

EpXX Dr. Ross Walker - Preventing Heart Attacks with Proper Diagnostics
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Ivor Cummins	00:49	Really looking forward to today's conversation. I'm with Dr. Ross Walker, who's a preventative health expert in Australia, discovered calcium scanning decades ago, and has carried out an enormous number of scans and has gained huge insights into the technology. So great to meet you, Ross.
Ross Walker	01:07	Great to talk to you, Ivor. Thank you very much for having me on the show.
Ivor	01:11	Oh, I'm delighted to have you on because we both have a mutual friend, who was not 100% convinced with the high value of scanning, and you had a chat with him in Australia and seemed to have pretty much convinced him.
Ross	01:27	I think the point about calcium scoring is that you have to really understand what it does and you have to have experience with it. Now, I introduced calcium screening to Australia in 1999. And I got it from, shall we say the more concerned developments of medicine. And now it's been overtaken by the CT coronary angiography. And I really object to this because there is not one scientific paper in the peer-reviewed literature to show any prognostic value of CT coronary angiography over coronary calcium scoring. But the difference is, in my country, when you have a coronary calcium score, it's probably around 10 chest x rays of radiation, which I think is a good way of thinking about it. It costs in Australia about AU\$150, whereas the CT coronary angiogram costs you AU\$5 to AU\$600 more. You glow in the dark for a few days afterwards, because of the radiation dose, and it requires an intravenous injection that potentially you could have an anaphylactic reaction to. And also, people aren't thinking about the potential effects on your kidneys of having intravenous dyes as well.
	02:34	So I say, stick to the coronary calcium score for screening asymptomatic people as a risk for cardiac disease. And it's my view that all males at age 50 should have a coronary calcium score as routine health screening. All females at age 60 should have it. Now if people listen to this and they've already had a heart attack, stent or a bypass, coronary calcium scoring is completely useless for those people. You've already had your problem, you don't need to have the fact that you've got heart disease confirmed. And also, once people get up to scores of around 300 or above that, I never repeat the test. And it's got nothing to do with the inaccuracy of the test; it's because you can't guarantee i. e that you were scanning somebody again five years later on the same machine, you can't guarantee that they take the same breath hold, that you're starting from the same

spot with the scanning, you're hitting them at the same part of the cardiac cycle. And the problem is you're getting a two dimensional still image of a three dimensional moving object. So once you get up to three or 400, you can miss 100 either side of a plaque and so someone will focus on the score and go, "Oh, I've gone from 400 to 600," when really it might be around the same amount of atherosclerotic burden.

Ivor 03:55 Right. Okay. So that's interesting, because if, for instance, I would know people who'd have a score around 1000 and over the years, they'd verify... actually, I work for IHDA, and David Bobbett, the founder, had a score around 906. And he verified over the following seven years that he's only now about 1100. So I agree, there's a variability; I mean, plus or minus 100. But he's shown that he's effectively gone down to an average of 5% per year, approximately. So he's very, very different than someone who could go 900, 1200, 1400, 1700. So we just see value there in terms of monitoring.

Ross 04:37 To an extent I would, but I find that... I do a test called applanation tonometry, which measures arterial stiffness. It's just a little probe over the radial artery at the wrist; completely painless. And it's been pioneered by a few people in England and in Europe as well, in France as well. It's a really good simple test. And I use stress echocardiography, and if I see improvement in arterial stiffness, which is completely non invasive, much cheaper, painless, and doesn't involve any radiation at all. And with stress echocardiography, that again is no radiation, you can see that the heart is nice and stable and you use your blood test to verify that as well. And also, the point about coronary calcium scoring is that I just feel that we're looking at numbers too much. All I'm really interested in Ivor is that people are either in the very low risk range, which is zero up to about 10. The lowest risk range is zero to 50, low risk is 50 to 100, medium risk, 100 to 400. And above 400 I say is, "Don't read Tolstoy."

05:47 But getting onto the radiation issue for a second, I say there are only three advantages of being over the age of 50. Number one is wisdom. Number two is grandchildren and number three, you lose the sensitivity to medical radiation. So you're not going to get a cancer out of a calcium score or intravenous CT angiogram or a nuclear scan. A lot of people don't talk about nuclear scans. They're about 300 chest x rays of radiation. So I like to limit radiation to people below 50 and only focus on people above 50.

- 06:20 I'll give you a couple of interesting examples. I have a 32-year-old female patient, and I would almost never do a coronary calcium scoring on that group of people, but her father died at 31 of familial hypercholesterolemia. Now her cholesterol level is 12.4, so I set it down for a coronary calcium score and it came back at 48 in the middle of the mod range, but a huge amount for 32-year-old woman. So I'm hammering her with statins, because she has severe hypercholesterolemia and coronary calcium and a strong family history.
- 06:54 But I've got a 58-year-old woman who has lifelong cholesterol, who has 9.5 millimoles per liter, and she tried statins, couldn't lift her arms after a few days because of the severe myalgia, and she saw a doctor, "If you don't take Lipitor, you're going to die," all this scaremongering nonsense that you get all the time. She came to see me, sit in downstairs for calcium score, zero. So in her case, her cholesterol wasn't spilling into her arteries. So for the next eight years, every scaremongering doctor said, "If you don't take Lipitor, you're going to die," rubbish, rubbish, rubbish! She came back to see me eight years later for another calcium score. Cholesterol still 9.5 because it's all genetic, as you know, in familial hypercholesterolemia, and a calcium score was still zero. And so in her case, she doesn't need statins.
- 07:46 There was a beautiful study in the Journal of American College of Cardiology, October in 2015, where they looked at 5000 people over 10 years, 77% of the people in the trial fitted the US criteria to be on a statin, but half of them had a zero coronary calcium score. And those who did their event rate was so low over the 10 years, the conclusion of the trial, "Statins are worthless for people with lower zero coronary calcium scores."
- 08:15 So it just annoys me that people aren't looking at coronary calcification as the best risk marker for heart disease. Not cholesterol, I think cholesterol is overdone.
- Ivor 08:28 Yeah, I'd certainly agree on the cholesterol point. And just to your examples there, I know they're just n equals one. But I have a guy in the US who's 29-year-old and his father died at 38 with a massive heart attack. His cholesterol wasn't high at all, and they didn't want to give them a scan. And he eventually push through because I've been pushing this out there on the web, he got a scan, and he was 600 at 29, with relatively low cholesterol.

- Ross 08:56 And he needs aggressive respect to modification. I would give him statins, I might even think of something like that with a PCSK9 inhibitor. I'd hammer his LDL down to very low levels. In fact, in my country, there are 19 million prescriptions written for statins every year. So that's 12 scripts per person per year, because our scripts go for a month. And so it's just under 2 million of the Australian population of being given statins. And I would suggest probably 1 million of those scripts are necessary.
- 09:27 Now when we're talking about calcium scoring, the worst calcium score I have is a 68-year-old man, in the fitness industry, doesn't have an [Inaudible 00:09:36] body fat, normal cholesterol, normal blood pressure, never smoked, not diabetic, no family history of heart disease, whatsoever, but has an elevated lipoprotein (a). His coronary calcium score is eight and a half thousand. His arteries are like porcelain pipes, he's had coronary artery bypass grafting, he's now doing extremely well.
- 10:01 You see, I don't treat cholesterol; I treat risk. And the best indication of risk is an overall risk assessment, which includes the coronary calcium score and a new test called the PULS Score out of America. And this test looks at seven biomarkers that are elevated in people with vulnerable plaques. Because the calcium score tells you that you have plaques but it doesn't say whether they're stable or whether they're vulnerable. But the PULS Score then adds to that by telling you that you have unstable plaques. And if you do, they are the people who you should be more aggressive with your respective modification.
- Ivor 10:39 Right. And that PULS Score, I'm vaguely familiar with it but I'm guessing inflammatory markers or like Lp PLA2 or plaque 2, those kinds of tests, looking for...
- Ross 10:51 Yeah, you're right. But they're even more esoteric than that. There's all these different like [Inaudible 00:10:58] to and oxidized things. So it's a whole lot of different things. I could send you the list, but it's not worth rattling them off right now. And they look at HDL and HbA1c, and age and family history. And they give you the score. It's like a Framingham Risk Score. Over five years, they give you the score and you look at that. I think that's a really good thing to do as well.
- 11:20 The other interesting thing with all of this in terms of risk assessment is that when I look at, again, going back to the calcium score, when I look at the calcium score, it's not just the score, but it's the volume. And a lot of people don't get this. Just so for example, you have a coronary calcium score that starts

off let's say 80 and your volume, 60. I've had a number of patients who have then gone up from 80 up to 200, but their volumes dropped down to 40. Now that's telling me, their arteries are just becoming more stable, and the volumes contracting, or in other words, you're removing fat from their arteries. Because in reality, we don't want to get all the calcium out of people's arteries; we want to get the fat out of their arteries. And that's what comparing the calcium score to the volume tells you.

12:05 I have a number of patients in my practice, who, mind you, 10% of my patients can't tolerate statins, but I've had a number of patients who followed all the right lifestyle principles and taken some other natural therapies and I'm more than happy to talk about, and I've been able to reverse their disease on the calcium volume, as opposed to seeing the progression of the calcification. So you have to take all of this into perspective and not just focus on one marker.

12:31 And there's a few other very good risk assessment techniques that people aren't talking about. One very good one is a thing called the Omega-3 Index. And the Omega-3 Index, as you're probably well aware, measures the amount of Omega-3 you have in your cell membranes of the red cells. In Australia, we have a reasonable amount of fish but the average Omega-3 Index is around 4%, which is very poor. In places like Japan where they have a huge amount of fish, that goes up to 8%. And there was a study in the New England Journal of Medicine a couple of years back by Dr. Harris and colleagues, showing that the Omega-3 Index is a much greater risk protection than cholesterol. So there's a whole lot of other things we need to think about as opposed to just this obsession people have when looking at damn cholesterol levels.

Ivor 13:22 Yeah, the cholesterol has been an enormous distraction really in many ways over the decades. I talked quite a lot about that in my talks and other podcasts. The Omega-3 Index, I couldn't agree more, it appears to be a very powerful marker of health and there's a huge body of science around that ratio of Omega-3 to Omega-6 in the red blood cells and how it indicates a lower inflammatory state and a much healthier physiology. So I think OmegaQuant and other companies give the test and they kind of recommend over 10 ideally, as you say. And I think America has an average of four point something as well and it could be a huge part of the massive heart disease in America compared to these other countries for sure.

14:07 So when you talk there about volume and density, that's a very important point. It was raised to me by Dr. Michael Eades in the US a couple of years ago, and he sent on some papers. They were fascinating where they actually looked, and there's a hyperbolic kind of relationship that as Agatston overall score went up, risk went up. But as density was high but volume was relatively low, risk went down again, more like a low scoring person. I put that out there quite a bit just to show that it's nuanced. And he has also seen people who have gone to a lower carb diet when they've had diabetic dysfunction and their health has improved markedly and their score has continued to rise a little over the following years, but the relative volume is stable or dropping. And I guess it's just the body continues to do the repair process, you know, [Inaudible 00:15:02] continues, but it's not going up like Heinz Nixdorf study. It's not going up 20, 25% a year and volume and density both rising, which is the dangerous thing. Yeah?

Ross

15:13 Yeah, exactly. And that's where I think so many people do not understand coronary calcium scoring, because they purely focus, as you say, on the density and not looking at the two things together. And I always compare when I'm doing follow up scans in my patients that are lower risk. Another thing we're talking about the aspects of cholesterol that I think people are missing out, when you look at so for example, familial hypercholesterolemia, which is only really 5% of coronary heart disease, but it's a very good model for this discussion. If you look at that 50% of people with familial hypercholesterolemia, by age 50 will have a vascular event. Now, if you're an optimist, 50% of people won't have a vascular event. And I'm finding that the people who don't have the vascular event in that 50% of people are people with a significant amount of large LDL cholesterol. Because it really annoys me when people get so focused on the LDL which is just as you know, an extrapolated figure on a blood test whereas really, it's looking at the sub fractions. And if you have small dense LDL cholesterol, that is obviously pro atherogenic, whereas large LDL is important. We need it for cell membrane function, we need it for cell metabolism, basal metabolism, steroid metabolism, vitamin D metabolism. So we have to have a reasonable amount of large LDL and also large HDL. And a lot of people don't realize that small HDL is pro inflammatory.

00:16:43 So I say to people, this is where size is important; the larger the better. So get your LDL large, get your HDL large. And statins don't have a huge effect on pushing you from small to large, but there are... you've already mentioned one very important thing

which is going on a low carb diet. That pushes you to large LDL. So a lot of people will start off with a cholesterol of say 4, triglyceride of 2, and an HDL of .9. And then they'll go into a low carb diet, their cholesterol go to six and a half, but their HDL also goes up and their triglycerides drop. They think they're getting worse because the cholesterol is going up, but they're actually getting better because they're getting more large HDL and large LDL.

Ivor 17:25 Yeah, exactly. And effectively, any diabetic physiology they have, even if undiagnosed, they are resolving and the gut is kind of the biggest driver of heart disease in the world, arguably. So yeah, it's the right way to go.

17:37 Interestingly, on familial hypercholesterolemia, there are many papers, I think I gathered around six or seven studies. And the people who get heart attacks really early, FH people, and these are proper genetic identification, not just that they are identified by having high cholesterol. But the people who get early heart attacks versus those who're aging have no heart disease whatsoever. They have the exact same level of LDL, pretty much.

Ross 18:01 Yup, yup. It's small versus large.

Ivor 18:05 Absolutely! And there are many other papers showing that the HDL level and certainly size, and the ratios of the cholesterol, which indicates your degree of insulin resistance, are hugely important in deciding who with FH is a problem or not. Exactly as you say. So I guess FH people, for me, they've got a genetic susceptibility to heart disease but it's mediated really by the same kinds of problems that give non FH people heart disease, right, the same kind of issues. Yeah.

Ross 18:34 if I can pick you up and agree on vital point you made before, it's my view that 70% of heart disease is directly related to the insulin resistant gene, 20% use a lipoprotein (a) and 10% due to the less common genetic abnormalities, such as FH and problems with [Inaudible 00:18:54], and a few other things that go along there. So really, we've got to be focusing on this big population of people who are insulin resistant, which, in my view is 30% of Caucasians, 50% of Asians and close to 100% of people with darker or Mediterranean colored skin, are the people who are born with the gene for insulin resistance. And as soon as you expose them to Western rubbish, that's when they start to get all the problems with vascular disease. Whereas the Lp(a) you can be a Franciscan monk or a [Inaudible 00:19:25]

self abuser, it can still get you at any age, depending again, on how much small LDL is in the Lp(a) head, the LDL on the head of the Lp(a). So if you got a lot of small LDL, because if you line up 100 people with a high Lp(a), about 70 will have a vascular event in their life and 30 won't, and the 30 who won't have large LDL in the LDL head whereas the other 70 have the small LDL.

- Ivor 19:53 Yeah, and yet again I guess Lp(a) in a sense indicates the susceptibility which may or may not come to pass depending on the other important dynamics. It's interesting with Lp(a)...
- Ross 20:04 Absolutely!
- Ivor 20:05 I've a disclosure, I have super high Lp(a) and I've really high particle count as well, but I've zero calcium score at near 50. But we have guys in their 60s and gals with zero calcium scores, and even a couple that got the angio who are pretty much amazingly clear. And some of them, the highest LDLs we have there are up to 9 millimole of LDL and even some super high Lp(a)s. Now 9 millimole, that's, for the Americans, 360 milligrams of LDL alone, zero in their 60s.
- 20:41 So your point is well made, the cholesterol will hopelessly mislead you. I always kind of indicate, look at it as a pointer, particularly look at the ratios or the small dense measurements which are more indicative. But then of course get a calcium score, find out if you have a problem or not. I mean that's the bottom line.
- Ross 21:01 Yeah. You'll always get these people who tried out the very occasional situation where someone has zero calcium score, but on the CT angiogram, they're sort of 70% blocked. Often when you do the proper angiogram, it's a 30% blocked. So I believe CT angiogram often cause the severity of obstruction. And to trot out one example when you might over radiate and over investigate 99 people who don't have any problems with a zero calcium score, my friend and colleague Matt Budoff in California, who I'm sure you know very well. Matt says, "Beyond a doubt the calcium score is the best predictor for heart disease. It's been proven time and time again."
- 21:45 Can I make another point, just when we're talking about prevention here, I get a bit disturbed by the excessive focus on drug therapy. And the reality is that, and I'm quoting here, the MORGENTHAU trial. And the MORGENTHAU trial backs up what I call the five keys of being healthy. And this is an increasing order of

importance. Number one, you cannot be healthy and smoke, drink too much alcohol or snort cocaine. So anyone who has any addictions to anything is sick. Number one.

Number two, we don't focus on this enough, is seven to eight hours of good quality sleep every night is as good for your body as not smoking. And there's a recent TED Talk called Sleep: The New Superpower; it's brilliant talk. Number three is the third best drug on the planet, which is nutrition. And nutrition is easy. It's called, "Eat less food and eat more natural food." And the best diet in the world is clearly the Mediterranean diet, which basically is based around two to three pieces of fruit per day, three to five servings of vegetables per day, and little bits of meat, eggs, dairy, chicken, fish, nuts, grains and olive oil. It's a very simple diet and it actually has some long term science behind it.

Number four is the second best drug on the planet, three to five hours every week of moderate exercise. And number five is easily the best drug on the planet, a thing called happiness. And a 75-year-study from Harvard released a couple of years ago, showed the one key to health and happiness is to have someone else in your life who loves and cares for you, who you love and care for. And I don't think we focus enough on the vital importance of those five keys.

00:23:31

And the MORGENTHAU trial (out of Holland) showed that if you follow those five keys, so the people in the highest quintile versus people in the lowest quintile, an 83% reduction in cardiovascular disease with no side effects. If I give you a statin drug in an average dose to lower your cholesterol, it's about a 20 to 30% reduction in cardiovascular disease and a heart attack. If you're in a high dose from things like the JUPITER trial, say 20 milligrams of rosuvastatin, that's a 50% reduction in cardiovascular disease, but with the potential for a bucket of side effects. And it's my view that the side effects are under reported in clinical trials.

24:13

So for example, let's pick on myalgia, which is probably the common side effect of statins. Myalgia is reported in less than 5% of people in clinical trials. But they have a very strict definition of myalgia, muscle pain with a CK level three times the normal level. Whereas I see so many people who get pain without a CK rise, stiffness in their muscles, weakness, cramping, and even loss of muscle bulk with no effect on their CK at all. Now, they wouldn't make it to the clinical trials and I would suggest you Ivor, that's about 20% of people. I do not

personally prescribe as a cardiologist fat soluble statins. Atorvastatin and simvastatin, I don't prescribe them at all. Because I believe they penetrate through the membrane so much more because they evidently bind to a fatty membrane and in a healthy person, the membrane of the cell is 75% fat. So they're ripping out healthy cholesterol out of the cell membranes. I only prescribed the water soluble statins, rosuvastatin and fluvastatin and only for people that have either a high coronary calcium score or proven pre existing heart disease. They are the only people I give statins to.

- Ivor 25:26 Yeah. That lines up exactly with myself, IHDA, and I think a doctor Aseem Malhotra, friend of yours, who is...
- Ross 25:33 Ahh, very dear friend of mine, yeah.
- Ivor 25:35 Exactly the same thing. It's not anti-statin generic kind of belief system. It's for high calcium score, proven heart disease, prior event, people who have disease. There's a beautiful study done, it was associational and it might have been the one you mentioned, Joshua? [Inaudible 00:25:54] is the lead author, late last year it was released. And it essentially tracked the people who had scores, all the brackets of calcium scores, and whether they were taking statin or not and they tried to standardize all other confounding factors. The result they got was zero to 100 calcium score, statin over 12 years showed no relative benefit. And over 100 score and over 400, there was a 30 or 40% relative risk reduction of events. Relative. So in fairness, mortality is a smaller effect, but relative.
- 26:30 But it just illustrated again, the statins mitigate the disease process, stabilize the plaque in people who have substantial active disease, but they only have room for potential harm in people where there's no particular burden of disease to actually mitigate. It seems so obvious in a way.
- Ross 26:51 Can I also make the point here, that all the studies that show a significant benefit from statins are typically done in, shall we say, overweight Americans and overweight people who don't have a healthy lifestyle. And there are actually no studies done of statins in people who lived a very healthy lifestyle, to see if they really do give added benefit. And we're extrapolating evidence from people who are very high risk for heart disease or have already had heart disease down to the low risk population.
- 27:23 I'll give you a very disturbing example. And now these are, as you said before, n equals one. This is an anecdote, not a clinical

trial. But I saw a patient I've been looking after for a couple of years the other day, just reminding me of the story. He was started on statins at age 23. Why? Because his cholesterol was high. And at age 50, came to see me with a story that he'd not had one, not had two, but he'd had three separate cancers. We're not talking about a cancer that's spread to other plate, we're talking about thyroid cancer, [Inaudible 00:28:05] cancer and prostate cancer in the one person over three years.

28:08 Now, I've got to say to you, I don't have any clinical trials to back up what I'm saying. But I only see these multiple cancers in people who've been on long term, fat soluble statins. So that's why I don't use them at all. I only use the water soluble ones. I haven't seen it in people in water soluble statins. I saw another fellow who'd been on 10 milligrams of atorvastatin for eight years, and within six months had four different primary cancers in his body.

28:35 So I just think we've got to be a bit circumspect about who we throw these drugs at. I saw another 35-year-old man who came to see me with a high cholesterol. He was on 40 milligrams of atorvastatin. I said, "What are you taking this for?" He said, "Because I've got a high cholesterol." I said, "Yeah, what are you taking this for?" And he went on to tell me that his wife had been through three unsuccessful cycles of IVF. And I said, "Well, it could be the atorvastatin. Stop it!" Within six months, she got pregnant without any intervention whatsoever, apart from the obvious one.

29:08 So seriously Ivor, I just think, the first line of the Hippocratic Oath is first, do no harm. So this is my argument. If you have a high coronary calcium score or existing heart disease, there's your 10-year risk for a heart attack so therefore statins might be worthwhile for you. Whereas the 10-year risk of statin is about here. If your coronary calcium score is low or zero, there's your risk. So why would you take a drug that has a potential risk to your body more than your pre existing risk? And you mentioned before, the 30 to 40% reduction in a disease, if your starting risk is 5%, you're taking your risk from 5% down to 4% over 10 years, which person in their right mind would take a strong synthetic drug for 10 years, profoundly affecting their metabolism for an absolute 1% reduction in risk? I mean, I think it's just craziness. But people are doing this all the time.

30:19 So I say, "Look at your initial risk." In fact, there was a study that was released in the Annals of Internal Medicine only a couple of weeks ago, that showed that the only people who derive

benefit from statin therapy are people who have an estimated 10-year risk of 15% or above. Now I'm hearing a lot of my colleagues saying, "As soon as their risk gets to 7.5%, we should be giving them statins." There is no scientific evidence at all to support that view.

Ivor 30:47 Yeah, and I think to your point, even if there's a relative benefit that's of a similar magnitude, the absolute becomes small enough that why would you take the risk of permanent daily medications with potential effects to have an absolute risk so small a drop? It just doesn't make sense. But I guess the medical people, the busy doctors all around the world, I don't think they're dissecting these numbers. They are busy people, they just accept, "Oh, it reduces the risk a lot," and b) "It's something I can do for the patient." Because most doctors giving the patient the right dietary advice or low carb, they're not even going to be giving that and if they give it, it feels like kind of a natural path, diet and lifestyle, treatment. It's not what the patient paid for. They paid to get some magical drug. Is there a lot of that psychology with most doctors that, "Well, I can give a pill that reduces the risk and I can do something, in minutes."

Ross 31:46 Look, can I say, the whole system is beautiful, and it's a beautiful game that's disgraceful. Let me tell you what it is. The fat guy goes into the doctor and says, "Doctor, I've got cholesterol." The doctors doesn't say, "No, no, no, you're a fat slob, you need to lose weight." The doctor says, "Oh, I can fix that. Lipitor. Next." So the scripture in Lipitor, the fat guy walks out of the doctor's office goes, "Off you, I didn't get a lecture about being fat, I can just take this, what I like."

32:13 Now that really disgusts me, that whole inference, that the key to good health is lowering a number in your bloodstream with a pill and that you can eat what you like because you keep your cholesterol low with a pill, which is rubbish anyhow. And it's dismissing the whole fact that eating good quality foods, you're getting high quality micronutrients, high quality macro nutrients into your body that are not only affecting maybe your lipid profile in a positive way, what you and I were saying about shifting you from small to large LDL, very positive, but it's also making your blood more fluid. So you're getting much, much less thick blood, to use the Reader's Digest term. You're also getting the anti inflammatory immune support of a good quality diet. And also if you have a diet that's high in, and this is the only problem where I have an issue with fat, is if you're getting trans fats, the synthetic fat... and a great con job that happened in New York a few years ago is that they had these big signs in

all the restaurants, "We no longer cook in trans fats," because they use a different process called interestification, that still creates synthetic fats. So you're still getting the same effect that will thicken and harden food and it thickens and hardens the cells in the arteries when you have trans fats and processed carbohydrates.

33:37 I say to my patients, "Don't have processed packaged Mac masquerading as food, don't have that and get rid of white death." What is white death? Sugar, white bread, rice, pasta, potatoes, go straight to the gas. And I don't know which you have there in Ireland, but what we have in Australia is this hybridize weed called [Inaudible 00:34:01], which is full of gluten. So every sicken man [Inaudible 00:34:04] in Australia is gluten sensitive now and also they're getting a huge glycemic load from the gluten in the wheat in Australia.

34:15 I personally believe you got all the dietary stuff wrong, encouraged people to have good quality fats, which let's get on to this, includes saturated fat. You're probably well aware, I know you would be with your title, over the PuRE study. The PURE study, there are two beautiful components of that. The first one, 135,000 people in 50 different countries over nine years showing the highest intake of carbohydrate, 28% increase in deaths. The highest intake of fat, 23% reduction in deaths. The highest intake of saturated fat, 14% reduction in death. And the bit they released last year and they put in a few more cohorts. 220,000 people now, in 50 countries, the biggest dietary study in the world, over nine years, showed that if you had three serves of high fat dairy per day, and 100 grams of red meat, 25% reduction in death and cardiovascular disease.

35:14 So anyone who says to you saturated fat causes heart disease, and still there are many cardiac associations around the world putting this up on their websites hasn't looked at the latest literature.

Ivor 35:25 Yeah, I did. The saturated fat thing is somewhat of a farce now over 50 years, I agree. And even though PURE was associational, it was a 20 PhD/MD team, they did all the statistical analysis to have it as minimally confounded as possible. And to be honest, it overturned the previous associational epidemiology that suggested fat was a problem. So the whole thing's a net net, it was all kind of an illusion; the whole 50 years. But you're right the organizations after prescribing, lowering saturated fat and fat for 40 or 50 years officially, it's obviously extremely difficult for them to admit they were wrong. I mean, there's huge

stakes. So I think they're compelled to keep the myth alive for a little longer to ease their way out.

- Ross 36:12 I wouldn't say a little longer my friend, I think they're compelled to keep the myth alive. Because, supposed an expert in the area and you come out and say, 'You know what, guys, for the last 25 years, I've been wrong.' You look like such a total idiot. No one's ever going to believe you have any credibility at all. So you have to keep pushing the barrow of low fat, this low fat. You and I both know it's complete nonsense,
- Ivor 36:36 Complete nonsense. And the American Heart Association, American Diabetes Association, but then all the nutritional and dietetic associations and all the government bodies. So we're talking about that's not just a small group of academics there with an enormous face to lose. You're talking about kind of everyone in authority in medicine and nutrition. So you can imagine the power of that phenomenon to keep this myth going. Its enormous! I agree. It's going to last a long time.
- 37:05 Now there is a potential exception to the rule. Just one worth mentioning that Dr. Steven Gundry, and I'm trying to get him on the podcast, has worked a lot with ApoE4 people, and my sponsor, David Bobbett's ApoE4 with massive heart disease. And there's some evidence that ApoE4 genotypes who clear fats at a much lower level, if there are ones that are affected with major disease, or diabetes, or coronary disease, so their metabolism is impaired, may have sensitivities particularly to dairy or possibly rich, saturated fat and high protein foods. So this is something we're teasing out. But even then, that would be an exception to prove the rule. That would be a small, narrow group of diseased ApoE4s who have to be a little careful. It doesn't have any reflection on the broad healthy population who just want to avoid disease.
- Ross 38:04 Don't get me wrong, I think that there are certain situations in medicine where the one size never fits all and I don't think we should be going around saying, 'Everyone should be having as much saturated fat as they like.' I think that's a bad message to get out there. I still say to people, 'The big problem in the modern world as far as health goes is obviously diabetes.' And part of diabetes is excessive caloric intake. And if you push the whole Atkins notion, people think, 'It's okay to have as much bacon and eggs. I just have the roll at a time.' So I still think we have to suggest to people, 'You have to keep your calories down,' but the mix should be more of just natural foods, of which saturated fat is part of the natural foods.

- Ivor 38:46 Yeah, I think that's fair enough. And in a world where I think the figure is 64% of American adults over 45 years of age now, 64% of them are officially pre diabetic or diabetic. And that's only using glucose measures. So probably 75% of over 45 are essentially diabetic, if you're measured their insulin and postprandial insulin. So we have such an enormous amount of carbohydrate intolerance now in the populations. The machines are all broken, so of course, the carbohydrate has to be minimized. And that's going to mean you're going to be eating a little more healthy fat, for sure, yeah.
- Ross 39:22 Totally agree.
- Ivor 39:24 So we might circle around back to calcification, Ross. I mentioned there in our previous correspondence, we have an interesting phenomenon happening in the world. I think it's early days. So the first published paper that showed actual regression of overall calcium score, like Agatston, I know we talked about density volume, but the actual overall score regressing was I think, William "Wheat Belly" Davis, the cardiologist, and he published a paper with 45 patients, and around 20 of them on a low carb with some statin and fish oil, DHA, EPA in multi intervention. He got 20 people to regress,. Statistically significantly around 15, or 20%, I think, from memory, and around 20 people of the 45, stabilized and flattened and a few percent increased. So it's kind of in principle regression showing which is against the medical dogma that calcification once you've got a generally pops up 20% a year and keeps going.
- 40:32 And then recently, we have people from all around the world who are seeing even bigger drops, like 1200 down to 850 over a year. I've got 3600 down to 2400 over two years. I mean, lots of figures. And what they're doing is actually low carb, they're fixing their diabetic dysfunction. They're taking vitamin K2, which was very involved with the management of calcium in the body, but nothing's proven yet, and magnesium, selenium. So what do you think it means for the actual Agatston when you make a sudden healthy lifestyle switch and fix all your blood markers so you do really good stuff, and in the next year or two, it's substantially drops on the same scanner? What do you think of that?
- Ross 41:19 I think that's regression. I agree with you. And I think it is possible to regress heart disease. And you mentioned things like vitamin K2, the dose is 180 micrograms, to the Rotterdam study,

again, surrogate markers. What annoys me as an integrative cardiologist is that they say, "You don't have any mortality morbidity data for things like K2." You don't need it. See, a pharmaceutical drug is like a high performance motor car. Gets you from A to B very quickly, but with the potential of crashing and killing yourself. So you need a lot of rules, you need safety mechanisms in the car, you got to make sure they wear seatbelts and all that sort of stuff. Whereas non pharmaceutical drugs, the supplements like vitamin K2 for example, like a bicycle get you from A to B much slower but you just wear a helmet and keep away from cars. And that's all you need to do. So you don't need the same rules for the high performance motorcars you need for the bicycle, nor do you need the same rules for things like vitamin K2 which is dose for 180 micrograms a day was shown to improve arterial stiffness and to improve bone strength. But there's no data about osteoporosis or heart attack or sudden cardiac death.

00:42:35 For example, everyone who's on a statin, I put on to Ubiquinol. Now Ubiquinol is the active version of Coenzyme Q10, because there is no doubt, there's a study in cell metabolism a couple of years ago showing that the way statins induced myalgias is by depleting the Coenzyme Q10 - I think it's the complex three in the mitochondria. And so I give all my patients about a 100 milligrams of Ubiquinol a day, with (wait for this) you mentioned magnesium, with magnesium orotate, which I don't think you can get in Europe. But the orotate actually lifts the CoQ10 up in the mitochondria.

43:11 I also use another natural substance called Bergamet, which comes from bergamot, oranges, [Inaudible 00:43:19] of Italy. And I'm an honorary Calabrian citizen because of my services to the bergamot fruit. And we did a study where we gave people 20 milligrams of rosuvastatin, got their LDL down 56 and a half percent, then cut the rosuvastatin in half to 10, added the Bergamet twice a day, which is the juice of the orange. We got the LDL down 52 and a half percent but a much bigger rise in HDL and a much bigger drop in triglycerides. And we had published in the Journal of Clinical Epidemiology where we showed a definite shift from small to large LDL.

43:52 So I think when you do all of these things for your patients in integrative approach, which involves lifestyle change, the appropriate use of statins and other pharmaceutical drugs and the appropriate use of supplements and nutraceuticals, you can induce a regression in patients, as you've mentioned from the studies you quoted.

- Ivor 44:13 Yeah, no, that's what I believe currently. And I'm currently doing a deep dive on the mechanisms of calcification around 60 papers printed out here and more to come, because I want to explore that the actual regression, if volume and density go down, what are the mechanisms of the calcium leaching back into the physiology. Because it's kind of a new thing. It's not been explored. There's no proven data on it because it's so new. But in the next 10 years, it could be a huge thing to actually have the calcium, ectopic calcium in even stable pack plaque just slowly leach back into the system. And we know that magnesium and calcium can be put into bones sequester taken out of bone when they're needed. So I'm just fascinated by this idea of the calcium slowly drifting out of plaque as the inflammatory drivers are gone and the body is healing.
- Ross 00:45:09 That's right. I think we need some calcium there if you've got a substantial amount of fat. But then as you get the fat down, you can take the calcium out as well with things like vitamin K2. So I have an integrative approach they use with all of my patients, where I do focus on all of these areas, not just pick on one, and you've mentioned inflammation, which is also very important. In fact, a colleague of mine here in Australia, did a study called the LoDoCo trial. You've got Paul Ridker in Harvard, he's done some really elegant work with Canakinumab, and his study didn't work. Showing any benefit that Canakinumabin didn't work and people with strong inflammatory markers. But this colleague of mine Dr. Mark [Inaudible 00:45:51] in Perth in Australia, he took a number of people who'd had acute coronary syndromes, gave them 500 micrograms of Colchicine as a simple anti inflammatory. And there was about a 63% reduction in further coronary events just by taking that every day one, one tablet a day. Because if you take too much; 20% of people still got diarrhea on one tablet a day. But it's pretty impressive stuff. So it's working on all aspects of the cascade of atherosclerosis. So not just working on fat, but working on blood pressure, working on inflammation, working on thrombosis, working on calcification, so you're giving people more global approach, which is the way I do it. And like you, I'm seeing significant regression in a number of my patients.
- Ivor 46:38 Which is what it's all about. I mean, stabilization is really the key, I guess Ross, as in, don't keep rising up exponentially straight to your heart event, stabilize level off. It's probably 90% of us. But to actually have regression makes a really great goal for people because your health and your longevity, it's your personal project. And one of the biggest killers is heart disease,

and to actually be able to tackle that with an integrative approach, which are practitioner and take the actions to stabilize or regress this massive killer. I mean, a lot of people maybe just don't care, they're going to drink Coca Cola, they're going to smoke cigarettes, like you said, they don't care and that's fine. But there's hundreds of millions of people if only they knew who would grab this with both hands and really be passionate, but...

- Ross 47:27 Can I just make two points. One is a personal one to you. I had an email the other day from a fellow in Canada, saying, "I really want to do a Skype consultation with you because I've been listening to Ivor Cummin and he's mentioned you and a few other things." So, you're promoting me even before you met me.
- 47:51 The other point I wanted to make about all this is that a lot of people don't understand this, they think what happened. So if you, that your artery is slowly closed over from cholesterol, it's complete nonsense as you know, what happens is that if you... imagine a doughnut with a hole in the middle, the fat comes out this way as you get remodeling, so you keep the arterial lumen [Inaudible 00:48:12]. And when the fat reaches a critical mass, it's suddenly ruptures.
- 48:15 Now the question is what makes it rupture? And it's got nothing to do with cholesterol or anything else. It's all to do with what I call the five stressors. Number one is emotional stress. Now please Ivor, tell me someone who doesn't have that. So significant emotional stress can rupture a stable plaque and make it unstable in physical stress. I'm not just talking about the physical stress of doing too much exercise. The fat guy that runs for the bus or the train can certainly rupture a plaque, but I'm talking about these lunatics that climb Mount Everest. So it's not just the tall mountains, it's also the freezing cold temperatures and the high altitude and low oxygen. And it's the physical stress of being obese, the physical stress of pain, the physical stress of an operation can rupture a stable plaque.
- 49:00 Number three is work stress. Now, one of the most elegant studies of work stress has been the Whitehall study that's gone on for years, I'm sure you're well aware, that showed that job strain which is low control and high demand, those people want to get the cardiovascular disease from work stress. Number four is what I call pharmacological stress. Any stimulants, whether it'd be legal or illegal is enough to disrupt a fatty plaque. So somebody might have a glass or two wine most days of the

week, goes up by night and has six or seven, that may be enough to make a stable plaque unstable.

- 49:36 I've had one patient, this wasn't so much a heart attack, but for a reason he couldn't explain to me, 35-year-old man, had three double shot cappuccinos in the space of an hour and went into atrial fibrillation. But then there's all these use of illegal drugs. I had a man in his 30s with a very strong family history of heart disease, went out one night with his mates on a box party, had a few lines of coke, had a major heart attack. Because as you know, cocaine is a very severe evasive constrictor and puts a strain on the wall stress, and he had a major heart attack for that.
- 50:12 And then finally, number five is infective stress. So you're going along fine, then you get influenza or a pneumonia or a tooth abscess, or a urinary tract infection. In Australia, we've got a study done at University of New South Wales showing that people had a yearly flu vaccine had a 30% reduction in heart attack by having a flu vaccine, because you're reducing the inflammation in your arteries.
- 50:36 So there's five keys. I'll just repeat them. Emotional, exercise, work, pharmacologic and effective stress can take you from having stable arteries to unstable arteries. So try to avoid stressors as much as you can.
- Ivor 50:52 Yeah, it's a fair point for sure. Whatever about lowering the overall level of disease and increasing stability. Also, to avoid those more acute stressors I guess. To some of those you mentioned there, they might be more arrhythmias and electrical effects and more so maybe than actual plaque rupture at the edge of a...
- Ross 51:11 A bit of both.
- Ivor 51:15 So is there anything else Ross, I know you've got to hard stop here. We're coming up, we've done the hour. Anything else you'd add in the general sense of preventative or anything else on scanning technology?
- Ross 51:27 What I'd like to say is that the people I see in my practice who do the best, number one best bit of icing, if you pick the right relatives, because all heart disease is genetic. So pick the right relatives is the best thing. Number two, follow those five keys of being healthy. I'll repeat them. You cannot be healthy and have any addictions, good quality, sleep, good quality eating and less

of it, three to five hours a week of exercise and happiness. But number three, if you've prescribed medications, whether they'd be natural or unnatural, take them. Because the problem is you line up 100 people after 12 months, 50% of people have stopped their treatment for whatever reason. And if you are getting side effects, ring your doctor and let your doctor know.

52:15 I said at my patients, "I don't want to hear that you stop your medication six months ago. If there's a reason you stopped them, please let me know." And then finally, people who come for regular follow up, people who have a long term relationship with a trusted doctor, who they can see on a regular basis. And if people follow that, they're covering all bases, they're the people have the best chance of regression if indeed they need to have something regressed.

Ivor 52:40 Yeah, and they're the people who are motivated for their health under, as you say, doing the right thing. Now, I guess the only caveat there is if you have a doctor who believes that it's all about the cholesterol and insists on the drug just because you have high cholesterol, that's obviously a challenge. An inappropriate drug, as you well described.

Ross 53:00 I agree with you. And I think people have to realize that doctors should be two things to people. They should be advisors and servants. And if your doctor, if it tells you you're wrong and argues and is rude to you, find another doctor. You're the driver of your own health. You must take charge of your health and ask the right questions because it's your body. No one else is going to do it.

Ivor 53:25 Excellent, Ross. And you know what, that's a great sentiment end on that. Just about captures at all. And the one last thing I'll get you to say is, I heard a figure you had done, a number of calcium scans over the decades and it sounded pretty huge. Just remind me of that finger.

Ross 53:41 Yeah. I think we've probably done over the last 20 years somewhere around 50,000 coronary calcium scores. I haven't got the number with me but I've just multiplied by how many people I've seen. It's around 50,000.

Ivor 53:53 Excellent, Ross. Well, you're well ahead of your time. The 2018 guidelines now have just come out with 2s evidence level, CAC it's going to get really big and you are they are decades in advance. So congratulations.

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Ross	54:05	Ivor, it's been an absolute pleasure to talk with you my friend. Thank you.
Ivor	54:09	Ditto! Thanks a lot, Ross. And we'll catch you again later with some new updates.
[End]		