

Why Mitochondria Are The Powerhouses Of The Heart

Laura Frontiero, FNP-BC
with **Joel Kahn, MD, FACC**



Laura Frontiero, FNP-BC

Welcome to the mitochondria conversation. Today I have the esteemed Dr. Joel Kahn. Hi, Dr. Kahn, welcome.

Joel Kahn, MD, FACC

Esteemed. STEAM, cause I use so much steam to my spinach. You got it.

Laura Frontiero, FNP-BC

That is the one. Well, in my mind, very esteemed. Let us introduce you to our audience. I do not know how anyone watching does not know you but you are a Cardiologist, Triple Board certified in internal medicine, cardiovascular medicine, and interventional cardiology. You are also a clinical professor of medicine. And you are known as America's Healthy Heart Doc and viewers can actually find you working still at your Kahn Center for Cardiac Longevity in Michigan. And I have to tell you that my journey to you occurred several years ago after you did a podcast with James Maskell. Evolution of Medicine. And I heard that podcast and your interview was the thing that opened my eyes to the possibility that there was something beyond what we are doing in Western medicine. So you are a huge impact in why I'm sitting here right now hosting a summit. Why I am doing what I do. So thank you so much for the impact.

Joel Kahn, MD, FACC

That was a really special evening and I'm glad it made an impact on you. You and I will help a lot of other people to do that again right now. I hope so.

Laura Frontiero, FNP-BC

Yes. So we are talking mitochondria today. You are the expert on this summit about heart and heart health. So we are going to get into what is important here about mitochondria and why this is so important for heart health. So could you start with sharing? Let us talk a little bit about statistics and what is going on with people in their heart health.

Joel Kahn, MD, FACC

Yeah. They have to be repeated because they are so shocking. I mean, we get dragged down by various health concerns. We have a big fentanyl crisis going on. We have obviously had the pandemic. We always have cancer issues and, you know, horrible. But still, more people will die this day, this month, this year from cardiovascular disease, the whole umbrella of heart and blood vessel-related illnesses than any other. And the last statistics I saw were about 2022 about 700,000 Americans a year die of cardiovascular disease just ahead of cancer. But it is been that way for 105 years, we are number one. It is not a title you really want. And COVID got close a couple of years ago, but it is dropped back off, thank goodness. And some shocking numbers and I do not really like to memorize this, but a thousand people a day drop dead suddenly. And it is sad if you are an older person with congestive heart failure and you are slowly dwindling in the families around you but to kiss a loved one or a father or a mother or a sibling, a parent goodbye and never talk to them again because a thousand people a day drop dead of cardiovascular disease. That is called sudden cardiac death. It seems like lately, we read about a bit more actors, musicians, and athletes, it is in the headlines a bit more. And they may actually be a bit more post-pandemic. Some of it is controversial, post-pandemic, and bad lifestyle choices.

COVID itself may have some impact on their blood vessels through spike protein damage. That is the viral illness, COVID. And of course, there is controversy about the vaccines and damaged arteries, I would not go down that path because we will get shut down and they would not let us talk anymore but that is the issue. I just want to pose a question, and I think I posed the question sort of in that James Maskell conversation a couple of years ago. You are getting to be 40 or 45 and you have a standard doctor or a functional medicine doctor and they mention things like a health checkup, like maybe a mammogram, or you do not believe in them and you get a thermogram or you get a colonoscopy, you get cologuard. I challenge you to say who has been told by their primary care doc and maybe even their function that check your heart, check your mitochondria in your heart because you are statistically more likely to drop dead. And there is sort of an assumption that that does not exist. That we have a breast cancer screening program and a cervical cancer screening program and a prostate cancer screening program and a colon cancer screening program.

But you just go through life. And the problem is heart disease slowly develops in those that it develops until the day that it can be, suddenly tragic, either a heart attack, emergency room, or death. If it reliably gave us years of warning, we could listen carefully for those clues. And maybe the most reliable one in guys is erectile dysfunction. And erectile dysfunction may be a three or four-year warning period before there actually might be heart symptoms, a heart attack. It is not as clear that there is such a clue in women. It might be fatigue and back pain and palpitations. But the bottom line this all messages or the next few minutes that we are conversing, let us talk about this amazing burden of heart disease and the impact it has on heart function which relates to mitochondria because mitochondria drive the heart, making the heart function and early detection be as aggressive. And I listen to your introduction. I try to avoid excessive Western medicine. A lot of what I do with patients is reassure me, you do not have heart disease. You do

not need those prescription drugs. You just need a lifestyle. And some of it is really an application of very high-tech Western medicine. And that is where we are talking about here, early detection of heart disease. So we got to drop these numbers. They are just tragic numbers.

Laura Frontiero, FNP-BC

You know, what impacted me when I listen to that interview all those years ago was your discussion about how you are an interventional cardiologist and you did a lot of procedures, put a lot of stents into people, and then you came to this realization that that was not the solution and that there were other ways to help save people's lives. And that was not working. And that is when my eyes opened big and I went, What? This cardiologist is saying we should be doing less procedures and doing more lifestyle things.

Joel Kahn, MD, FACC

So I have given up doing what are very lucrative procedures, gastrulation, and stents to focus solely on usually lower-paying preventive strategies. But it is the right thing to do. And frankly, it is a wide-open field. There are lots of cardiologists doing procedures and there is sadly a very small percentage that is talking. You know, as I say, hashtag, prevent, not stent. Why do not you never get heart disease or why do not you find out about it so early that it never becomes a serious problem? These are very doable. They are actually not elite or expensive concepts either. And just to tie it in, you know, we will have a healthy heart with a healthy mind. Let us just take mitochondria for a minute because I do want to give justice to it. If we have got that, we do not think about it. We are all busy with our life. We have got this gorgeous heart beating 60, 70 times a minute, over 100,000 times a day. It is beating and it requires tremendous energy. This little tiny muscle the size a little bigger than a tennis ball pumps over five gallons a minute of blood through the body, like a torrent all the way up to the brain, all the way down to the toes.

We have got to get it all the way back up to the lungs to pick up oxygen. It takes tremendous energy. And we have also learned it does not just take energy to contract and push the blood through the body. The heart has to relax and let the blood fill back up for the next cycle. That takes energy to its energy. I believe the statement is correct that there are more mitochondria per cell in the heart than in any other organ in the body. I know the brain is pretty close and I do not want to absolutely say that the heart is overtaking the brain. But given the intense muscular activity of the heart, I think it is the heart's number one for mitochondrial density and it requires lots of blood flow. And we are talking here about early detection of heart disease. We want healthy heart muscle and healthy mitochondria. You need healthy blood vessels, big blood vessels. And there are also the small ones called microvascular circulation. You want to keep them all healthy and you want to have the right nutrients. So your mitochondria work. The single most scientifically backed supplement in the literature, not all kinds of it, is actually coenzyme Q10. A recent giant meta-analysis of almost a million subjects found that if we used coenzyme Q10, sometimes called CoQ10, sometimes called Ubiquinone. But mitochondrial support for the heart and other muscles, but it is easy for the heart to lower blood pressure, lowers cholesterol a bit, take away palpitations, and is great for migraines. Many other uses for CoQ10, you actually

can reduce cardiovascular death by about a third and many vitamins. We do not have that data. People joke that vitamins are expensive urine and standard doctors and cardiologists often tell patients you do not need that long list of supplements. You got coenzyme Q10 on there. You got better mitochondria back than previously. I do consult on a lot of patients with shortness of breath, actual congestive heart failure, and sometimes hearts that have been weakened by previous heart attacks or blood pressure and that is a mitochondrial disaster. And we have so much to offer there. That is some of the most biochemical kinds of the game plan. How can I support your heart's mitochondrial pathway? Part of it is eliminating toxins, things like heavy metals and pesticides, or phosphates, and just a super clean lifestyle and heavy metals particularly. It is very easy. It is not new agents in our cardiology literature that an accumulation of cadmium, lead mercury within the heart itself can cause serious disease and is very common and can be very lethal and can be measured and can work to detoxify and eliminate. It is certainly not a standard part of medicine, but it is important. And I urge everybody, get that done, get some heavy metal testing.

We live in 2023 where we are in a polluted area. And get your mitochondria working better by eliminating toxins, and then you can create this whole mitochondrial support with coenzyme Q10 and ribose and taurine, and sometimes magnesium and L-carnitine. And there are all these other wonderful prescription drugs for people with advanced cardiac disease and heart failure. But usually, my role is to bring in a bit of the natural layer on top of the standard. I can not discount all the advances that have happened. But so I just wanted to spend 5 minutes on mitochondria because the heart is a mitochondrial organ. And it is just something that is talked about a lot when you go visit your internist or your family doctor or your cardiologist.

Laura Frontiero, FNP-BC

I would love it if we can have a discussion, if you would, about cholesterol. Could you let us know? I feel like there is a lot of conflicting information out there about cholesterol and what is the good number. I can remember back when I started practicing medicine 20 years ago, the level of LDL that was acceptable was around 130. Now it is around 100. I prescribe more statins than probably any other drug. And I would love to know what your thoughts are on this. I get people asking me all the time, how do I do this naturally? What's really dangerous? What's really safe? And also, can you talk about what is important about cholesterol? And are we doing damage by lowering cholesterol too much?

Joel Kahn, MD, FACC

I will give you my spin on it but it is a spin from a lot of patient care and a lot of research and writing and learning. In fact, I was listening to a 45-minute lecture on this topic just before I signed on the Zoom and had a little break between patients' cholesterol. Would not matter if there was not some evidence that in some people, cholesterol accumulates in blood vessels in the lining of blood vessels. Then they will feel them in the intima blood vessels. And cholesterol can be part of the pathology that narrows blood vessels and causes symptoms like shortness of breath or angina, chest pain, or cholesterol could be part of the syndrome that causes heart

attacks, strokes, and death. There is no question. The pathologist told us over 100 years ago, if you have a clogged artery in the leg and a brain, and a heart, part of the chemistry of that garbage in the artery is the chemical cholesterol. There is no sugar in arteries. It absolutely has excess. Sugar in the diet is a factor in poor health, including developing clogged arteries. It is taking a while to get to that conclusion, but there is absolutely cholesterol in the arteries. And the only question is, is the level in the blood related to what is in the artery wall? Is the level of the diet related towards an area?

Well, these have been very tough questions over the years. So that our liver makes cholesterol. Is that good? It is absolutely good. We absolutely need cholesterol to support our hormones and our sex hormones and our cortisol and our vitamin D, we all know that. Is there any question that in some people, cholesterol damages arteries? There is not. There is a type of scientific analysis called MR, Mendelian Randomization. There are people born from birth that is redundant that make a little more cholesterol than the average public. And there are people due to genetic snips and there are people that are born that make just a little bit less cholesterol than the average in the public. And because that difference starts at birth, it is through your whole life, by the time you look at them at age 40 or 50, the amount of heart attacks, strokes, and death is dramatically different. There is really no controversy and I keep emphasizing in some people an elevated predominantly LDL cholesterol. It can lead arteries to become a disease, leading to what we call strokes, heart attacks, bypass stents, and death.

The challenges were so different biologically, my favorite word in the last five years is precision medicine and I already got a second favorite word, personalized medicine. And this is the challenge and this is what has become so hard. You mentioned we got two people, relatively similar, 45 years old. One has an LDL of 130 LDL cholesterol and one has an LDL cholesterol. 130. They may be dramatically different in how their arteries are. And the current medical model is they are both going to get ten milligrams of Atorvastatin lipitor, hopefully after three to six months of some diet, exercise, weight loss, and lifestyle recommendations, but probably not. But they can be very different. So one of the biggest and most important messages, please, everybody just write this down, is that people that do not have atherosclerosis scientifically do not need prescription medicine for cholesterol. I have patients in my practice. This may sound radical and I'm a statin prescriber and I'm a cholesterol believer, but if you have a heart calcium scan done, a \$75 to \$99 test and it comes back zero and you are about 45 or 48 or 51 years old. The science is overwhelming. You do not benefit from prescription drugs and you can allow the LDL cholesterol to stay elevated. There was a recent study in 2023 called the Western Denmark Heart Registry. LDL cholesterol is over 190 with a calcium score. Zero did not result in an increased risk of any cardiovascular damage over about four years and part of the study 16 years the other part of the study is not to encourage people to have super high cholesterol, but it is to ask the question, do I have a super high cholesterol in clean arteries or do I have a super high cholesterol and I'm starting to develop the disease. And there are two tests.

One is an ultrasound of the carotid arteries. The best version is called the CIMT Carotid Interval, medial thickness ultrasound, quick little test, no radiation. You got no plaque. You probably do not need prescription therapy. Work on your diet, eat a little more oatmeal, have a couple more ate a mommy, have a little ground flaxseed on your salad or something, and get some gym time in. But if you have got a plaque and it says, you know you are 45 years old, but your arteries are like a 57-year-old man or woman, you probably need to get a little bit more aggressive and then even probably a little better if this calcium CT scan requires a prescription. Usually from a provider is less radiation than a mammogram, no injection, no needle. It is available at every hospital in the United States except for the smallest. And if you have an LDL cholesterol of 150, but you have a heart calcium CT scan of zero, even the very stodgy American Heart Association says you do not benefit from Lipitor and Crestor. You benefit from concentrating on lifestyle and diet. So it is not such a simple black, white, yes, no. It is about precision medicine, but it is so easy and inexpensive to get these vascular tests and ask the intelligent question, why am I taking a drug if I do not have the disease?

If you do not have a disease, you do not need a prescription drug. If you have the disease, and we should be getting these heart tests either the harder-to-find carotid ultrasound or those simpler-to-obtain heart calcium ct scans. Just like we think about a mammogram and a colonoscopy and a digital rectal and a cervical exam in a woman. This should be a routine part. It should be more important than all the others because heart disease is so much more common. Do it around age 40 or 45 and repeat it in five or seven years and sort it out. Now I just want to go off a little bit, but the last trial is a risk factor for early heart attack, stroke, and death. It is not the risk factor. There are many. There is 20 and my mind always is blown off, you know, a little firework when I'm seeing a new patient. What's their blood sugar, insulin resistance, what is their light bulb protein, and the other cholesterol that about 20 or 25% of us can make in our liver and 75% of us can not make. And that is how I explain to patients, 100% of us make LDL cholesterol, and maybe 20 to 25 make two kinds of cholesterol. The other one is called lipoproteins A. It can be very, very important in people's simple little blood tests. Everybody should have one.

And I said insulin resistance. What is your blood pressure? Blood pressure is the big elephant in the room for so many people. What is your sleep status? What is your sleep apnea stars? Which inflammation status? TMO I would not go off on a tangent there. Nitric oxide production, endothelial function. So you can have a high cholesterol in clean arteries because maybe all those other factors are in good shape and you can have a relatively modest LDL, even in a totally normal range LDL cholesterol and have abnormal vascular studies because maybe it is something else, maybe it is the lipoprotein A. So I do not want to make it too complex. It is actually pretty simple. You need about ten blood tests and one or both of these vascular imaging tests, and you are in a really precise place to know, am I in good shape? Am I rotting? Do I need prescription drugs? Do I just be a regular? What's the plan?

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Laura Frontiero, FNP-BC

Well, I think this is really important. Everyone watching right now, your time of investment and watching this summit is worth this 5 minutes that you just got from Dr. Kahn, because here is what I know. Working in family medicine and internal medicine for two decades, not everyone knows who has a prescription pad. What you just said. So what many family practice doctors are doing is just looking at the cholesterol level and just gauging, well, you need a prescription based on this and they do not know what it is.

Joel Kahn, MD, FACC

I do not know if that is going to be something I can read. But just to tell you the frequency, I have a preprinted prescription pad. You should encourage your provider to have the same. You know, there is no iodine injection. It is officially a C, D calcium scoring. There is a CPT code. That is what the insurance companies want. But this is self-pay. Usually, you pay 75 or \$90 and get it done. I just wanted to point that out because.

Laura Frontiero, FNP-BC

Yeah.

Joel Kahn, MD, FACC

That is what primary care doctors should have and say, okay, here is your script for your colon as could be or your mammogram, and here is your heart. Calcium CD scan. And let us define if you are at risk or not because there are a thousand people a day dropping dead. Most of them would have flunked that test big time. And we would have had years to get a stress test and evaluate the full spectrum. Like I said, of all these blood factors that promote atherosclerosis and then institute a plan of hopefully mainly lifestyle and supplements, really cool data. I will just give a shout-out. I have been waiting for a study that Berberine, which is a very commonly used supplement in the integrated world, may reduce atherosclerosis. So the first human study with Berberine showing it helps shrink plaque came out.

Laura Frontiero, FNP-BC

Wow. I'm surprised who funded that. There is no money.

Joel Kahn, MD, FACC

The Chinese come from China because Berberine is part of traditional Chinese medicine. It was a small study, but I just point out there is so much. So, Doc, why do I want to know if I have some plaque? I feel fine. I do not want bad news because there are simple natural things to do. bergamot berberinem aged garlic. I am a big fan of a supplement pycnogenol which is French maritime pine bark but that is another topic you know that they are all mitochondria too.

Laura Frontiero, FNP-BC

Yes. And so back to the mitochondria support. I mean, we are here, people are here booing because they want to know how to improve their energy. And you and I know that if the heart is

not functioning optimally, this is going to affect the way you experience energy throughout your day. You are going to have less energy throughout the day. You are going to have slumps throughout the day. So heart health is a really important part of this energy discussion. So could you talk about the many directions we can go here in this conversation. We can talk about drugs that interfere with heart energy production. We can talk about the lifestyle that interferes with heart energy production. Why do not you decide? What do you want to do and where do you want to go?

Joel Kahn, MD, FACC

Since we brought up the topic of LDL cholesterol and statins, I mean, the point I'm making in the last 10 minutes is, you know, you prescribe statins. I prescribed statins, and drugs like Lipitor and Crestor. And in many cases, that is an absolutely appropriate thing. Somebody who's had bypass stents, somebody who has clearly identified a high amount of plaque they did not know about. But the CT scan or the crowded scan showed that statins may be necessary. But I'll talk to you about it. Absolutely fascinating. Two pathways your liver is making cholesterol, statins like Lipitor, statins like Crestor, you know, some of the most widely prescribed drugs in the world, not necessarily, you know, a conspiracy theory. Most of these are generic, very inexpensive drugs. So it is not like big pharma making a ton of money they used to. 25 years ago, Lipitor was a major selling drug, but it is pennies in the generic world. So I just want to take the money out of it and stick with the science.

But you take that little pill called Lipitor because your internist says your LDL cholesterol is 130 and your grandfather had a heart attack. And he is worried about her and she is worried about your other good intentions. They are missing the fact they should get that CT scan first. There is this pathway called the mevalonate pathway. Nobody needs to remember that. And the drug, the Lipitor, the Crestor, partially blocks the pathway so you make less cholesterol. What everybody forgot in my biochemistry class in medical school 40-plus years ago is there is another branch to that pathway. It is like a fork in the road. The other branch is called the GG Pathway. And I guarantee you this is all scientific and well-described, but you never hear about it. Well, it turns out that when you take Lipitor and you take Crestor, you are not only blocked full of the mevalonate pathway, so you make less cholesterol, you block the GG pathway. What does the GG pathway? It stands for geranylgeraniol, there is a biochemical name for the GG pathway that makes CoQ10. And we just said CoQ10 is one of the most important mitochondrial support compounds. Whether you make it because we do make it as humans or whether we take it as a supplement. So you are taking your Lipitor thinking, I'm doing this because my primary care doctor tells me it is a good thing or I really need to because I've had bypass or stents, but we are robbing our body of the ability to make coenzyme Q10 and you are going to get tired and you are going to have less efficient mitochondrial function and you maybe even will have a slight drop off in cardiac efficiency. There are some studies out there, not a lot, that the actual function of the heart may be slightly less efficient on statins, that people with congestive heart failure. Who need great mitochondria more than the hundreds of thousand millions of people that have congestive heart failure.

And it is been shown that if you take a person with congestive heart failure and put them on a Lipitor, they do not need, you get no benefit. Maybe their arteries are clean, but you are actually causing mitochondrial damage, mitochondrial dysfunction. And you may actually be worse than their congestive heart failure. So this extra pathway not only makes coenzymes Q10, it actually helps promote protein production and the heart muscle has to keep making more protein repairing, restoring, and rejuvenating its structure. And actually, the statins may impair it is called protein ventilation. And actually down that pathway is actually vitamin K2 also and K4, vitamin K2. So very exciting just recently there, a scientist colleague of mine, Dr. Barry Tan, found a plant in the Amazon. It is a beautiful red plant. Looks like a pomegranate, almost called the Annatto plant. A N N A T T O, I think you spell it.

And it is been used to make a very pure form of Vitamin E, but he found that there was a little residue and it is actually pure geranylgeraniol, GG. So anyways, in my clinic, if I have to put you on a statin, I'm putting you on coenzyme Q10, and now commercially available GG just supports your mitochondria to support your coenzyme Q10 to support your protein granulation. I source it from a company in New Zealand. It is commercially available and called Gigi Pure because they've just got it to the market in a very pure way anyways. And that is just like one example. We think we are doing something good for a person with a statin and we are causing mitochondrial dysfunction, but we actually can remedy the mitochondrial dysfunction without stopping the statin. If we need the statin. It is just using biochemistry more intelligently. So that is a fun little pathway.

Laura Frontiero, FNP-BC

It is. And so, Dr. Kahn, why isn't every cardiologist in America practicing like you?

Joel Kahn, MD, FACC

Oh, it takes time. I'll tell you, I just thought of one other thing, because people, I'm not anti-Lipitor, but if you open the package insert it'll tell you, you may develop muscle pain and aching. You may develop brain fog. It is as of right there. Or cognitive impairment and it talks about blood sugar elevation. And it turns out this GG pathway, which we do not want to block, but we have to if we are using Lipitor, Crestor, if you restore the amount of GG. with this supplement, at least in animals, blood sugar elevations return to normal. So it is hopeful that we may now have a strategy to deal with people who go on Lipitor. They have no choice to be on because they really need it. But they notice that their CG, their continuous glucose manager or their finger glucometer or their blood work shows that their blood sugar stabilization has actually deteriorated a bit. It is a slow and steady process. I've been on a 10 to 12-year OD course with a lot of expensive coursework, a lot of expensive meetings, and a lot of reading. And they are doing good work. My colleagues are doing good work. But this idea of upgrading it and really bringing precision medicine to the bedside, as I say, I do not want to make it sound too difficult. Get about ten extra blood tests, and get one or two extra imaging studies like the higher calcium CT scan. You are welcome to read any of my blogs. I'm always talking about this science where

the other two vitamins, got very good recent reviews, whereas omega three fatty acids and folate along with coenzyme Q10. But CoQ10 is the mitochondrial miracle, so we'll stick with that as being the most scientifically backed.

Laura Frontiero, FNP-BC

So many pros.

Joel Kahn, MD, FACC

Pharma, you know it and I know it. Even though so much of what we have talked about our generic medicines there still is the sales representative who comes into the office with. They can not bring anything anymore but brochures. But there are still dinner programs at steakhouses and probably the biggest influence is when you go to national meetings and you just see displays that cost hundreds of thousands of dollars, millions of dollars just to sell doctors on the idea that new, expensive drugs are really safe and better. And we should be very skeptical about all that. I find that, you know, as I get older and more offensive.

Laura Frontiero, FNP-BC

All right. In the last few minutes that we have here, let us talk prevention because you mentioned at the beginning of this talk that you see a lot of people in your clinic who you are telling them you do not need to go on drugs, you just need to continue on with a healthy lifestyle. So do you have a sense of statistically how many lives you are able to save and improve with the way that you practice Cardiology?

Joel Kahn, MD, FACC

If you start stirring the pot and again we have recent and good science if you take it. There was just again another study, who happens to be again from Denmark, from Copenhagen, this time 10,000 people, they will put their hands on the Bible. I do not have heart disease. I'm over 40. I feel fine. I do not have heart disease. And you do one of these imaging studies and it turns out about 50% have heart disease they did not know about. So that is a lot of what I do in my clinic, I take 50% and I put them on to eat healthy exercise. See in a couple of year plan, making sure their blood sugar and blood pressure are periodically monitored. But 50% have silent heart disease from minimal amounts to about 10% of the pie. 10% of the 10,000 actually had pretty serious heart disease. They had no clue about it because we do not have a program. We do not have a mammogram of the heart, but we really do have a mammogram allowed. It is called a heart, calcium CT scan. And those people you got to work hard on, I think we make a major influence there of anybody. Everybody knows somebody's grandpa had a heart attack. Uncle Joe had a bypass. My mother had a stroke. Those diseases were identifiable ten years before they got sick. And for a lot of them, it just I open their eyes to that food is medicine. They might leave here with a brochure, a book. I might tell them to watch Forks over Knives on YouTube. Something really simple. But it is the first time in their life they made a connection. I maybe should upgrade my food and the idea of standing desks and walking and motion in their life. And I spend so much time on sleep because there is so much data now between poor sleep and arthroscopy,

ptosis and early death, and dementia. So about 50% of the people I'm seeing really need my ongoing care and 10% of the pie really needs my ongoing care and I think that is substantial. If every doctor could identify 10% of their patient practice, they got 3000 people in family practice, and they are going to really impact 300 to 3000 in terms of risk and stroke, a big number. Then we can take that thousand people a day dropping dead. Maybe we only drop it to 700 dropping dead. That is because we are impacted. But you know what a wonderful advance I would be.

Laura Frontiero, FNP-BC

It would be. Do you have a sense of how many stents are placed that are not needed that could have you know, the problem can be solved with it.

Joel Kahn, MD, FACC

I have the ability to comment on that as a very experienced doctor. And my role to patients is if you went to an E.R. and you got admitted overnight and they found you have a problem and they are talking about putting in a stent in a couple of weeks, you do not need a stent. You need a lifestyle program. You need a doctor. Dean Ornish's heart disease reversal program or Doctor Caldwell as is. And you got to work with somebody carefully who knows what they are doing. If you are in an emergency room and you are having instability or in a corner carrying it and they are telling you you are too sick, you can not leave, you are having your stent tomorrow, you are having your bypass on Tuesday. You probably need it and you should not bucket. Although a few people I have done some really high-intensity consults from people in a coronary carrying it by face time trying to show me their data and make a decision if they have any room for a second opinion, even though they are in.

But I do believe that the majority of these procedures, there is a world famous study published in March of 2020 called the Ischemia, ISCHEMIA trial, 5000 people with very bad heart disease, but they were outpatients. Do you have to rush to the cath, the stent, or the bypass, or could you treat them with medication, diet, and lifestyle? And at the end of three and a half years, there was no advantage to rushing the cath or bypass. So the people that are well enough to be out considering their options should probably try and find a lifestyle oriented preventive cardiologist and work with them or other practitioners. There just are not many of us, and it frankly takes some serious companies to work with a patient when the rest of the world is saying bypass, you are going to drop dead. And you just the reality, science says very few of them are going to drop dead. I mean, I have never had anybody drop dead in that saying, thank God. Thank you.

Laura Frontiero, FNP-BC

On that note, I mean, I could keep asking you questions for the next hour, but we do need to wrap up. What I'm hearing loud and clear from you. If I was a consumer of healthcare watching this interview, what I would be hearing is I get to be my own best advocate. I get to read Dr. Joel Kahn's blogs. I get to research this, take notes from this interview, and go back to my health provider and advocate for myself. Because, like Dr. Kahn just said, there are not enough of him to

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go around to serve the millions of people in this country. So this is the big message here is to advocate for yourself.

Joel Kahn, MD, FACC

I do not need to sell books. I can have a, you know, a nice practice, but a little tiny book called Dead Execs Don't Get Bonuses, I wrote that sort of outlines the self-care program. Why do I have to get what tests to ask for? Why is a stress test not ideal compared to a CT scan? A little simple book with a crazy title that exists? Don't get bonuses. But anyways, I know we touched one person. We did a great job. I think we touched a lot of people.

Laura Frontiero, FNP-BC

We did. And thankfully, if you go back to your primary care doctor or your cardiologist and you draw up, you know, Dr. Joel Kahn, America's cardiologist, I'm reading his book. Could we, you know, do some of the stuff he is recommending? Thankfully, you have a good reputation in this country and people know who you are and respect you. So namedrop, I would say thank you.

Joel Kahn, MD, FACC

Thank you. I had a good mom and dad.

Laura Frontiero, FNP-BC

Thank you so much. Dr. Khan,

Joel Kahn, MD, FACC

Thank you. Yeah, it is a wonderful Summit.

Laura Frontiero, FNP-BC

Thanks. I want to thank you for your contribution as well to the world. Thank you so much for everything you do.