This Heart Scan Saves Your Life Before Symptoms Start | Dr. James Min & Humberto Carrión | Ep. 150 Transcript

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Introduction to heart disease and the Clearly scan

Plaque or atherosclerosis builds up in the arteries over many, many years, starting in our teens. It gradually and insidiously grows. We don't know it.

And everybody talks about that person who went out for a run, never came back. – We just had a couple of weeks ago a guy, 46-year-old cyclist. You look at him and you think, this is the definition of health.

He had zero calcium score, had ton of the soft plaque and the low-density plaque in his heart, and he couldn't believe it! –We have Dr. James Min and Humberto Carillon!

All right! Meet Dr. James Min, a board-certified cardiologist, founder and CEO of CLEARly, and Humberto Carrion, CEO and co-founder of 3T Radiology and Research, two leaders transforming heart care and medical imaging.

I had the opportunity to do the scan myself. What does the Clearly heart scan really do and why people should utilize it? I think of coronary artery disease, the cause of heart attacks in three different steps.

There's the primary disease the plaque. It can cause a narrowing and that can reduce blood flow. We never had a test that could do all in one. Clearly does all of those three things.

Want to do a whole body MRI for cancer screening? We got that for you. I always tell everybody nobody drops out of cancer. People do drop out heart attack.

A clearly heart scan is the most important scan between the two. If you can only afford one, In your opinion, what age would be the appropriate age to start doing early detection when it comes to the clearly heart scan?

Like we again. Welcome to another episode of a healthy point of view podcast. I'm your host, Sam Tahata. And as usual, we're bringing experts from all over the world to talk about health, wellness, beauty and mindset.

Today's podcast, we're going to be talking about heart health. We're gonna be taking about Heart Disease. Guys, Heart disease is the leading killer here in the U. S.

When we talk about leading cause of death, we are talking 680,000 fatalities on a yearly basis from heart disease. How do we make sure we can prevent that from happening?

There's tons of new technologies out there. Now, recently, you guys probably have seen me do this heart scan here in South Florida. I was at 3T Radiology with my good friend, Humberto Carrion, and we did the full scan of the heart, but this scan utilized a technology called CLEARLY.

They clearly AI technology. Today we're going to take a deep dive to understand what this truly is and how this can truly help save people's lives. So today we have Dr.

James Min and Humberto Carrion. All right. Welcome to Healthy Point of View podcast. Thanks for having us. Absolutely.

Guest introductions and personal backgrounds

So, you know, before we actually get into the meat and potatoes of this podcast talking about heart disease and talking About the technology that doc you are the founder of you've worked on a lot of research and a Lot of

science behind putting this together.

I want to take a little bit of time for the viewers and listeners to get to know both of you guys a bit more personally. Doc, I wanna go back to when you were five years old.

I wanted to understand your upbringing of what brought you to where you're at today as a physician. That's a good question. Well I was born in Oklahoma, raised in Wisconsin in a small town, mostly dairy farmers, soybean farmers.

Wisconsin. It was cold back then. little badger there. You know, I'm from Wisconsin myself. I didn't know that. Yeah, i was raised in Wisconsin. Where in wisconsin?

I lived in uh Middleton and then I live in Madison and most of my life I've lived Milwaukee. i lived In Whitewater. White Water, off the south. We were about 45 minutes away from each other.

University over there also. Yes, exactly. Had a few friends that play football. That's crazy. But go on. So yeah, so I grew up in a small town and I wanted to be in a big city, ended up in Chicago for college and Philadelphia for grad school, med school and went back and did all of my medicine cardiology training at the University of Chicago.

It wasn't that exciting, just was a straight road to medicine. So listen, I mean, you come from Wisconsin when we talk about heart disease. I don't know if you've ever been to the Wisconsin State Fair.

Yes I have. Where you have everything that's fried that you can think of. A fried Snickers bar. Fried ice cream. You know, show people pictures of like when I used to go up there after high school.

Had to visit my friends. And it was crazy the one year I went up to it. It was a fried crispy cream cheeseburger with chocolate covered bacon inside of it.

It's just like, well, do you repeat that again? But what was that? So when we talk about cardiovascular, you just wash it down. You got the melee light, right?

Right. So, yeah, so I'm I. That 17 years of my life growing up in Wisconsin, so I always have a very soft spot when I hear people talk about Wisconsin.

You know, as both my parents are architects, they did a lot of stuff there. Miller Park Stadium, my dad was one of the lead architects. IMAX home theater.

A lot at the University of Madison. My uncle that's also an architect designed a lots of their medical buildings out that way as well. So, you know the architectural side, Frank Lloyd Wright, a of beautiful properties, La Crosse, all over the place in We could go for days talking about Wisconsin, by the way.

So, but Humberto, how about yourself, man? Because you're over here, you got the beautiful facilities throughout South Florida that are utilizing Dr. Mint's technology.

Yeah. Yeah, so I started off, my health journey was a little different. I was not from Wisconsin. And I'm born and raised here in Miami. So actually, in my senior year in high school, I actually worked at McDonald's, speaking of fried foods.

Mm-hmm. From there, when I graduated high, summer comes up and it's my yearly checkup with the doctor. Go get my blood tests and the doctors are like, what in the world happened to you in your last year?

Your labs completely flipped and changed. basically, cholesterol's through the roof, glucose sugar through roof. Inflammatory markers through everything's to the room.

What happened to you? But you still look the same on the outside. I'm like, well, I still playing sports, but I got a job at McDonald's. He's like oh, that explains it all.

So he's, like how often are you eating? I am like basically every day. Wow. And he is like yeah, this is a big problem. It's gonna catch up to extremely fast.

But I basically did supersize me to myself before the movie Supersize Me came out. That kind of got me into my health journey. I stayed here in Miami, went to college, and I didn't think I did want to be a doctor.

So I started working at an imaging center at front desk and worked my way up from there and then realized being a doctors just, you know. A lot of time, a lot work, lot sacrifice.

And I was like, I'll just stay on the business side of things. That's when I learned the whole business left and started 3T radiology back in 2019. Now we're always on forefront of all the newest software and technologies coming out.

And I got the pleasure of meeting him a few years ago and we're one of the only centers in the outpatient world in South Florida doing this 3T or 3t radiology center doing clearly using clearly AI software.

And you said out patient is mainly the clearly technology in in a hospital setting. Is that what it is? Yeah. At least here in South Florida, the big hospitals feel the hospitals have it.

But in the outpatient world, not that many, because you need to have the right scanners. You need have really high-end top-level scanners to support the software.

Let me ask you this. With what we're talking about today, why do people ignore health until fear forces them to actually do something? Yeah, that's the worst thing.

I don't understand why. Like I said, I got into health when I was 18, 20 years ago, and I've been into it since before it got popular. And I wish people didn't wait because what I see is somebody has a heart attack in their family.

Then all of a sudden I have all the family members knocking on my door like, hey, we need this heart scan. It's like I wished everyone would just get it.

Unfortunately, in my opinion, the way insurance is and the ways we're taught is wait till there's a problem and then go see your doctor. That's the problem that I see is this mindset that we're in that it's all like insurances don't cover preventive scans, right?

You got to have a diagnosis. You have to an issue before they even take care of you. Doc, you know, You mentioned earlier we were talking before the show started of how sometimes people go.

not feeling that many symptoms, right? And even when people start feeling symptoms as they age, they kind of just mark it as, well, that's part of the aging process.

Why prevention matters more than waiting for symptoms

Do you feel that modern healthcare has conditioned people to feel, has condition people, to fill that they're fine versus really not being healthy? Yeah, I think so.

I mean, can't speak to other specialties, but I can speak cardiology. The historical way that we've done things is to always wait for symptoms. And those symptoms are chest pain, shortness of breath, fatigue with exertion, and so on.

We created tests. The tests that were available to us for the last 50 years were there to evaluate the cause of somebody's symptoms. But if you look at the way that heart attacks and death from fatal heart attack occurs, the majority of the patients will never feel a symptom before their event.

um plaque or atherosclerosis builds up in the arteries over many many years starting in our teens and then it gradually and insidiously grows we don't know it because we dont see it we do not feel it and somebody has an

event right and everybody talks about that person who went out for a bike ride never came back or went for run never come back And I think we've conflated fitness with health.

Fitness isn't health, like you can be very fit, but you could be unhealthy. Like Humberto's, he's playing sports and eating McDonald's and suddenly he is not healthy, and he was very fed.

And what we need to do is shift the paradigm to understand that for silent diseases, we have to find a better way than waiting for people to come in with end stage, late stage disease.

Once the horse is out of the barn, it's just much harder to fix the problem. And when you see the program very early, you can take care of it and you do it very minimally, invasively, like where it is just lifestyle and medications that we can utilize to try to prevent heart attacks and address the number one public health epidemic in the world, which is cardiovascular disease.

Do you see the allopathic traditional medicine world actually implementing more of these preventative type of scans in place? I think it is slowly, but I we're seeing as a convergence of the consumerism of healthcare and the response of medicine to that, right?

So this whole longevity fad, quote unquote, was considered a fad five, six, seven years ago, it's not a fat, right? Like people are definitely taking more control of their health to try to be more proactive about getting aware of what their body status is at and taking control that and making sure that future adverse events don't happen.

So I think medicine has to intrinsically adapt to that because patients come to us, and they say, hey, I read about this, We can't ignore it anymore, right?

There's too much science out there. I think we adhere to good science. If there's anything our field does, cardiology, I thinks it is the most evidence-based field in medicine, which is great, but there is a whole bunch of stuff that we're just not creating the processes and the infrastructure to allow people to get prevention earlier, and that has to happen.

Yeah, and to touch on something that he was saying, being fit doesn't mean healthy. You know, I have plenty of examples of people that we've scanned that are fit, but you look at their heart and their eye, we just had a couple weeks ago a guy, 46 year old cyclist, you'd look him and you think this is the definition of health.

And he had zero calcium score, had ton of the soft plaque and the low density plaque in his heart, he couldn't believe it. He thought he's fine. No symptoms.

So now he's got something to look at and be like, all right, now I got to now, I gotta regress this plaque and prevent. Yeah, listen, I can attest to it as being a former firefighter paramedic for 12 years, right?

Running 911 calls, the amount of people that I would see drop dead, you know, i've had people the cyclists or out on the basketball court, or just walking in the park, where you would look at them, how DACA you were saying physically fit.

But internally, you know, they were they're very rusty inside where their heart gave up. So these are things that we have to understand that it's true.

It's real. And you have. To make time to actually take that proactive preventative approach from preventing things like that happening. Humberto, are you seeing when it comes to patients coming to your facility, your radiology facility?

And we're talking about the Clearly Heart Scan, which we'll get into more detail of what that is in a minute. But are seeing patients just coming knocking on the door says, hey, I want a Clearly heart scan?

Now, I know that can happen because I see the commercials all over TV, you know, when it comes to the clearly

heart scan. Or are you seeing more medical providers recommending for the patients to go there?

So two, three, there's three ways we're getting patients. The number one way we were getting patience is this new concierge medicine, longevity, preventive medicine doctors where people are paying out of pocket.

all of those doctors are having their patients as part of their yearly annual checkups, they're all getting clearly scans done, at least down here in the South Florida area.

They're are all coming for that. That's the number one way we get patients. The second way, we got patients is actually cash patients just knocking on our door.

Hey, I heard you do the scan. I looked it up online. You guys are the guys doing it in Miami. And I want to get the skin done. Unfortunately, the third way and the last way were getting it is through regular patients coming from their physicians.

And I say, unfortunately, because I wish more physicians pushed this from a preventive standpoint. But unfortunately mainstream medicine, as you know, they wait for symptoms to show up and then, oh, go get this scan.

Now you have symptoms. Dr. Min, you developed this system, this clearly, and I'll let you get in, I'm calling it a system. I want you to kind of chime in on that.

But what was broken with the current imaging world that made you wanna build something differently? Yeah, I mean, the way we've done things for the last 50 years is somebody comes in with symptoms.

We do what's called a stress test, right? Somebody runs on a treadmill or they ride a bicycle. we take some pictures of their heart and we see whether or not their blood flow in their muscle differs from rest versus the stress state when they're exercising.

As you exercise, obviously your heart needs more blood and more oxygen and so you can typically manifest that. That was an indirect marker of whether or not somebody had a significant blockage in their artery that impeded blood flow to the heart muscle itself.

If you think about those two metrics, the first one is an abnormal stress test. We call it ischemia, inadequate bloodflow to heart muscles. And then the second one, a blockade, we call a stenosis.

It's a narrowing in the vessel. Neither of those two things are actually disease. They're downstream consequences of the disease, the diseases itself is atherosclerosis or plaque that builds up in the wall of artery.

That's the primary disease process. At some point, that primary diseases may encroach upon the inner lumen of vessel and cause a blockage. And that's a secondary anatomic consequence of disease At some point, the plaque and the narrowing can impede blood flow.

That's a tertiary physiologic consequence of the disease. So we've spent the last 50 years measuring surrogates of disease rather than the diseases itself.

Our hypothesis was that if you could understand that disease itself, that you'd do much better for understanding the risk of somebody. And our research was always, we spent 20 years doing clinical trials.

Our research was always to try to, can we pinpoint the person who's gonna have a heart attack in the future? We published a paper last year on about five million people across the United States, and we just asked a very simple question.

We said, how many of these people had any symptoms before their event? And it turns out the majority didn't have symptoms before their event. And then we said, OK, amongst those people who are completely asymptomatic, how

many of them had at least risk factors?

High cholesterol, high blood pressure, diabetes. Turns out a third of him didn' t have any risk factor either. Really? And. Then we. Said, well, How many people actually saw a doctor?

and it.

How coronary disease develops and why early detection matters

turns. Out about half of. Them didn. Never saw. A doctor. and the reason they didn t was because they. Didn't. Have any symptoms and they dint have. Any risk.

Factors. Why would they go see a. Doctor? And the vast majority of them weren't being treated with a single preventive medical therapy. So our thesis is that if the majority people have a silent disease, they will never come to the hospital or to cardiology practice.

It will always remain the number one cause of death unless we go find them. I think identification is the problem. Treatment, we have lots of treatments for prevention of heart attacks.

We just don't do a very good job identifying the people before their events. because they never have any symptoms. And all of our tests for the last 50 years has been based on finding symptoms, right?

So early detection is key. I think so. It's good. This goes back to how you call looking under the hood, looking into the head. So so in your opinion, what age would be the appropriate age to start doing early?

Detection when it comes to the clearly heart scan? I mean, again, we were clinical trialists, so we did all these outcomes trials. So we will prove the evidence.

To what Humberto was saying, our company is invested in a 7,500 patient randomized control trial. We have enrolled now almost 10,000 patients into that trial, The irony of it is it's the fastest enrolling trial that I've ever been a part of.

And I think what that speaks to is people wanna know what's going on in their heart. So they volunteer to be part this clinical trial. Our goal, it's a randomized control trial where we're testing, measuring risk factors of heart disease like cholesterol and blood pressure versus measuring actual disease using imaging, similar to the way you use a mammogram, a colonoscopy, Pap smear, lung CT.

What are all those blockbuster prevention paradigm imaging tests? What do they have in common is that they all do direct visualization using some form of non-invasive imaging.

And that we believe we understand the basket biology. We've got an extremely safe tool that's completely non-invasive, all in the actual scan takes a second at Umberto's facility, literally one second.

So like, why wouldn't you want to know? In order for us to get it so that it can be mainstream and that insurers will pay for it, they have to see the clinical benefit and they that it actually can be cost effective to do it this way, similar to mammograms and colonoscopies.

And that is why we're doing this trial. We're investing in it. I think it's the largest med tech trial ever, I believe, from a private company before being in the public markets.

But that's what our DNA is. we believe in science and we will prove out the science. We've proven out so much science that all of the referrers who are referring patients to Humberto Center, I think they're on good solid scientific ground.

But in order to change guidelines, we're gonna need the randomized trials who were committed to that. Humberto,

you mentioned before when you got into the radiology business, it was more of the traditional medicine radiologist.

And now this is more when we talk about the prevention and even the full body MRIs that you guys are doing. We're seeing a lot more of that. What made you get a bit away, and I'm saying a little bit because you still do some of the traditional medicine scanning that you guys do, but what made go into this other part of more prevention?

I noticed after COVID patients wanted to put their health care into their own hands. And this whole explosion I feel happened of the whole longevity space or like he was saying like longevity fad after covid.

It was like every other week almost I was hearing about emergency room medicine physicians quitting the hospital because they were burnt out. because of what happened during COVID, and they were starting their own preventive longevity practice.

And I wanted to put the power into the patient's hands. You want an MRI because your knee hurts and you don't want to go through this whole process, come get an MRI or knee.

Do you want do a whole body MRI for cancer screening? We got that for you. If you wanna check your heart, which again, I always tell everybody, nobody drops out of cancer.

People do drop out heart attacks. The clearly heart scan, is the most important scan between the two if you can only afford one. And, yeah, just giving patients peace of mind and putting power back in their hands.

You know, unfortunately, insurance companies control health care systems because everybody pays for health insurance. And if health insurances says, oh, you can't get this first, if you have to get an x-ray first and then you get a CT and maybe you could get MRI, that whole process is just unfortunately controlled with all these damn insurance company.

Right. The clearly heart scan is AI driven. It is, yes. Do you feel that eventually AI is gonna outperform doctors at diagnosing disease? I think it already does.

Are there any other reference points besides clearly that it's also doing that with other technologies? I mean, we're in cardiology, but every tool that a cardiologist uses has AI solutions that I think are better than docs, like the EKG that we use.

We've got AI algorithms there, stethoscopes, ultrasounds, MRIs, CT scans, nuclear tests, invasive angiography. There's just infused AI throughout. It's not that it should be.

It's not that it should compete with the doctor. It should compliment the Doctor, right? And so if I have a tool that's better than me at looking at things, or better at me than measuring things or, better then me, at figuring something out that I can't figure out on my own, yeah, that something that we should adopt.

We should adapt it readily. I was on an FDA panel, and they said, well, how should we regulate AI was the question that people were asking. And I said look, it's a medical device.

And if you get ad tech wrong, then you put an advertisement from somebody that they're not interested in. Those stakes aren't so high. You get this wrong and somebody dies.

Like, yeah, but then we should raise the regulatory bar so that it's gotta be evidence-based, it gotta prove itself. But I mean, in terms of its performance, the AI is already better than doctors.

And that's what people have to do. The physicians have the utilize it as a tool To improve the patient outcomes, to improve. The treatment that they're doing with their patients.

Exactly right. It's just a, it is a tool is what it. Is it turns out it's a really, really good tool. Like we started trying to do AI back in what, 2010, It didn't work at all then by 2016. And you heard about this deep learning and convolutional

neural nets.

That started to work pretty good. And now, obviously, it works really well. But I think we're in the first inning of this ballgame. I mean, what we are going to see in terms of improvements over the next 10 years is going be astronomically productive to mankind.

For health care, though, I, think it needs to be a regulated field because the stakes are too high. You cannot screw up on somebody's life. So that's where I think that you'll see probably a slower adoption of AI in healthcare than you will in other fields.

And I thinks necessarily so. We have to prove that these things actually do improve outcomes and can save the healthcare system money. Yeah. A lot of the radiologists that work with me, they all say the same thing.

They're like, oh, this is just making me a better radiologist and a more efficient radiology. Or now the AI can say, hey, look in this area of the body.

Here's all the diseases. And the doctor could just go right there and get results out much faster, more efficiently. Right. A lot of people, when you look at the longevity space, a lot people are very connected to their wellness data, to all of their health data.

You see people wearing the different wearables, the oar ring, right, Fitbit, Garmin, I mean, you name it, right? And then those same people are actively always testing, they'll use a continuous glucose monitor, get their genetic testing done, do a comprehensive blood panel that's looking at environmental toxins, all kinds of these things.

So based off of your experience and your opinion, your professional experience, Are you seeing that people are becoming more connected to the biomarkers than themselves emotionally and personally?

Yeah, definitely. I mean, everybody now wants to measure everything.

What the Clearly Heart Scan measures

It's almost like I tell people sometimes, how often do you look at your bank account? You look it all the time. Make sure you're making enough money. You got money to pay the bills.

Well, now everybody's looking at their health account, making sure cholesterol is good, and making your hormones are optimized. all this stuff. And at the end of the day, I tell everybody, you could look at your sleep score, make sure you're sleeping well.

You can make you eating well, clean foods. Make sure your exercising, which are the three main pillars of health. But at end day you have to look inside the heart and make there you don't have these plaques that are just all of a sudden sticking to the walls of arteries.

In general, wearables, all the stuff that's coming out now, much more in depth labs. It's all great. And Doc, with what we're talking about, when we start looking at the patients that are so emotionally attached to these different biomarkers.

In your professional opinion, do you think that's a good thing or that can cause certain issues? You know, with someone so emotionally connected to something, it can create a certain level of stress as well, too, where all of a sudden, you know you're looking at my sleep score.

You now it's now I got to go ahead and turn up, turn all my light bulbs in my house red at night. I gotta do this. Can't I can't have a slice of pizza because my biomarkers are showing this like what's your opinion on that?

Yeah, it's a good question. Like, I don't think it is answered there. I wear a wearable, but I do not need a whereable to tell me that I had a crummy night of sleep.

I think that this randomized control trial that I had indicated that we've enrolled about 10,000 patients, our audience is the United States Preventive Services Task Force, and they also index not only on benefit but also on harm.

If it's just going to worry somebody and it is going make their quality of life horrible, Maybe it's not worth it to know. And so we're very carefully measuring the benefits as well as the harm.

Just overall, on a personal level, I think more data is better. It's always better to be informed. So if you have data, it is empowering to have that data.

To Humberto's point, you can do all the wearables that you want. You can go check all of the blood tests that want, but you still don't know what's going on in your heart.

If I give you 100 people who have high cholesterol, 70% of them don' have a speck of disease. So I don't know what we're treating. I know we are treating a number, but we certainly are not treating the heart because that heart doesn't have any disease to treat.

So, I do not think you can prevent what you cannot see and I think Umberto and share that philosophy that if you want to prevent heart attacks from happening, Look at the heart.

We're on the same mission here. With this technology now, absolutely nobody should be having a heart attack. I want to go deeper into the technology. So I had the opportunity to do the scan myself.

Maybe we could pull it up and kind of go through it and understand what we're looking at when it comes to the technology that's being utilized in just so the listeners and viewers can understand.

What does the clearly heart scan really do and why people should should utilize it? Yeah, Jim, I don't know if you want to go to this right here, but or and that is coming up on the screen over there.

OK. Right. Um, yeah, I mean the, so this was the convergence of, um, clinical cardiology, cardiovascular outcomes, research, understanding coronary pathophysiology, image processing of how you process a CT scan and then utilizing the AI to sort of put it all together.

The goal here, like in what you're seeing here is about five or six different AI algorithms. that have extracted all of your heart arteries out of the scan and then done a microscopic analysis on this at a very personalized level.

And what we're looking for is, somebody once asked us, well, what's so innovative about what you guys are doing? I said, I don't think there's anything innovative but what were doing.

If there is the innovation is in the obviousness of what should be doing, which is measuring the actual disease rather than surrogate markers of disease.

So the actual disease is the plaque. Fortunately for you, you have virtually none, which is great. Yes, like you look like. You have the arteries of a 14 year old kid, but what you can see where Umberto is pointing out is there's a tiny little bit of plaque and you.

See that it's yellow and it. In our software, it's usually a continuum. It's much more complex, but for digestibility and clinical actionability, we've trichotomized the plaques into three different types.

You can see that where those colors are, are plaque that are embedded in the wall of the artery. So they just sit there and they grow very quietly over time.

And the three different colors, we use red, yellow, and blue, represent three kinds of plaques. And it turns out the phenotypic appearance of a plaque dictates its behavior.

Historically, when we did the clinical trials, the red plaque, which are very dark on CT scans, are the lipid-rich

plaque. They're cholesterol-filled and so on.

The yellow plaques are a soft plaque, but a little more fibrous. It's sort of like where the tendon meets the bone on a short rib, that kind of material.

And then the blue plaque are calcium, they're just rocks. They're essentially the bones itself. We thought that all plaqs were bad. Turns out, when you look back at the research, it's not true at all.

Some plaques are the strongest predictors of who will have a heart attack or not. That's the ones that we color-coat red. You have none in your heart.

The yellow plaques are sort of the younger plaque that are higher risk, but not really that high, that higher-risk. And then the blue plaqs are calcium.

It turns out that when your body heals, in some cases you can regress your plaque. You can go from 100 units down to 50 units. In most cases what happens though is you don't regress plaque, you transform it.

And what you see is that with good treatment, good lifestyle, that the plaques turn from red to yellow to blue as a mechanism of stabilization is what the trials have taught us.

And so we had done a study with two serial CT scans, about three and a half years apart and over a thousand, 1200 people or so. And we treated half with statins, half without statin.

What we found that the statens did was it didn't make the plaque go away, it transformed it. from this dark phenotype to this bright phenotyped, the calcium, which was a mechanism of stabilization.

And that was associated with reduction in heart events, like heart attacks and death and so on. It's since been repeated with many, many different kinds of medications, with a low sodium diet, increased physical activity and exercise.

All these good things that we do, they don't make plaque go away, per se. They transform it into a more stable phenotypes. So we always tell people the goal is to have no plaque.

But if you have plaque, then you want it to be the more stable form of it. The calcified form. So it's the calcsified, the soft plaque and the low density plaque is the harder plaque right?

Yeah, because the mechanism of a heart attack is that you'll have like a soft plaque that has a very thin cap and that cap can erode or rupture. Once that happens, it spills all this stuff out into the bloodstream and the flood clots and forms a clot on top of the plaque that occludes the artery and that's when a heart attack occurs because you can't get enough blood through the arteries.

So you cant, by the very mechanism of a hear attack, rocks don't rupture or rocks dont erode and calcium is essentially just a rock. Once you have just purely calcium by its very mechanisms you cannot have a hard attack.

So that's the goal. The goal is to have no plaque. But if you're gonna have plaque, then the goal is to have it all be calcified. Have some calcium because it's already solidified and it not going anywhere.

And then, the other problem is calcium score, which has been around forever, unfortunately only measured the calciified safe plaque. It didn't measure the soft and the low density.

That's a great point that Umberto made. Like, we typically say severely elevated calcium in your heart arteries is a score of, call it 300 or 400 or higher.

But if I give you two people who have a calcium score of 400, one of them can just have purely calcified plaque and that's all they have. And the other one can have underlying lipid-rich cholesterol-filled, the more high-risk plaques is

what the trials have taught us.

But you can't tell that from just getting a calcium score. You need to do a coronary CT angiogram in order to get that information. Now that calcium, that calcified plaque that we're talking about, can you have a like 90% blockage of just that?

You can. So, but now we are talking two different issues. For me, the number one issue if I see a patient is I'm going to keep you alive as long as I can and then almost as importantly is that I am going make you feel as good as you can, right?

So I want your quality of life to be good in addition to your quantity of like. So you can have a stable plaque that doesn't cause a heart attack while having symptoms.

So then I have to relieve the symptoms and make you feel better as a doctor. So those are two different goals. If you say, I wanna prevent myself from ever having a heart attack, definitely the calcified plaque has been associated with a lower risk of having the heart attacks.

But you can have a severe narrowing due to calcium that makes you feels crummy. And there's treatments out there to get rid of that so that you could feel it better.

That doesn't promote longevity. but what that does is promote freedom of symptoms. Like the whole chest pain, shortness of breath thing. Because what he's saying is if that artery narrows too much, now you're not getting enough flow going through there.

And that's the second part of the scan, Jim, that we want to mention. A second party scan. We didn't do it for you because you had pretty clean arteries.

But a second of this scan is it can measure flow through that Where if the flow gets too low, then it creates ischemia and then you can get symptoms. And then, you need a stent.

You got to go into the cath lab, into a hospital, get a procedure, put a metal stents in there to open up that artery to make sure flow is properly, blood is flowing.

That's typically if someone has too much narrowing.

Treatment, lifestyle, and reversing plaque risk

Too much, too narrow. If you want to touch on the ischaemia part of the clearly scan. So like, again, like I think of coronary artery disease, the cause of heart attacks in three different Um, steps, right?

There's the primary disease, the plaque, then it can cause a narrowing and that can reduce blood flow. And we never had a test that could do all in one.

Um. I think clearly does all of those three things. So, so in, one test, you can get everything that you need. To Umberto's point, like when you have virtually no disease.

Then you don't worry about the blockage or the bloodflow because you had virtually that's your arteries, Right? Like your, arteries are very clean. In somebody who's got more disease, they might wanna know, hey, this person could have ischemia, impaired blood flow due to the blockage.

And so we have a tool that does that. We call it clearly ischemia. I think it's the first of its kind that a plaque-based assessment that combines everything that's in your arteries to determine whether or not you have impaired flow to your heart muscle or no.

Which is an important thing to know. I just know that if I'm going to prioritize my goals, I want to make sure I don't

die first or have a heart attack or a massive catastrophic event.

And then the symptoms I can deal with, they're more stable. But our software does all three of those things. Then I think the big chasm that we've had is that We talk a language that nobody understands.

So, you know, You go to your doctor and there's all this nomenclature that we, we use and we used it because we've, We've said the same words for 20, 30, 40 years, but, But the patient doesn't necessarily know all of that.

so what we created was a second software platform that took all Of this imaging science and then translated it into something that everybody could understand.

and who's everybody, we considered everybody who is a stakeholder in the care pathway. That includes not only the cardiologists, the radiologists who are reading the images, but also the interventional cardiologist who put in stents like Umberto just indicated.

The preventive cardiology who cares a lot about plaque and how I'm going to treat that plaque. the primary care doctor, or the advanced practice provider, like nurse practitioners, physician's assistants, and then most importantly the patient.

And so what we have to do is we've to take all, otherwise we're just in possession of a secret that nobody understands. So you have to translate it into ways that empower people.

My brother, for example, is a primary care physician. And, you know, he's told me, I take care of people, and I don't take of pixels on an image. So if you're gonna give the information, it's gotta be actionable, And it cannot take me an hour to decipher everything.

You've gotta give it to me in a way that I can act upon in way, that's positive for that patient. That's what you guys have done. I love it. So, based off of a lot of the scans and patients that you guys have seen go through the Clearly Heart Scan, What are some of the treatment modalities that you've seen be very effective in reversing a lot of this heart disease based off the scans that guys have done?

I think it's lifestyle. I mean, there's a number of ways you can approach this. First, just from an allopathic medicine approach, like we believe strongly in medical therapy.

That medical theory comes in many different forms. It comes the form And in cardiology, it's bolstered by the randomized control trial, which is always the sine qua non of what is the best scientific evidence.

There we've probably got a dozen different medications that you can use to prevent heart attacks from happening. You know, we had statins for some reason there's controversy around statin, but that those are tried and true.

There's, um, Bempadoic acid, there is icosapent ethyl, There is PCSK9 inhibitors, theres the GLP1 like the semaglutides, Theres the SGLT2 inhibitor. Theres just tons of medications we have.

That's one way that we can treat it and I think it's a very effective way. Lifestyle is underrated in medicine because historic, or doctors just don't have a lot of time with their patients, right?

They're seeing every patient every 20 minutes and they're just running through it. But the lifestyle makes a huge difference. On my way here, actually today, I got a text from a nurse.

She's now 50. she just turned 50, she got her first scan when she was 47. And she had a family history of heart disease and she has a tremendous amount of plaque.

And she's a nurse, remember? But she was like, I don't want to treat this with medicines. I said, no, think I'd treat it with medicine if I were you. And, she said no I'm going to completely revamp my lifestyle.

Her lifestyle then consisted of just extreme healthy diet, daily physical activity, meditation, sleeping better, reducing anxiety, And it's the most dramatic case I've ever seen.

Like she came in with a tremendous amount of plaque. She's reduced it by almost 90%. It's just crazy. And usually when you see it sort of starting to disappear, that's when people are young, younger, and she's very young.

But when your older, it is that transformation that we talked about from sort the non-calcified to the calcify phenotype that But you can tackle this with lifestyle.

And to me, that's why it's so important to find people early. When I just see a little speck of plaque, now you're talking about, you could offer lifestyle modifications.

Once you get a certain amount of plaques, Now that person's on a medicine for the rest of their life. And so why not intervene when we can do this non-pharmacologically and just do it through improving healthy lifestyle?

Absolutely. Wow. Yeah. So some of the doctors I've worked with, the common thing I see in the medical standpoint outside of lifestyle is just statin, PCSK9 he was talking about, which is repathets and injection, and then the GLP ones for inflammatory purposes.

And we've seen people going from 70, 80% blockage. We've see them get reduced to 50, 40% in a matter of six to eight months. when they get on these heavy doses of statin.

But again, why take all that medication? Just get scanned now and track yourself over time and just make sure it doesn't get to that point where you need medications.

Lifestyle is just so important. The other thing is that even though cardiology, like we are the most evidence-based medicine field, but when you look at what we call the relative risk reduction, how effective is a medicine?

Take statins, for example. In every trial, it's about a 20%. relative risk reduction. What that implies is that 80% of the people aren't benefiting, and we don't know who they are.

And everybody I hear talks about, my numbers are good, what they typically are referring to are cholesterol numbers. But again, I will tell you that out of 100 people with high cholesterol, 70% don' have any disease.

I can find a bunch of people who have normal cholesterol who has severe disease, so the numbers that we should be talking about are disease numbers rather than markers of disease or surrogates of diseases or, you know, signs of.

I think we should just be measuring the disease itself. So to Umberto's point, his patients come in and they want to track their progress and know that they're actually getting better.

Why, why do you wear this, these wearables that, that Umbert has on? Because you want them to know you're getting. The most direct way to getting is just to measure what's happening to my disease.

So in your professional opinion, why do you think our traditional system is so focused on these numbers that are not the disease numbers? I think they were the best we had, right?

So if you think about, you know, all of the risk factors that we know today, smoking, cholesterol, diabetes, high blood pressure, and so on, we learned those from a very famous study called the Framingham Heart Study in cardiology.

Framingsham, Massachusetts, like this town participated and we learnt what was associated with heart disease. It's not patho-pneumonic for heart, meaning it's like having high cholesterol doesn't equal having heart Having high cholesterol means that if you were to compare one group of people, a million people over here versus a billion people here, and one had a higher cholesterol level, they're gonna have more events.

But within that million, you cannot pinpoint the individual who's going to have the event. And while the randomized trial is great for stratifying groups of, it's not so great at personalizing medicine.

So if can get to N of one medicine, And on a bed of randomized controlled trial evidence, I think that's the strongest way to treat people because you're treating people according to the evidence but you are treating them as a person rather than as group.

I love that. That personalization is key. And you mentioned it, the NF1 data where you could actually focus on that individual and make a huge difference in that individuals heart health.

I'm going to switch gears a little bit here. And I know we're running a bit short on time here, but I want to talk about this because I am personally passionate for this.

You were talking about lifestyle. Sometimes people's lifestyle can't get changed too much. And what I mean by that is what they do for work. Myself, I was a firefighter paramedic for 12 years.

It is knowing that first responders, firefighting parametics, police officers, when it comes to heart disease, it's up there. So I know you guys have worked with many, have scanned many firefighted parometics.

First responders, high-risk groups, and future of screening

Well, let's talk about that. Just because I do have a lot of first responders that tune into the podcast that I'd like to put some extra emphasis of the importance of how this test can really help save a Yeah, I mean, so here's how I see the problem.

And cardiovascular disease is number one cause of death. Everybody says that, but nobody dissects it. If you think about it from, everybody thinks that it's a disease of the elderly.

It's not. The average age of sudden coronary death due to a heart attack in the US is 50 years. So it is young. That means half the people are younger than 50. People think it's a disease of men.

It's not. There are more than three times more cardiovascular deaths than women than breast cancer deaths. So like, it is the number one cause of death in women too.

there are certain occupations that put you at higher risk. And it tends to be the first responders are definitely that. That was something that was passionate to us.

If you look at firefighters, their average age of heart attack is in the early 40s, not in 50s. So then we're talking about really young people here. You go to the Middle East, they talk about 20 year olds coming in with heart attacks, 30 year old's coming with a heart attach.

And so we just need to start to segment certain parts of the population that are just at such extreme risk that they need more heightened awareness. And we were lucky enough to meet a gentleman named Chief Baker.

So he was in North Metro in Denver. And he had a passion for, he said, I've had too many times where I had to go to the ER because one of my guys went down and sit with the family.

I never want to see that again. And so yeah, we've done thousands of firefighters where we started with them. The first responders we would expand to police officers and EMS as well.

The adrenaline that you get, like the ups and downs of the adrenaline, the, you know, sitting in a car all day, having to eat out all the time. Like all of this contributes the high stress environment.

Yeah. The sleep deprivation. I mean, we were talking about the jackets, right? Like, I, mean when those jackets get hot, in like a firefighter. Like they exude something.

Yeah, the PFAs and all those others. That is atherogenic, like promotes the formation of athrosclerosis. And so, I mean, we have found just scores of firefighters who completely asymptomatic.

I was telling you the story, there's a guy who was like, no, don't have any symptoms. We saw his skin and we were like wow, this gentleman is very sick.

and went back and said, are you sure you don' have symptoms? Well, usually I lug 200 pounds of gear up, you know, by fifth floor I get a little winded.

I'm like, man, if I just walked up five floors of stairs, I'd be wind it. But for him, that was what the symptom was, right? And he's like yeah, in hindsight, maybe I was slowing down a bit.

So just, I think that the firefighters, like they are heroes. They go out, they save our lives and we need to keep them healthy. So that's definitely a passion of ours.

Like we will go to other first responders just because of the risk, but the fire fighters were the first that we really worked with fire departments to screen.

Damn, and that's something that I'd love to really get the word out more, work with a lot of the different chiefs of different fire departments here in South Florida.

And Hubert, you know, You and I talked about that. I think it's Something that even you guys offer a special for firefighters and first responders, correct?

Correct. Yeah, we definitely do a Lot of work alongside Jim's company and clearly and we Definitely, like you said, firefighters are like the first ones that we need to get this scan out to.

And we're sitting in a city that's very special. There's a, at the time there was a commissioner here in Broward County named Mark Bogan. I think he's the mayor now of, of Fort Lauderdale or, but he, I mean, he is a public servant and he came up with this idea where he was asymptomatic and then suddenly was found to have severe heart disease.

He's been very public about that. And so they passed a bill where they have now screened, I think, 5,000 people here in Broward County and have just saved countless lives here.

So he's ahead of his time. He's a pioneer. We're taking the more traditional route to do the clinical trials to prove it, to make sure that we can get into the professional societal guidelines and ensure that the payers know that there is a massive positive ROI.

We save lives and we save money and do good for mankind. But my hat is off to Mayor Bogan because I think that he was truly a pioneer. That's amazing.

Doc, you know, as we wrap up here, in the next five years, what do you want to see with ClearlyAid? Where do see your technology going in near future?

I think that we, I mean, we feel that, uh, service patients with heart disease, um, better than any tool out there. Um, whether you have symptoms or no symptoms.

I always said that our biggest swing here is that I'd like to see the world starting to use imaging to screen for heart disease. Given that it is a silent disease in the majority and people will die or suffer catastrophic events without any antecedent symptoms, the only way we tackle this problem is to go up in home and find these people.

Otherwise, we're just left with the number one cause of death will always remain the first cause. So our goal is to become the standard of care for coronary artery disease and to offer solutions that help doctors and patients in the symptomatic typical, hey, I've got shortness of breath or chest pain.

That is not a trivial problem. We're talking about 20, 25 million people a year in The U. S. annually for that. And our bigger swing is let's create the evidence and the evidentiary foundation to prove to the world that we should be screening.

And Humberto, if there's someone listening to the podcast or viewing the podcasts and really resonates with the message today or any of the doctors that are tuning in, what is that last thing you can leave them off with?

I would say, don't wait for symptoms to happen. Get the scan done and don' wait fo symptoms. Like he was saying, be more preventive. If five years from now, I wish this thing becomes like a mammogram for women or a prostate check for men at 40 years old or whatever age the evidence says, get a scan, done measure, and then follow what's going on.

But don''t wait f symptoms because your first symptom might be death. Amazing, amazing. And doc, if people want to find you, how can they find They can just go to clearly.com or clearly health.

Yeah. And with us three t radiology. We could take care of your heart health, whole body MRI. So you got both leading cause of death and heart attack.

You got cancer screening as well as the number two cause death. Amazing. Gentlemen, it was a pleasure having you on a healthy point of view podcast. Thanks for having us.

Thank you, Sam. Guys, you heard him. Doc was very detailed on this. The data that we're looking at, what data are we looking? Are we look at the data of the symptoms?

Or are looking the the actual disease? You make the choice, right? If you don't hear Doc with what he's saying here, if you want to prevent heart disease, you wanna catch things early, we know what we have to look.

Guys, make sure you take this podcast, share it with friends and family. This is a scan that everyone should. This is how, when we talk about prevention, early detection and treatment intervention, this is a big part of that.

Guys, make sure you like, share, subscribe, do all that fun stuff, and we'll see you for the next one.