Introduction and lab testing overview

Hi, everybody. Well, thanks for joining our Heart Disease Reversing Summit 2.0 with Dr. Kahn and myself, Dr. Fuhrman. And today is one of those days where I'm lucky enough to be able to interview Dr. Kahn in more depth and certainly important questions we want the public to know about.

And obviously, Dr. Kahn is one of the world's leading cardiologists and using natural and nutritional therapies, but also how to use these how to evaluate heart disease to make sure you're making the right decisions for your life.

So, Dr. Kahn, let's get right into this. Okay. Let's move on today, if it's okay with you to this idea of like lab tests and how on what they were able to show people how accurate they are and what blood tests people should get.

So I'm how does like a just a routine LDL, routine cholesterol level? How important is that? And how does that compare to an advanced lipid panel? And what is that what kind of information does that give us?

Sure. And I'd certainly encourage people. You know, a big theme in this summit is natural approaches and nutrition G-BOMBS Nutritarian Diet, but get some numbers at baseline and do your own study.

And you know what? We're going to talk about right now? Repeat them in 2 to 3 months. We just had a great study published in twins looking over just eight weeks and they picked twins.

So they kind of eliminated genetic differences and put them on a whole food plant diet for just two months. Keep them on a healthy version of a standard diet for two months.

Basic cholesterol panel and non-HDL cholesterol

And boy did the measures of inflammation and cholesterol and insulin use and all improved so much of the plant-based diet. So if you don't know what the tests are, you won't be able to do that kind of study in your own health. So that's why we're talking about.

So, yeah, one of those numbers you have to know it's on the standard American Heart Association language. You got to know your cholesterol numbers. And in the old days, we demanded people have a fasting cholesterol.

Actually, things like the American Medical Association have indicated just get the lab work done. If you can show up fasting, fine. But it's a value to actually have your cholesterol numbers done when you've eaten, because if they're crazy, either you're eating the wrong food or you've got some metabolic problem and you might come back and repeat them fasting.

But something's going wrong. So no, your total cholesterol, your HDL cholesterol, your LDL cholesterol and your triglycerides, and then you can, if you want, calculate something called the non HDL cholesterol.

This is really simple. But if you go total cholesterol, it's age 200. And let's say your HDL is 50, 200 -50 is 150. That's your non HDL cholesterol that actually gives some insight to in many studies.

It's actually a little better way to look at it. It's not the best way, but it's a little better way to look at it. And you don't need to do that. Fasting at all.

So, you know, again, we've got fancy methods. We'll talk about those probably in a minute, but at least do the basics, you know, and have a home blood pressure cuff and have a scale.

And we got to have some numbers. There's kind of a trend in medicine called precision medicine where we can actually measure things accurately. But I'm all for just getting the basics done, too, because such a large portion of

the population has been without a cholesterol profile in too long.

Right. So what do you need. One did what you need is advanced. Advanced lipid profiles then. Yeah. And there are tests called advanced lipid profiles.

One version of that people may have heard of is called the NMR. Light Bulb Profile NMR. There's another one called Apolipoprotein B. but there are some studies, two big ones that I'm familiar with, where they compared the standard cholesterol profile to these advanced cholesterol profiles.

They've really come down in price maybe $30, $35. And your local lab, your local hospital will run these.

Advanced lipid profiles and LDL particle number

You ask your doctor for them, but particularly if you're overweight, pre-diabetic or diabetic, you can have two people with an LDL cholesterol of 120, which I would not consider ideal, but it's not, you know, shocking, alarming.

And when you do the advanced lipid profile in people overweight, pre-diabetic or diabetic, which is about three quarters of all Americans and many people in other Western countries, the advanced cholesterol profile, the NMR cholesterol profile reveals a pathology that the standard profile didn't show.

So two people with an LDL cholesterol, 120 and you do the advanced profile one person, the particles are just crazy high, particularly when called LDL-P or LDL particle number.

And you will have a clue that you need to work harder with that patient on their weight loss, exercise, nutrition and if needed, supplements and prescription drugs.

And if you just set the standard profile, you might not have identified all that. And the interesting thing is, when you do these advanced cholesterol panels, they actually respond to lifestyle almost better than prescription drugs.

So if you get busy with all that we're learning on this summit, you can see within four weeks, eight weeks, 12 weeks, significant improvements in the advanced lipid profiles.

So it sounds like you're saying that if you're eating real healthy, in great shape, slim on a super healthy diet and your LDL is favorable, let's say, below 100, then you wouldn't need an advanced lipid profile.

But if you have these questionable LDL of between like 101 30 in your diet and your lifestyle is not perfect, maybe you should know. Look into further what your risk really is.

It is reflected by your LDL and you would consider the advanced of the profile. Well said. Okay right, what about like inflammation test, like HSE or PE or myopia oxidase things like that?

Yeah, inflammation. You know, you can't sit through a medical lecture today on heart disease, brain disease, cancer disease, obesity without hearing the word inflammation.

The middle word is flame, fire, irritation. And this is a concept that goes back at least 150 years in medical science and pathology. And in reality, we can't look in our arteries and see if there's white cells invading our arteries.

That would be a sign of inflammation. We have to do it for blood work and the most famous blood test to evaluate. And now we're talking about going beyond going beyond just your blood pressure, your blood cholesterol, your blood glucose, your scale into diving deeper to understand, are you at risk?

Inflammation testing with hs-CRP and related markers

You want to stay healthy. You want to have, you know, a youthful appearance and a youthful energy and youthful arteries. You better judge your inflammation.

So high sensitivity, C-reactive protein. And just in contrast, decades ago when people were evaluating for like strep fever and rheumatic heart disease, there was a test called the CRP C-reactive protein.

But now we specify age as CRP high sensitivity, and that's more of a cardiovascular test than it is for just arthritis and other conditions that affect the human body.

And there's thousands of studies that say it's at least as important to measure H. S. C-reactive protein as it is to get that cholesterol panel, the basic or the advanced.

And a few studies actually say it's even more important to measure it. And then if it's elevated, it's taken the last 10 to 20 years to answer the question.

If you find out you have inflammation and you can figure out how to lower it with an anti-inflammatory diet like yours, Nutritarian Diet drops some weight, get in the gym, manage your sleep, you can get your C-reactive protein down, you actually lower your chance of strokes and heart attacks and bypass and stents and dying.

So this is a very important number nowadays. Now, if you're in an advanced clinic, there's actually four or five other inflammation tests. But again, I want to just hit a quick little note of importance here.

At least get one, the high sensitivity C-reactive protein, the others are called MPO and Lp-PLA2 and oxidized LDL and TMAO. So there are other inflammation tests.

But ask your doctor, they will be able to order you and hs-CRP or audit yourself online. Sounds good. And then you have, you know, other types of risk that people have, like their insulin resistant to gaining weight or their poor diet or their homocysteine might be a little bit less.

I think the insulin resistance we might have talked about just maybe touched on that. But go into more detail on homocysteine for sure. For sure. And what we're talking about, if people come into my office where we have a console, they show them a picture that I actually took out of a medical journal maybe 12 years ago that shows an artery full of plaque and there's daggers all through the artery.

And actually there's about 17 daggers and I've added about ten additional ones. So your is thinking about smoking high cholesterol, high blood pressure, diabetes and your family history.

These daggers add about 20 more causes of atherosclerosis. It gets a little complex, but don't get frustrated. This is very well known stuff, almost 16 is one of the daggers in this picture I have even from 12 to 15 years ago.

It's an amino acid that the body makes in a cycle. Cycle has a fancy word called the methylation cycle. And if your diet's off particularly too much meat, if your vitamins are off, particularly you're missing B12 and folate, something you don't perform and teach people to pay attention to.

Folate comes from leafy green foliage, so plant based eaters should be getting plenty of folate, but B12 can be an issue.

Homocysteine, B12, folate, and methylation

So if you're low in B12, low in folate, and the third input is your genetics, you could inherit a problem metabolizing homocysteine from one or both parents, and that's a very easily testable blood test called your MPH of our blood status.

But your homocysteine may be very high and homocysteine damages that endothelium that inner lining of arteries. Homocysteine is associated with strokes and heart attacks, erectile dysfunction and may be shortened lifespan.

There's actually thousands of articles about homocysteine and the most important thing to bring up about it, it's an easy blood test. You go to your doctor and say, or you order yourself online, which is not widely available.

I want to know my homocysteine and I care if it's seven or 27. 27 would be way outside. The norm is it responds very well to eliminating the red meat in your diet.

You can't alter your genetics, but taking adequate B12 and folate. And then it comes down. And then if you retest the arteries, they look healthier. So homocysteine may be isn't as important as whether you smoke or not or whether your cholesterol is 300 versus 150.

But it's pretty high up on the list and it's treatable modifiable. So we should be teaching more about how to identify and lower your homocysteine level.

Right? So usually a homocysteine above 15 is more of a concern, correct? I agree. I don't get too excited around 11, 12, 13, even though maybe the ideal ideal one is under eight in your blood work.

But boy, when I see 27 or 32, maybe 5 to 10% of the population, we can fix that. And that's always what we're dealing with. We can fix it with diet, but we're probably going to need a b-complex vitamin.

So the so what I usually do, I if the person simvastatin is elevated, they're eating healthfully and they're presumably eating it a full in their diet, then I'm going to evaluate the beach well maybe even May to see that the methyl on a gas and see if the person needs more B12 and then maybe at that point check for the the the MTF that's H or the M, T H or a deficiency or a genetic defect where they would need to need to take some type of methyl folate, not to just take folic acid or just a but actually take method folic because we're we're showing and genetically they need that.

So to get their homocysteine down. But in my in my history, I've had people who are like, you know, fanatical vegans who didn't believe in supplements, who didn't take B12, right?

Like a C, C fry who passed away of B12 deficiency. And I saw his blood test, his B12 were total and in the hospital were were almost nonexistent, but his homocysteine was super high.

And he's on a vegan diet. A vegan Russell diet. Guys have heart disease with no B12, with taking no B12. I had two people actually came to my practice with advanced heart disease on vegan diets with severe B12 deficiency that still refused to take B12.

For some reason. They were so fanatical that. But in any case, certainly it's an important point in the homocysteine can be a sign of B12 deficiency, as can an elevated homocysteine, as can an elevated may.

May is methyl monica acid, which also rises in B12 deficiency. Right? Right. Well, I think you and I practice very similarly, and that's exactly how I approach it.

You know? Good. All right. Well. Oh, and what about you? To evaluate insulin resistance. So you just assume the person is overweight, you talk about it with them.

Yeah. And, you know, insulin resistance comes up all the time when people are watching Dubois and listening to health experts. It is measurable. If you get a fasting insulin and it's very high, you probably are insulin resistant.

You might be pre-diabetic, you might be a Type two diabetic, and you know you're not going to be a type one diabetic because that one's don't make insulin to any measurable amount unless they're injecting.

There are, for example, quest lab, a big lab in this country does something called the insulin resistance score. You got to be fasting. You want to be under 33 out of 100 and some of the other labs do something called the Homa.

Homa, it's a calculated number. So, yes, you can measure insulin resistance in clinical practice in an inexpensive way and you want to correct it, you want to improve it.

And the whole food plant based diets and weight control and exercise are consistently excellent at improving

insulin resistance. So that little molecule brings your sugar down quickly and efficiently and doesn't have to overwork and burn your pancreas out.

Well, isn't insulin resistance like what would be what a better but just a body fat number or body fat percent with the body part percent pretty much accurately determine insulin resistance as well.

Insulin resistance and metabolic risk

But only a person who is low as the body fat. It's certainly correlated. There's no doubt if we grabbed 100 people with a, you know, a waistline over 40 inches and a hundred people with obese sign up 32 inches of middle aged man, we're going to find much more insulin resistance.

And that's why some people do a waist hip ratio or just talk about pant size or, you know, talk about your BMI or get a DEXA scan and actually measure how much visceral fat you have.

They're all going to correlate with insulin resistance. There might be a few exceptions of some. People on a constant version of symptoms, right? High blood pressure, lipids, insulin resistance, overweight, eating poorly.

They will just call those risks are pretty much wrapped onto each other, right? And Dr. Khan, let's move on a little bit further here, like you mentioned it briefly, but I want you to give a much more thorough explanation of TMJ.

Oh, and how's the what how strong a risk is that for heart disease and how do people control their TMJ? Oh yeah. We know doctors love abbreviations and names and TMAO is another one to write down trimethylamine N-oxide.

Nobody's going to be tested on that. Something that was rarely ever talked about before. 2011, when a research group at the Cleveland Clinic, led by a cardiologist, identified that they had developed a blood test and they could measure this.

It's called a metabolite part of your metabolism in the blood. And people with clogged arteries had higher levels and people would clean arteries had lower levels of the Cleveland Clinic.

And then they went to the basic science lab and found out some fascinating findings that we make a lot of TMAO when we eat a lot of egg yolk, there's something in egg yolk called choline and we all need a little bit, but we don't need too much that chicken egg yolk.

And when you eat a lot of red meat, there's something called carnitine, which is pretty much exclusive, not completely, but pretty much the red meat. And you make a lot of TMAO and then if you change your diet, it comes down.

Or if you eat vegan, it isn't there to any high level at all. And they show that TMAO isn't just a blood marker, but actually seems to cause hardening of the arteries, seems cause inflammation, seems to damage kidneys and cause fibrosis.

So they're from that first paper are now thousands of research papers that TMAO predicts and probably causes disease. And I think it was around 2015, maybe 2016, Quest Lab introduced the ability for any clinician to order a TMAO level on a patient.

TMAO, diet, and cardiovascular risk

I've ordered thousands and thousands and thousands of them. And, you know, you pretty much confirm what I just said. You see a meat eater or an egg eater.

The other thing is some people take supplements with a high dose of choline and a high dose of l-carnitine. And you can see in all those settings, super high double levels is really amazing physiology because you just bring them back in three or four weeks and they change your diet or they reduced or eliminated their supplements.

But work with your health care provider when you're doing these things and the level comes down very quick, it's very quick physiology. So there is. Was a stand for, again, the TMAO.

What does it stand for? Trimethylamine N-oxide I mean it's really cool. You eat and then science, you eat an egg yolk full of choline, eat a steak full of l-carnitine.

It gets in your intestines and on the border of your wall, there's an enzyme and there's bacteria involved. And we believe the bacterial mix of a vegan is different than the bacterial mix of your average American meat eater.

And we just don't have that bacteria to any degree that a meat eater does anyways. It gets converted the choline and the l-carnitine into a little molecule, it gets into the bloodstream called TMA, then it gets the liver and it shows up.

Finally in the bloodstream is TMAO Trimethylamine N-oxide. So of course in the modern medical world, the Cleveland Clinic is working on things that are patentable that could help.

This could be a drug and such there's done out to this date. The Mediterranean diet has been shown to bring it down. And better than that, you know, is going to be a whole food plant based diet, will really bring it down and check your supplements even monster energy drink a lot of people pull in the gas station young people, but not exclusively.

You know, you'll see the first ingredient in a monster energy drink and some of the others is l-carnitine. And it could be shooting your TMAO up. It helps explain why some people even eating animal products, even if they're watching the fat intake or saturated fat, they're eating low fat animal products, just the protein component, the choline and the carnitine could still drive TMAO high and still, obviously, you're producing heart disease irrespective of your cholesterol level.

You know, even if your cholesterol is not bad, you can still produce significant heart disease from the meat intake of these animal proteins, right? Yeah.

We're all about trying to give people natural approaches to their heart disease, identifying it and reversing it. And people don't understand that. Wow, there's that diet heart connection and it's testable.

And TMAO is just one part of what you test for, like the homocysteine and the insulin resistance. But again, it's important because it's easily modifiable.

Closing remarks

We can fix it. We can make it better either all the way to normal less than 6.3, I think, or nearly all the way to normal, and might just be a small dietary or supplement transition.

All right, thank you, Dr. Kahn, and thank all of you for joining us. We hope you benefit from this in-depth discussion and stay tuned for obviously more informative and important information that's applicable to your life that can protect your future health.

So look forward to seeing you in the next episode.