AI, CT Scans, and the Future of Heart Reversal Transcript

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Introduction and the Heart Disease Mission

Well. Hello everybody. Welcome back to Reversing Heart Disease Naturally 4.0 summit 2026. I'm your host Joel Kahn medical doctor. And I want to present you actually a two part lecture, keeping it, concise so you can take notes, make an action plan, and move forward in your battle to never get a heart disease, to identify our disease.

And most importantly, we do identify to reverse heart disease. So I'm going to jump right in here, with part one. What I said was going to be two parts.

And I think you can see my presentation I o war on heart attacks. We can call that. Woah, War on heart attacks. Your battle plan 2026 is up to date, as I can make for this special audience of reversing heart disease.

Naturally 4.0 this summit and you can always find me and my clinic and being in Farmington, Michigan or Boca Raton in Miami, Florida, based on the sunshine you might see on my face, I'm still in Florida, so why do we have to focus on heart disease?

Why even have a heart disease summit? Why have a reversing heart disease summit? Because we still have a major challenge on our hands, and we're not completely winning the war.

There are fewer heart attacks, and there used to be. But deaths from heart disease have not been reduced. It's still sad, but the latest American heart Association, statistics are that one person dies in the United States of heart disease every 36 seconds.

And you can see by that picture it can be women, it can be men. Tragically, it can be young people. And more commonly it's middle age and older people.

We all have to be on guard.

Why Heart Disease Still Demands Attention

And if you're focused on longevity and wellness, your number one concern has to be a focus on heart disease prevention, detection, reversal, what I call PDR every 40s if you combine heart attack and stroke, some of the United States suffers one of these events, which can be fatal or non-fatal.

We prefer the non-fatal kind. You can see in a very prominent journal called circulation, a medical journal, that the 2026 update has been released. Now, not to confuse you, they actually report on 2023 data.

It takes a while to get all this together. This is the most up to date data, and you can see in the upper left, diabetes or prediabetes now affects over a half of all people adults.

They live in the United States and 23% have definite diabetes, which is going to impair their quality of life and unfortunately, possibly their quantity of life.

We now have a real problem with physical activity. Only 26% of children aged 6 to 11 and 14%. Can you believe only 14% of children aged 12 to 17 get the recommended amounts of physical activity, let alone adults.

But by the time you're an adult, you probably have some heart disease. That's why we're always talking about start early, and get your habits in place.

And if you have children you're raising, try and teach them about all of this in the lower left. There is a term you may not heard of called c k It's a new syndrome put together by the American Heart Association of Cardiovascular,

Kidney and Metabolic Disease.

And if you look at that, overall, 80% of young and middle aged adults in United States have some abnormality. I know in my clinic, when I start to see abnormalities of kidney function, I get very nervous because of the central role of kidneys for long term health, longevity, wellness, and generally feeling good.

So why aren't people more concerned? Why did I read an article in the news this morning that said, if you're interested in longevity, start with your heart and how rare an article that is.

So if you look at Causes of death in 2023 all the way to the left, you'll see heart diseases. Number one, cancers number two, accidents are number three.

But if you look very interestingly at the media, where do people get their news. Well, some get it from the New York Times, The Washington Post and Fox News.

This has been updated recently. You can see that in the blue strip at the top, heart disease represents less than 3% of all media coverage of death, followed by accidents, followed by suicide, followed by Covid 19, drug overdose, homicide, terrorism.

Hidden Atherosclerosis and the Need for Imaging

Cancer gets a small recognition to at about 4%. So the media is not doing a fantastic job. The mainstream media, let's say that, my social media channel does a great job of covering death as a consequence of heart disease, but the media doesn't.

And so many people still digest their news from the mainstream media. MSM all kinds of ways we could go there. So you can conclude without a doubt that education about heart disease, current detection paradigms around heart disease, and certainly reversal strategies about heart disease are completely inadequate.

Yes, we have breast exams and mammography and fecal blood testing and colon as could be, and chest x rays in lung CT scans in smokers are screened for lung cancer.

But when we get to the heart, we're talking about asking questions called risk factors. Drawing some blood appropriate probably inadequate, asking for symptoms, which are some of the last stages of heart diseases when you feel symptoms.

And in some situations, like executive clinics, you might get a stress test, even though that's actually not recommended as an efficient and accurate screening test.

We don't go far enough. We need to fight harder. And that's what this is about. I want you to look in the upper right of this slide where the yellow arrow is.

When you do prospective studies like this, 4000 patients study in Madrid. Let's go to all the bank workers in Madrid around age 45 who say, I don't have any heart disease, let's do an ultrasound of their carotid artery to the neck.

Let's do a CT scan of the heart called a calcium CT scan. Let's look in their belly by ultrasound at their aorta. And let's look at the leg artery called the femoral artery by ultrasound.

They look over to the right. You can see that more than 50% of people have detectable plaque in their arteries. When you check early in life, I'd call 45 pretty early in life.

And it is to some degree related to their blood LDL cholesterol levels, so that kibosh is the overwhelming presentation you see on social media that cholesterol doesn't matter.

It matters a lot these days, people. And if you look sort of in the middle of the slide where the other longer yellow

arrow is, you can see overall that 62% of these asymptomatic bank workers had plaque in their arteries, men and women.

And when they came back three years later, repeated the testing, it had increased even though they learned they had some vascular disease. More of them, 67% had evidence.

So this is not going to be much different if this were done in the United States, maybe worse. So we have to apply a very aggressive strategy. We can't just think eating broccoli is enough.

It's great to eat broccoli, but isn't enough. We have to test not guess. We have to do the equivalent of the mammogram for the brass, the colon as could be for the colon.

We need hard imaging. So 400 plus years ago, an English physician, the number one leading physician in Europe, Thomas, I am, said a person is as old as their arteries.

How do you know? So the problem is asking questions and putting a stethoscope is not enough. As a well known current physician has said Peter Diamandis, the human body has an amazing ability to hide disease, which is why you've all heard.

We heard tragically in Detroit in the last couple of weeks, people in their 40s that drop dead without warning of heart disease. Tragic. They were hiding very serious disease, prominent vascular specialist physician Ernest Schaefer said probably 40 years ago, the best test for the prediction of the risk of atherosclerosis is the demonstration of atherosclerosis, which is what they did in that Spanish study.

I showed you a couple of slides earlier. The pace of study demonstrated the atherosclerosis. You know, there's disease. So how did we used to do it? We used to do it by invasive studies.

I'm just going to take one minute on the history of this. But there was a German physician, Werner Foresman, who was convinced he could put a catheter in the heart of a living human, make some measurements, get the catheter or tube out and not kill the living human.

Coronary Calcium Scoring and Risk Prediction

So who had the first catheter in the heart in the 1920s, as an experiment, Doctor Werner Foresman. He did the experiment on himself. He walked up a flight of stairs with a tube he felt was in the heart.

After placing it through a vein in his arm, he took this chest x ray, confirming that this white line ended in the right side of his heart is right atrium.

He took the tube out. He survived, and he changed medicine forever, to the point that he, in the middle, along with two other doctors, won the Nobel Prize in Medicine for the ability to image blood vessels without the death of this object.

That's always a good test when you don't, kill the subject. But we couldn't really look at heart arteries until this famous physician at the Cleveland Clinic, Mason stones, in 1958, was doing, iodine based, CT and x ray pictures of the aorta and accidentally slipped a catheter right into one of the heart arteries, the right coronary artery.

That's the actual x ray picture in the middle. Injected the iodine. He thought it was going in the aorta, but it went into the right corner artery. Heart artery.

The patient survived. He had the picture. And rather than hide this from everybody, he realized he could work on this as a new project. And once you see heart arteries, you know, if you have heart disease.

So that was my specialty for many years, dressing up in blue gowns and blue hats. That's a picture in 1990. And the last time the gentleman without a blue hat and me in more current days on the right.

But many of us have used invasive procedures. We don't need to do that anymore. And why is that so important? Because back about 20 years ago, a very important medical society called Shape Society of Heart Attack Prevention and Eradication said, maybe we're not treating heart disease right.

We just give out prescriptions for lower cholesterol and do other modifications of blood work. But we're not looking at arteries. So look at the bright aqua blue box before you write a prescription for a long term medication as an effort to prevent heart disease, let's find out if there is heart disease with a test.

And they recommended about 20 years ago. You get a CT scan of your heart, not an invasive procedure, a noninvasive procedure called a coronary artery calcium score, CT scan.

And you also look at the carotid arteries, which are wonderful arteries for imaging. And they identified very early that this simple quick hold your breath for 10s and go home CT scan.

Please write this down called a coronary artery calcium Score Cax. Now available in virtually every hospital in the United States and around the world.

Maybe free in Cleveland, maybe under hundred dollars, maybe $150. Well, tell you if you're like patient A, B or C, patient A, the yellow arrows pointing right at the biggest artery of the arc called the widowmaker artery, the left hander descending artery.

No white spots, no calcification. Calcium score zero. Wonderful. Prognosis. Patient B has a few white spots. The computer software program will give a number, a score.

Maybe it's 100. Not as benign and patient C is playing pickleball, planning a trip to Vietnam, and realizes after the scan that he or she is walking around with a tremendous burden of completely silent heart disease.

So simple. Does it make a difference? Oh, it makes a big difference. This is just one of many, many studies over the years. If you look at the top line that says 99.4%, that's the 12 year survival of people who have that heart CT scan and the score comes back ten or less zeros the best.

And if you look at the lowest line that goes down and down and down, if you come back with a calcium score over 1000, only 77% of the people who have that score will be alive in 12 years, according to the study.

I consult on people every week with calcium scores well over a thousand. Yesterday was a calcium scored 2700 last week a calcium score 4400. But I'm very concerned if your calcium score is two or 5 or 12, it's already abnormal.

And I've seen very dangerous heart disease when the calcium score is anything but zero. So it took a while from two decades ago till 2019 that the the American Heart Association finally included this simple, hard c t test in their recommendation.

Advanced CT Angiography and AI Plaque Analysis

So if you look in the red circle or the yellow arrow is CAC coronary artery calcium scoring, if you're a zero, you probably don't need prescription medication, which is what this group argued about 20 years ago.

We have even more data. We have, in essence, about 10,000 research studies on CAC as coronary artery calcium score. But in a randomized study just published in 2025, our newest really prospective study, if a family doctor knows the calcium score or the patient has the study, but the data is kept from the family doctor, there's a difference in the outcome over the next few years.

And in fact, there's an improvement in care and improvement in the status of heart arteries. At three years of follow up, if the doctor knows about the abnormal score and treats it appropriately, when you know your artery score, you know your risk and you know what path you should take.

Of course, it's not just medication, it's everything related to lifestyle you're learning about in this wonderful summit. Or at least I hope you agree with me. Wonderful.

And they actually in the same study in March of 2025, they not only looked at calcium scoring, but they looked at three years. Did your arteries get better or worse?

Remember we're talking about reversing heart disease naturally summit. And maybe you say a CT scans that natural I understand that but you have to make a diagnosis.

So once you made a diagnosis with the calcium score at three or follow up, there was less plaque in the arteries of patients whose family doctor knew the results because they did treat those patients more aggressively.

And you can say treat everybody aggressively. Well, I agree with diet and exercise, but you're not going to be putting people on powerful prescription drugs if they don't have heart disease, at least not recommended.

The newest excitement is all about AI. You can, for example, have a cough. Your family doctor says, go get a chest CT scan. I'm worried about your cost now using I even though I chest CT scan is not a heart test, you do see the heart in the middle of the scan and without any preparation, they now can calculate that coronary artery calcium score.

They can look at your aorta, see if it's calcified. They can look at your valves, see if they're calcified. This is just becoming mainstream that a routine chest CT scan.

And if I recall there may be 40 million of these here in the United States will also provide heart prognostic information. Maybe clean heart arteries.

I have patients all the time that come to me for their cholesterol in 280, and they tell me when I asked detailed questions, they had a chest CT scan in the last three months.

For some reason I get that CT. I look at the images either online or on a CD, and I can see the heart arteries and if they're clean, we're going to work for a long time on diet, exercise and maybe supplements.

So lower the cholesterol. We're not going to use prescription drugs if at all possible, am I? Patients generally like that? All right. What about the carotid arteries?

Well, about 25 years ago it was developed that you can do an ultrasound of these big arteries that are straight and go right up to the brain. And you can use some, computer software imaging analysis called CMT, carotid interval media thickness ultrasounds.

And if you can find one, go get one done. We do them in my clinics, but they're hard to find. There are a few companies that go around the country offering these.

Most universities, sadly don't offer this simple, radiation free technique. So action! Stop there. You should write down is of course do your colon cancer screening and eat to prevent colon cancer.

We know that's a whole food plant based diet. Do your mammogram or your 30 gram and eat to prevent breast cancer. We know that's a whole food plant based diet with a lot of that broccoli I mentioned.

But don't ignore the heart. In fact, the heart should be number one. Get a calcium score CT scan, get a carotid IMT imaging study. All right. But as we come towards the middle to end of part one of this two part presentation, I have to educate you about a breakthrough of tremendous importance in cardiology and heart disease imaging.

And that's the fact that in 2010, it was developed that you can put an IV in the arm of a human. You could give iodine through the IV, you could see the heart arteries and a CT scan with an injection of iodine.

But this wasn't a simple calcium score. Because of the iodine injection, you can now see the entire artery. You can actually report narrowing. And you can also see something called soft plaque, not just hard calcified plaque.

So with this ccta coronary angiography, we can see a person on the left who has no soft or hard plaque. And then we can see going from left to right all the way up to very severe plaques.

But the limitation was mainly that this was read by eyeball visual estimate. And that is called subjective. So last year it became routine that we could now use AI software.

The AI software is made by several different companies. I tend to use one called clearly that when they have the CT scan with the iodine dye injection, the whole test takes about two minutes.

It does up the radiation exposure and it does increase the cost. But we can now tell what kind of plaque is in the heart arteries. Soon we'll be able to tell what kind of plaque is in other arteries around the body. But right now, the software's for the heart.

We can tell if there's dangerous, high risk free heart attack plaque called low density non calcified plaque. That's a red plaque. And the image on the left we can see if the plaque contains a lot soft non calcified structures.

Those are color coded yellow in the pictures. In the middle are we can actually see that there is plaque but it's low risk plaque because it's all calcified plaque all the way to the right.

Very important breakthrough. So this is a patient I see regularly in my clinic for about a decade. He's an accountant. He's still working for about another four years.

He has no symptoms. Twice he's gone for the corona artery. Calcium score. It started out abnormal at 11 of eight.

Clinical Examples, Study Data, and Future Screening

But, six years after the calcium score had risen to 86. Not a world record, but not normal. His carotid age said he was like a 76 year old. Even though when we first did it, he was only 57.

So he was having atherosclerosis and he was working on his diet and his exercise and a stress in his sleep. And he was on both, supplements and prescription drugs.

And he really cared. And he kept coming back in a doc. I want to know how I'm doing. So we have now done two of these advanced corner CT angiograms with iodine dye injections and even though I tried to put arrows, I just want to report you that the picture on the left is from October 2022, and the picture on the right is from April 2025.

So not quite three years. The exact same test. They just changed the way the report looks and we have shrunk his plaque. This is the most accurate way in the world to measure it.

He used to have 457 cubic millimeters of plaque. Now he has 407, 457 down to 407. And we've particularly shrunk what's called the soft black. The red arrow on the left said he had 320 cubic millimeters of soft black.

Now he has 200. So we have really reduced his risk. Very proud of that. How common when you use these advanced CT scans with eye imaging. Do you see plaque.

This may be the largest report in the world. If you look to the left 4855 people, no symptoms, just showed up at a very exclusive executive clinic where they do this test routinely.

And you can see only 11% of people were normal. 74% of people had mild black, and about 12 to 13% of people asymptomatic had severe plaque. Now all the pictures to the right show is that as you get older, the odds of you have severe plaque go up a lot.

So if you show up at this clinic over age 70 and you're a man, the odds are close to 60%. You're going to have moderate or severe plaque without symptoms.

And if you're a woman, it's closer to about 14%. That's just a statistic from one of the biggest samples there is. Does doing a study like my patient, they account change behavior and outcome.

Now we have a randomized study published journal American Medical Association Cardiology June 2025. But they took 400 people and they did these advanced CT studies at baseline.

And they repeated them. They gave the results to half of the participants and the doctors. The other half didn't know the results. Isn't that a crazy study? That's how they do it.

And they identified just like the calcium score. But now using the more advanced angiogram tests that when the treatment is guided by a CT scan, you get better outcomes, no doubt about it.

And in November of 2025, at the European Society of Cardiology, more data was presented that these advanced AI studies predict the risk of heart attack better than anything else that they studied in comparison, including even the calcium score.

You get more information from these advanced CT and your parents. Well, why isn't this used routinely yet? Because we need the study I'm showing you here to be finished.

The transform study is a randomized comparison of using these eye CT angiograms versus just knowing their cholesterol, blood pressure, and, blood sugar for primary prevention of heart attack strokes and death.

So there are 7000 people and well, more than half have already entered this study. They're at risk with elevated blood sugars or actual diabetes, but they do not yet have any known symptomatic heart disease like a heart attack or a bypass, you know, and again, they're all getting the advanced study with the eye.

But half of the doctors in the patients won't get their results to the end of the study. 3 or 4 years later, half of them get it right away. And the doctor has been instructed to treat them based on how much disease is found and the clearly, there actually are already suggested what I'll call algorithms.

What do you do if you don't find any disease? Well, you don't start typical prescription drugs. Or if you go all the way to the right where it's in red and they called stage three.

What do you do if you find stage three asymptomatic heart disease, you throw everything at them. The only thing I don't love about this slide is they're not talking about lifestyle.

They're assuming that patients are getting education about exercise, fitness, sleep, stress management and lab based nutrition. But they're focused in this picture on lifestyle.

Is there any downside to see damaging? There is I'm always honest about that. A relatively recent study looked at an analysis, computer based analysis, that with the 93 million CT scans performed in 2023 and 62 million patients in the United States, there might be an uptick in cancer from the X-ray exposure, predominantly in children, because children get exposed to x rays from CT scans, and they got their whole life to worry about DNA damage, older people.

It's an issue, but not as much. There are some vitamins that have been suggested to protect the body during CT imaging. Not completely proven. And my final comment in part one on this war on heart attacks, er, reversing heart disease naturally some 4.0 is there is a new generation of CT scanners that are being installed at major medical centers and universities.

They're called PC photon counting, CT scanners and amongst other improvements they exposure to less radiation. So we have, great opportunities to identify accurately the burden of atherosclerosis if you have none.

It's a victory. I've been through all of these tests, and I have no atherosclerosis in my heart. Arteries. And I'm in my mid to late 60s. But that's relatively uncommon.

And we have the technology to identify it accurately. So thank you very much for listening to part one of this presentation.