that comes in through our skin and through your eyes is very important.

And we lose that. We lose the circadian effect. There's energy we get from light. So, living, like you said, in these blue zones, which are all over the world.

But when I go to Sicily with my wife, because my is Sicilian, and I'm the same way. If I have a peach coming from the ground that's from this volcanic soil, the peach, you know, like I sort of like, I'm stunned for a little bit.

I said, this is amazing. This is like the, the tie line to our book is live well, deliciously. So you have to, um, that's, That's I think you really need to live your life delicious.

And that means not just food, but, You know everything about your. You have. To enjoy your lives. and, and that I, think that the biggest component of longevity is living your as enjoyably as possible, and food is a big component of that.

Italians tend to be obsessed with food. I don't think there's anything wrong with that, I think we think about food all the time. My wife is functional psychiatrist, very busy during the day, but we have never not had dinner together with our kids.

When they were in our house, we have had family dinners. Like the thing we look forward to the most is a family dinner. We get together with the family every Sunday.

Uh, when my parents were alive, you know, that was the greatest moments is just getting together, um, and arguing about stuff and talking and, uh, eating, very, important.

I love America as well. This is an incredible capitalistic society. But again, to our detriment, some of my most unhealthiest patients are my more successful because why?

They're burning the candle on both ends. The beauty of the Italian culture, the premise of dolce farmini, and the beauty in doing nothing, Right. And that's a little bit hyperbole.

It's the enjoyment of life, but understanding the priorities and the balance. Right? So to me, I call it the four F's of Italy. Its family, its football, it's food, and then the last F will reserve for another time.

But it's really the enjoyment and understanding what truly matters, right? We're all going to pass. We might as well enjoy our time. Here everything is work, work work until you've burnt out, but you recruit a decent amount of wealth and then you work harder and you just press the gas even more.

You caffeinate or you, I mean, fast food, you shove food in your face to get on to the next task. And we've lost the art of. priority and balance. And again, it's only to our detriment.

So in terms of Walter Longo's work, I'm a huge proponent of his, Peter Tia's, work likewise. It's interesting because you do have this kind of, again polarity.

I typically find the answer is somewhere in the middle. A huge component of the fasting mimicking diet. Peter's worked through Dr. Gabriel Lyon and muscle medicine, if you will, and adequate protein intake.

mTOR and stimulating muscle protein synthesis through a threshold of leucine. But the problem becomes, and I see this too often within the training community and athletes especially, we're constantly on this, We need more.

We're pushing the gas pedal harder. But we're not cycling through AMPK or this kind of autophagy or repair. We're just constantly, we want to build and grow.

Just like in our businesses, you want a build in grow and it's nonstop. So we don't cycle through these phases anymore, much like the light and day, right?

Light is a nutrient, so too is night. The seasonal, the feast, The famine cycles. And I think that's the balance that we have. we've lost touch. So that's why I always say we're no longer living in congruent with our evolutionary biology and we'll only becoming more sick.

And while our lifespan might elongate because of hygiene and medical practices in our environments, but our health span certainly somehow is getting worse.

Let's go back now to cardiovascular disease, which kills one in two people globally. If I look at my genes, my great grandfather died in his sleep at 104 in Sicily, natural causes, lived a healthy life.

In fact, when I visited one of my best friends, her grandfather was living in Sardinia, paradise. I shook his hand and he almost broke my hand. That's how firm his grip was.

What is correlated with cardiovascular health? Grip strength. We're no longer toiling the land, we're not longer doing manual labor. One in two had a farm in the 1900s, now it doesn't exist other than your son.

Good for him, that's the world I want to get into. But the premise of the story here is, so we are missing out on that piece of movement, or surely missing on a piece connection.

When I did the genetic test, I lost the Genetic Lottery. I have the various high-risk factor of cardiovascular incidents for oxidative stress, for inflammation, poor detoxification, or poor methylation, you name it.

In hundreds of reports, mine ranged almost worse, but yet my great-grandfather died in a sleep with 104. Same genetic lineage. My grandparents moved out of Sicily.

From the rural area into the urban area of Rome, work now in the industry, both passed from a cardiovascular incidence at 84 and 86 respectively. Same genetics.

Yeah. In line the story. It's interesting. The studies about that kind of thing is very, I don't know if you've read anything from Weston Price, uh, Western Price.

Fascinating. And so like one of my favorite reads about nutrition is Western price because he was a dentist and he studied the teeth and people populations around the world in 1930s.

So you really can't do that anymore. You know, like that doesn't exist. But what he found, which was fascinating was that, uh, you know we're so flexible in the way we can eat, from Eskimos eating a hundred percent animal fat diet to Uh, people in Africa, they were eating a hundred percent grains.

And, uh, so when we say don't eat something, the whole food group, it doesn't make sense. You know, our bodies are able to do it. As long as it's quality food, you know the longest living men in the world are from Sardinia and they live, their diet is 70% grains, So when people come to me and say.

Don't need grains? You what are we talking about? What are, what exactly are talking? There's grains and there's grain other, there was. You know, like the grains that the men in Sardinia are eating, that's great food.

When we talk about grains here, we're not really talking about the same food, it's a completely different class of food and Weston Price looked at people that were like these Eskimos that moved from their native village to a more modern area and they all got sick.

And then when they moved back, they got better again. Exposing our, you know, our genes to things that, taking our jeans out of context into a worse environment is going to make you sick.

That's just the, that's the way we are.

Longevity, Community, and Lifestyle in Blue Zones

We're designed. We've been the modern man for a second in the evolution of man. We're basically hunter-gatherers genetically. Things like cycling through something that mimics starvation, like what Walter Longo's work, Maybe good for us because it affects our ability to create our own stem cells, you know, we're.

You know we like the idea of this biohacking and using stem cell, but we have stemcells that we can we, can recruit and by doing the right, lifestyle things that, doing maybe a fasting mimicking diet every quarter or something like that.

Like he recommends, you know, maybe a very good thing to do. Our organs get smaller than they regenerate. Stem cells come out and they, uh, they clean out your body.

There's autophagy. It cleans you out. Instead of, going through this process where these cells are growing and not getting cleaned out properly. We're genetically, we're really good.

We had good starvation genes. We don't have good overabundance genes, you know, right now we're living in an age of over abundance. And, we have food and you go in any cabinet, any refrigerator in America, it's full of stuff.

It's just too readily available. Not that that's necessarily a bad thing because we've been starving all these for thousands of years. We need to know how to control ourselves and that's the problem.

It's controlling yourself when you're immersed in this high volume food environment. And I think that there are some

studies showing that you know, with polygenic risk scores that we use in cardiology for, but there's polyogenic risk course for obesity.

And if you take a poly, someone who has the poly-genetic risk score that's high for a obesity and put those people into a, uh, an obesogenic environment, which is all of the Western world, they become obese.

And I think there's a big correlation between the percentage of people that have a polygenic risk score for obesity and the amount of obesity actually present.

It correlates quite well. so many individuals that will come to see us. And I think the one thing that I just want to highlight, what we do extremely well is we are very, very myopic with nutrition here because nutrition is so personalized.

What works for one doesn't mean what's for none. That's why I always say, you know, eat the seasons, Organibus, wild caught, it's crazy you have to make that distinction.

But that's the case. I was just in Eastern Europe and it was mind blowing to me. Very much shifted my paradigm. We would go to the local market, buy produce in the morning and the next day it would be completely full of mold.

I never saw mold on garlic or dried fruit before. It was molding in front of my eyes. And I was like, my God, this is the epitome of organic. What we have at Whole Foods here is that last time the shelf was still about, you know, three to five days, if not a week, and called organic, no, that's spray contaminated.

We're just being poisoned. I'm not trying to undermine any sort of organization by any stretch. This is just what's allowed by the FDA here in the U. S.

and certain regulatory bodies. But I saw firsthand when you go to these other countries how very different life looks like. It starts with nutrition. Looking at someone's genes and you mentioned the A lot of people have this predisposition for adipogenesis or storing fat.

And if you look at the PGC1 alpha gene, which is very common and very coming to those individuals in times of famine, you would thrive. The problem is you have supermarkets.

24 hours a day, food is always prevalent, so we never go through these feast famine cycles. We never do periods of starvation. Interestingly, reference stem cells, we just now found mesenchymal stem cell in our teeth that our physicians are beginning to harvest to use as autologous stem-cell replacement.

It's incredible the innate design that we have, right? But we are just so far removed from that because our priorities have shifted and to our, to in some ways benefit, like technological advances have been remarkable.

And now with the advent of AI, things are moving quickly. So super excited what, you know, the frontier of medicine can look like and maybe even cardiovascular.

Let's maybe take one step back and highlight what are kind of the biggest shifts that you've seen in terms of knowledge and awareness, what some physicians maybe are still stuck in the archaic dinosaur era of how they're treating patients or just looking at things in in-terms of kind where things are going.

Well, my focus of my practice is prevention and reversal of heart disease. And one of the tools, you know, I use a lot of different things, but one other tools I used that's become fundamentally important is a CAT scan.

You probably heard of this, the CLEARly test. It's a cat scan, with contrast with AI ovary. And the benefit of this test is that we can find, you know, it's very easy for us to find someone who has severe disease.

You know if you have severe blockages in your corners, eating a chest pain, You're going to have an abnormal stress test. We put a stent in, we do a bypass.

But what's more important for me is finding subclinical atherosclerosis very early. And the beauty and the amazing thing about this new technology is that it not only can find a plaque, but it also can determine if the plaque is inflamed or not.

That's getting to the crux of prevention of heart attacks is the vulnerable plaque. It's a complicated system of lipids. To get a plaque in your artery, you have to have lipid.

Get into the wall through the endothelium through, the glycocalyx, which are protective layers in the arteries. We have 60,000 miles of arteries, so there's, we have these four shields in our arteries one's the, glyco, calyx and then the Endothelin the lipids have to make it through there and there are reasons why they can break down mostly lifestyle and Then once it gets into, The artery then it causes a foam cell and then that sets up this whole cascade and it becomes a plaque.

And then if the plaque becomes super inflamed, then what happens is it has a cap on it and that cap can be thin. It's not like a 90% blockage that causes problems, it's the 20%, 10% blocking that can rupture and you get a sudden blood clot in the artery and thats what a heart attack is.

we've never really had a good way to determine if you have a vulnerable plaque, except for now with Clearly. And I do a lot of these tests because I find it to be super helpful to determined.

It's good either way. If it's a normal looking artery, I have patients that come to me, they have multiple risk factors, their parents had disease, or brothers, and they come me they're very afraid that they are going to have problem.

if I did one of this tests and their arteries are clean, I don't have to torture them with drugs and things like that to get their cholesterol down. You know, we can use diet and we could use supplements and that kind of thing.

On the other hand, if we see like one of these plaques that's very dangerous in the widow maker area or something like, that that is inflamed, about to rupture, then i will be very aggressive in lowering their lipids and getting their APOB super low and especially the APB-A1 ratio because APoB is the thing that really causes problems and there's it's a little confusing because there is APL capital A1 which is a very good thing and then there lipoprotein small a, which is a very bad thing.

It's genetically directed, but the ratio B divided by capital A1 is really the thing that predicts future risk better than anything. So that's one of the markers I really focus in on.

And so, you know, that's, an approach that this is really revolutionized preventive cardiology, because now not only can you see the plaque initially, then we do serial studies and they have like comparative software and we can see, are you going in the right direction or not?

You know? Are you getting better? And, yeah, we were never able to do that before. We only went by, You come to a doctor, if you have high cholesterol, get a statin, and you go home, check in a few months later.

Now we have better ways of doing that. Plactomy only forms when your endothelium is injured from inflammation, toxins, mold, poor sleep, oxidative stress, infection, to name a few.

In terms of ApoB, apolipoprotein B, lipoprotene A, how are you addressing that naturally, if at all? I mean, are just going straight to certain medications or?

No, no, I usually… evaluate the patient for their risk first. And I use either the CLELY test, I do endothelial function test. I C-I-E-M-T, where we look at carotid endometria thickness, and try to get an idea Where you stand, if you're high risk, low risk medium risk.

And if your low-risk or low to medium- risk then we really focus in on the lifestyle. First of all, a clean environment because toxins are ubiquitous.

And there was a study from Italy, uh, looking at carotid endoarterectomies. They, you know, when you do a carota endorartorectomy, they operate on your caroterotomy.

And they take the plaque out and the pathologist can, can evaluate it. and they evaluated it for the first time for microplastics and a hundred percent had micro plastics in them.

So we have, and micro plasma is just one of the toxins we're exposed to, we are exposed a lot of toxins. So I tell my patients, first of all, you know, clean up your house, cleanup your act, get some reverse osmosis going, make sure you have good filters like Merv, at least Merve 13. Make sure your health environment is clean.

There's actually a study that recently came out of people using a HEPA filter in their bedroom. It lowered their blood pressure. By 10, 15 points. It's like just using a HEPA filter in your bedroom while you're sleeping.

So, you know, indoor, uh, pollution is a, is big deal because it gets, it, gets where the outdoor pollution. Is out there, but the indoor pollution gets concentrated inside the house.

You really have to be aware of that. Then I, I focus in on their, on the diet, start eating some good food. If you are like a. Eating poorly, like eating out a lot, fast food, a lotta packaged food.

Just clean that up because it's super important to do that. And then start moving, start exercising. It's very important. For heart health and that's been studied.

Also, you know as our heart ages our hard gets stiff and gets smaller actually and and by exercising properly You can it's shown that you can offset that and then sleeping, as you mentioned earlier sleep, sleep we In my career, before I started practicing this kind of medicine, I never asked patients about their sleep.

It would have been kind-of strange during my fellowship if I ever asked somebody, how are you sleeping? But now we know that that's so important. And again, each one of these factors is equally important, there's not one that is more important than the other.

So we try to get the patients to sleep better, good sleep hygiene, get that natural melatonin by getting the early morning light, getting that sunset light.

Getting all these low hanging fruit that most patients are not doing all this. Before we get into, there's some good things that we can do in terms of supplements or peptides or other things like that.

Modern Cardiology, Plaque, and Advanced Imaging

But before we get there, we have to do the basics and that's what it's all about. It's getting you into the ballpark with the basic. So my basis are the foundation five.

I say you got to eat right, sleep right move right talk right poop right. And my focus for the last decade has been what I call microbial medicine or the interplay of your microbiome in every biological system in your body, including the heart.

Each kind of organ has its own microbiome and now we see that. And now when you're saying you are extracting plaque and you assessing what's inside of it, often enough that's infection.

The question is just what? Where is the body trying to sequester to protect us? We see it in our brain with the beta amyloid plaque, right? With the tau tangles, the phosphorylated tau.

What happens is we're treating end stage, but the root is underneath the soil as you alluded to previously. And it's that lifestyle component that we're often overlooking, like the sleep.

Nutrition, equally so. I see so many clinics that are just over looking the component of nutrition or just say, yeah,

you know, drink less soda or eat more vegetables.

OK, but what about everything else? What is the context? Like, how much do you eat when you with Sasha and Panda's work in terms of the timing, which was a paradigm shifting scientific study, right?

I preface that more than anything now. Because it's not only we are not what we eat, we're also what will we digest, absorb and eliminate. How many of us have motility issues, right?

So it is not so simple, but it doesn't have to be complicated either. If you look at the centenarians again, they keep life very simple. And going back to OneNational5, I think that's critical.

Now going in terms of cholesterol, and I want to make a Let's pose the question here because again, I think one of the biggest misnomers to me of modern medicine is cholesterol and LDL.

But also looking at, you know, cholesterol in general, when I do the in vitro genomic tests, i can see I have a propensity for high cholesterol. So if I go in there to see cardiologists and we do a test, we see high-cholesterol, does that warrant a statin or hey, is it malpractice because actually I run high no matter what because that's my genetic tendency?

And perhaps maybe I should just avoid saturated fat. The conversation should be around, hey, maybe eat less processed meat, red meat or oxidative foods that are convenience fast food.

And looking at LDL as an example, LDL to me, it carries all the fat soluble vitamins like AD, EK, CoQ10, triglycerides for energy, carries cholesterol to all tissues of the body.

It's an antioxidant and it's a large part of our immune system. Uh, goes inside the blood vessels, which we address with endothelium, attaches to the, the above vessels to enter smooth muscle, to provide nutrients and remove waste.

But statins. We blocked that pathway that the liver uses to make cholesterol. It also blocks the livers ability to produce CoQ10 from tyrosine, which is very hard protective enzyme.

And so the question I often pose to cardiologists, uh, are statins helping you or are they hurting you? And, so I understand the context, but I'm eager to hear kind of, cause I see you.

I think the. In a perfect world, we wouldn't need to send, right? So if you look at modern hunter-gatherers, the average LDL cholesterol in Americans is over a hundred.

The average, LDl cholesterol, in babies or in modern, hunter gatherers is 20. So the question is, do we have, you know, we an epidemic of heart disease, but do also have an epidemic of high cholesterol because cholesterol, the lipoprotein molecule is like a little fire truck.

You know? I also interviewed Thomas Dayspring. I don't know if you've heard of him. He's a famous lipidologist. And very good. Great guy. So he thinks about the lipoprotein molecule as a fire truck.

And when you get exposed to something in your body, like you mentioned earlier, an infectious disease, it gets into your system, and it affects the endothelium.

Or a toxin affects it. all these lipoprotein molecules get recruited. And so if it's a one-time, momentary thing, they come and they go, and your lipids don't go up.

But since we're exposed to things on a chronic basis, what happens is, it' like inflammation. If inflammation is short-term, It's good for you. and if elevated lipid is a short term, its good.

It does good things. But if it's long-term, if its there for a long period of time, and on top of that, it becomes

pathological, like you mentioned carbohydrate intake.

If you're insulin resistant, then what happens is those lipid molecules, not only around, there's a lot of them, but then they become small and they can get into the endothelium very quickly.

And once that happens, you get the nidus of atherosclerosis and then it is a cascade. But, you know, and we know we can stop that from happening if we get your ApoB down to more normal levels.

We would rather do that without using drugs. And I don't like using drug. I hate giving patients statins, but I do use them because they're effective in patients that have problems.

You know if I see again of someone with a vulnerable plaque, if let's say you were my patient, You came to me and in your left main coronary artery you have an inflamed soft plaque.

That can kill you, you know, uh, 50 to 60% of the first sign of a heart attack is cardiac sudden death. So we're dealing with something lethal. If you have that problem, then we have to use bigger guns, right?

Because unfortunately that's the nature of that disease. But if we can avoid you from getting there to begin with, if I could. You know, if I, you know I I'm getting younger and younger patients coming to me and, uh, for anti-aging, which is kind of funny, but, yeah, I've got patients in their thirties that come to my practice because they're afraid.

Those are the best patients, because you can do a lot more in terms of reversing their disease before they get to be 65 and they got their heart attack.

So the idea is doing everything you can from a lifestyle base. Now the other part of this is this, is that only about 5% of your total body cholesterol is in the blood.

So even if we theoretically got your cholesterol down to zero, you still have 95% your of cholesterol. And the places in your body that need cholesterol, like your brain, your steroid hormones, the membranes of yourselves, The cholesterol is made locally.

Cholesterol is vital for life. So the idea that we could stop your brain from making cholesterol, is not true because cholesterol doesn't even pass through the blood brain barrier.

It doesn' go through it. But I still believe that I don't like the ideas of getting cholesterol too low. And I dont like using high dose statins because I think that statin There's no real good evidence that they affect mitochondria, but I believe that probably do, especially in patients that get muscle aches.

So we now have our drug armamentarium is increased. Like PCSK9 inhibitors are remarkable drugs. The person that discovered these, you know, like Repatha, these injectables is a woman named Hobbs.

She's probably going to win the Nobel prize for this. And this is, she found a group of people that had super low cholesterol, LDLs of 20, and no disease, no coronary disease.

And these people had… did not have the PCSK9 molecule genetically. So that's what the medicine is. It replicates the PCsK-9 molecules. And it's a very elegant way to lower your cholesterol.

Because what PCKS9 molecular inhibition does is it increases your LDL receptors. You just wash out the cholesterol from your body like it naturally should be doing.

I think that, you know, we have a bunch of risk factors we look at, right? We look the traditional ones like high blood pressure, smoking, but there's a lot of other ones that lead to high cholesterol and to coronary disease.

You know like hormone problems, like low estrogen, post-menopausal women, low testosterone in men. cancer treatments, these kind of atypical or risk factors are as important or more important than the, you know, the big risk

factor as we look at, and that's a big deal, so in men that come to me, I make sure they're You know, their testosterone is optimized in women, make sure their hormones are optimized.

You now, all these things are part of our lifestyle that, you know get out of whack and they contribute to these problems. Where do you wave the red flag with a CAC score and are you only arresting any sort of progression or have you within your patient population been able to reverse that score?

First of all, I don't really do calcium scores all that much, only in select subgroup populations because I do not find it to be all of that helpful. I think it is helpful in very young people if they have any calcium, not that I care about the score, if a young person has any amount of calcium they are at high risk.

And if an older person had very little calcium then that puts them at low risk. But I find the, what I really want to know, I don't want know about calcium.

I want want about soft plaque. And, and if someone has, you know soft, plaque, especially if it's inflamed soft black, that's the most important information we can get.

You know? Unfortunately, it a, a cat scan, uh, involves radiation, but it is a small amount of radiation. Our newer techniques, It's like one millisievert.

It is the equivalent of a mammogram. So, No amount of radiation is good, but we get a lot of background radiation. When you fly from New York to LA, you're getting a lotta radiation, so we have to choose what is worth getting radiation for, and this is probably an important thing to get radiation from.

So you mentioned CIMT, which we'll do here with a tech comment and do that. I know you mention some of the other testing. That's how we met actually at the longevity summit where Peter was speaking.

What else? Anything else that you're looking at considering? Obviously lifestyle is a huge one. We only addressed the two pillars though, community or connection and nutrition.

Um, do you want to unpack the other two as well? Well, the, other one that's very important is, uh, emotional stress and emotional status, you know, stress, and depression, very, important to address, um, those aspects of lifestyle because, we know that people that have depression.

um, have a worse outcome. And, uh, when someone has a heart attack, if they're depressed after the heart, heart attacked, they have six fold increase of dying within several years of the hard attack as opposed to someone who's not depressed.

So, you know, anxiety, depression, all kinds of, um emotional factors need to be addressed.

Stress, Prevention, and Functional Heart Health

Um, and that falls into line with the other aspect of the community and the aspect. If someone is well connected, then they have probably less chance of being depressed.

Loneliness is a huge problem in America. You know, many people are lonely and that increases mortality, actually increases, mortality significantly when you're alone and lonely.

So, you know these kind of factors, we teach people to, or recommend, to be grateful for what you have, forgive, find people that you may have had problems with, especially in the family.

Forgiveness is very powerful in getting you emotionally well. These kind of things go a long way to get you more connected with people and with the people you might have lost connections with.

The more you are connected, the better. Yeah, we saw during COVID obviously the rate of depression, I mean,

exponentially increase. Um, and suicide. Yeah.

Do you have any suspicion why all that again, as well as, is far more prevalent? Well, think it's our, you know, our advanced lifestyle advanced in quotes.

Uh, You know we, We live, uh, You know, I always tell my patients, you know when they're very, especially the wealthier patients who are giving up health for wealth.

You're working your ass off. but you're not getting healthier. You know, what's the point of being wealthy if you not healthy, right? So, um, you know we, if look at, I think it's changing to a certain extent, but if, uh, American firms as opposed to Italian firms, those are the two examples I know.

In Italy, people get like two months off a year. That's just accepted. Here you get a job and if they give you one week, When you first start, you're lucky.

And that to me is inhuman. It's like, uh, You can't. You cannot have downtime. So you need to have, Uh, a lifestyle that allows for good downtime and, um, so I think that our lifestyle in America where the reward is.

is more work, more productive you are. We are very productive in America. You know, we're like probably the most productive society in the world. And that may be great for corporations.

It's not great the individual health. If you go to one of these firms, the guy that sleeps three hours a night, doesn't take his vacation and is always there, he's the guys gets rewarded.

The guy who like takes all his vacation and he likes to live his life, he looks, gets looked at like he's a slack. So, you know, these are the, this is like, it's an attitudinal kind of thing that, is making us unhealthy in a way.

I know we're approaching on time here. What's maybe one truth, especially in terms of obviously cardiology or just in general, that you have changed? I mean, you may be previously adopted or held true that either no longer is accurate in the literature or something you've shifted in how you practice.

Well, I've changed significantly in my approach to patients. I used to put in stents, and we'd have this, what we called an oculostenotic-ocular reflex, or oculosthenotic reflex.

We see a blockage, we put a stent in. When I was putting in stents, that changed dramatically. You want to put a foreign body unless it's necessary. And we've now learned through a lot of studies that that is not the right approach.

The right approaches to, unless the patient's having a problem, leave it alone. and really change their lifestyle. And so my approach to automatically using drugs immediately, rather than lifestyle changes for patients, like for instance, high blood pressure, someone comes in with high pressure.

I would have immediately put them on a medicine first day. Now, I make sure that they change their diet, start exercising, do some kind of meditative practice or biofeedback.

I use heart math quite a bit and I have patients that now control their blood pressure. with heart math alone and hard math is as you know is a is the biofeedback we learn how to coordinate your breathing with your own heartbeat and very effective and it increases the parasympathetic nervous system.

heart rate variability goes up. And so, and that we see relaxation of a lot of things. When I measure, when I do those kinds of thing, I see the endothelial function getting better and the blood pressure coming down.

So, for me, it's much more pleasurable to do it that way than doing with medicine. So I use much, much less medicines than I used to because of that. And I think that's the major change from the beginning of my career to now.

How are you measuring endothelium function? Well, I use the Vendies. I mean, there's Endopath and Vendy's, but I just haven't used Vendi's. They're both good.

And I don't measure yet. But I'm thinking about measuring the glycocalyx with the device that measures the blood flow underneath the tongue. Because I think that's becoming more and more important.

A good friend that is a researcher at the Brigham and Women's and the is probably going to become a major, major focus of attention in terms of heart disease.

So I think that that's very important to evaluate and to treat. And that one way to know if your treatments are working is by measuring the flow of the, the way that glyco check works is the flows of arteries below your tongue.

The glycocalyx, since it's a hairy-like structure, it causes a laminar flow of the red cells. And if it is disrupted, the cells don't flow properly. So you can see if its flowing properly or not, and then whatever treatment you use can help improve that and see what's working.

As a functional medicine cardiologist, I like to get to the underlying cause of things rather than treating, you know, waiting till something happens.

That's why you were on the podcast together today. Yeah, and that specific device at Julia Ward, I had her on podcast several months ago. And so she privy me to the advice that's something that we're going to be doing in clinic in the new year.

Most of my practice now is telehealth, but certainly it's absolutely relevant. Where are things going? Where is medicine evolving to? What's incredible is just with some of these diagnostic tools that are very, very safe and effective, we can now understand quickly, you know, going back to kind of root cause, quote unquote, medicine, the underlying factor that's driving a lot of dysfunction or worse still disease.

This has been absolutely incredible. I have so many more questions, but I know we're approaching time here. Anything that you want to leave our audience with to wrap up or anything, any suggestions, anything to kind of tie everything together in terms of health meets wealth.

So it's funny you said that because I typically on the podcast, I always say stay healthy, stay wealthy, my friends. Because without health, there is no wealth and everything becomes trivial when your health is compromised.

But any last pieces of sage for our audiences? No, I think that we've covered a lot. I Think that, you know, one of the things that some people say is that a healthy person has a thousand dreams and an unhealthy person as one.

And that's the idea is as we, practitioners like you and I, we really, are focused in on prevention. And heart disease is almost completely preventable.

When we talk about heart diseases, we're talking about mostly atherosclerotic heart. You know, there are other heart, diseases like valvular problems and genetic issues that, you know don't really respond to, just you were born that way, but 99% of heart is preventible.

That's the beauty of this kind of medicine is that not only Does it prevent catastrophic problems when you get older, but it. It's a more enjoyable way to live.

You know, if you, you're eating well, your moving well. Your sleeping well your, like you said, pooping well because your gastrointestinal system is good.

Uh, You just enjoy life better. I, whenever one of those things is off for me, it ruins my day. And I would like to have all my days having, um, you know, those things in order.

And it's very easy, you just get into a habit. Like you brush your teeth, your exercise, and you have to get to the

point where if you don't exercise it is like a day that you do not brush you teeth.

You know you feel weird. So you, brush the teeth you exercise. Do your food, do your sleep. Hug your kids, hug your wife, husband, partner. It sounds simple but it You know, in America, we lose touch sometimes with this, how important these basic things are.

And they've been studied and they work in terms of prevention of the major catastrophic illnesses that occur, unfortunately, to many, you know a million Americans die of a heart attack every year.

Closing Thoughts on Family, Love, and Connection

So if we could prevent half of those, that's huge, like we got, COVID was a big problem, a million people died, but we have a many people die every single year from heart disease, and it's preventable.

It's completely in countries, And again, I'm not disparaging America, but in countries that are not like America. They're very simple. Like in the Vietnam war, American GIs, 18 years old when they did autopsies, a hundred percent of them had some fatty streaks at the beginning of atherosclerosis.

The Vietnamese boys had none. They had no disease because they have a different lifestyle, you know, than us. We have this rich, rich lifestyle and we just have to become, this new way of practicing medicine is more of an awareness of what is out there, what's happening, and the more where we are, You know, like you and myself, that's what we make.

That's our goal is to make our patients aware of what, what's going on. So that, basically, I think that the goal of our practices, where can people connect with you, find you get in touch with, you obviously your work, how do people play about two websites?

One is Corian and that spelled C O R A E O N that in Latin that means heart age. And then I have functionalheart.com. Uh, both of them are connected, but they're both my website.

So that's the easiest way to connect with me through the website and then have a podcast called the rest is health, you know, on Spotify and on an Apple podcasts and, uh, and we have book, we're writing a second book.

And the book is the Sicilian secret diet plan. This has been incredible. I look forward to meeting again in person, either stateside or better still in our mother and father land.

That would be great. It would incredibly great, I appreciate your time today. My pleasure. Your entire contribution to medicine as well and I love where you're taking things into the future.

and hopefully we will do a round two very soon in the new year. But until then, if everyone has enjoyed this episode as much as I have, please like, review, and subscribe.

Share this with someone who needs to hear it. Heart health is preventable. The last question that I ask every episode guest is if you could have one superpower, Giovanni, what would it be?

One superpower. Uh, I think it would be to have the old Italian style of the home with all my family and my kids living like one floor above me, one for below me.

That would make me super happy. Exactly what we're talking about offline. I agree more. Family is even friends, right? Friends are the family we choose.

But yeah, yeah. Yeah. And, uh, and dogs, I have dogs very close with that. My dog is like, super close to my dog. I mean, these, all these things are love and you know, it's all about love.

That's what it is all. Love always wins. I would love to have you as a neighbor. Giovanni and everyone else

listening, again, stay healthy, Stay wealthy.

Look forward to our next episode. Until then, thank you for listening and we will see you guys all back here very soon. Thank you for tuning in to the TBD Fit podcast on Dr.

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