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[00:00:06] Before we get started with today's episode, I would like to quickly read you our podcast disclaimer.

[00:00:13] This podcast is for educational purposes only, and it is not a substitute for professional care by a doctor or other qualified medical professional. You should always speak with your physician or other healthcare professionals before doing any fasting, changing your diet in any way, taking or adjusting any medications or supplements, or adopting any treatment plan for a health problem.

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[00:01:13] All right. And now we'll get started with today's episode. Hi, everyone. It's Megan Ramos here with another Bitesize episode of The Fasting Method podcast. Today, I want to discuss measuring insulin resistance. This is one of the questions we're asked the most - "How do we measure, how do we quantify our insulin resistance? How do we know how severe it is or how much better is it getting?" And it's a really complicated answer, unfortunately. I wish I had an easy answer for you.

[00:01:48] We spend a tremendous amount of time in our coaching program trying to get all of the tests required and spend time educating people on their stance and it can be very difficult to get these tests. You can be your best healthcare advocate but, in certain jurisdictions, you're going to run into a bit of a backlash trying to get these tests.

[00:02:12] Now, what tests are involved in assessing insulin resistance? So when we're working with someone, we'll just try to collect as many pieces of the puzzle as possible. But I'm telling you, it is a puzzle. We've got to look at multiple factors here. So this is what we try to collect from our coaching clients to help them understand.

[00:02:35] Number one, body composition analysis. We want to know your body fat percentage, your lean mass percentage, your risk or status with osteoporosis, and bone mass density in general. That's important. You can do that through a DEXA body composition scan. If you don't have one close to you, you can use an at-home device. I'm a big proponent of the Omron body composition scale. It ranges from $70 to $80 on Amazon. I've had two now. One broke in my move from Canada to the United States, but it was really phenomenal - right on-mark with my DEXA scans too. Tons of great literature to support its accuracy as well. So that's something, a device that might be worthwhile purchasing throughout your journey.

[00:03:32] Now, when it comes to lab tests, we do want to know what your hemoglobin A1C is. As you've heard me talk on this podcast and over at the Fasting Method many times, we can't use A1C as a be-all and end-all marker. For those of you who are new to this language, A1C is that sort of three-month average of how saturated your red blood cells are with glucose. You're formally diagnosed with borderline diabetes when it hits 6% and you're formally diagnosed with type two diabetes once it exceeds 6.4%. But there's sort of this gray area that is disagreed upon in the different branches of the medicine when you're in that sort of 5 to 6% range. Most traditional healthcare providers will say, "Okay,

you are in the clear so long as you're under 6%." Some warn you of pre-diabetes between 5.6 and 6%. Some 5.8 and 6%. In integrative medicine (not Western medicine, but integrative medicine), we really try to target an A1C between 4.5 and 5.2%, which is quite substantially lower than Western medicine. And we have found that sometimes when there's an A1C of 5.5 or 5.6, there's still a lot of diabetic damage being done. We'd actually see this in kidney patients who had kidney issues for what appeared to be absolutely unknown reasons, and they would go for biopsies and have diabetic kidney damage. That's the cause of their kidney function decline. But their A1C was 5.6 or 5.5. So we do like to target the functional medicine range when we're working with individuals in our program. It's very important.

[00:05:27] Your morning fasting blood glucose levels. We do like them under 90, everybody - 90 milligrams per deciliter. That's equivalent to 5 millimoles per liter for our friends outside of the United States.

[00:05:42] And when it comes to fasting insulin, we like a fasting insulin level that is below 5. 3 is actually considered optimal. If you're outside the United States, we like to get you below 40 picomoles per liter and optimally around 20 picomoles per liter. You'll notice when you look at lab tests and you see this fasting insulin that there is a huge reference range for it. It's so large, it's absolutely mind boggling and individuals can be very, very insulin resistant and extremely diabetic within that range because the window is so large. So it's not a range that in functional medicine we really agree with and we target.

[00:06:29] Other markers that we like to look at are some inflammatory markers. High sensitivity c-reactive protein. It's often written as hs-crp on your test results. We like to get that under 1.

[00:06:45] We like to look at homocysteine levels too. We don't like homocysteine being high-normal. It's a little bit too much inflammation. So we like them to be in the mid or low end of that normal reference range.

[00:06:59] Then it comes to some of the cholesterol tests. This is a finicky area. Tests that we've really advised people to try to source are ApoB and lipoprotein (a). These tests are commonly not checked outside of functional or integrative medicine or naturopathic medicine. So it's important to ask and they can be done at all of your regular labs. If you're in Canada - Dynacare, LifeLabs. If you're in the United States - Quest, LabCorp. They are tests and they are included in the Boston or Cleveland HeartLabs as well. So they're important ones to get to understand your risk of insulin resistance and your cardiovascular risk.

[00:07:45] Many times, I'm often given the standard lipid panel and asked to make sense of it for somebody. And truth be told, I can't make that much sense of it. It doesn't give me a full picture. It only gives me the ability to make inferences, which is really not ideal to do in medicine. So all I really get from the traditional lipid panel is your triglycerides, which are really important to know. We want to target triglycerides that are around 80 (or below 1 for our friends outside the United States) and we do want to have an HDL C that is in the normal range, but that LDL C and total cholesterol doesn't really tell us a whole lot about your risk. You could have a lot of large, fluffy LDLs and be in fantastically good health with low risk. You could have a lot of small, dense LDLs and be at extremely high risk. We don't know. So it's important for you to get a full lipo profile. So it's technically called a LipoProfile. It's more technically called an NMR LipoProfile. Different labs have different names for it. In general, asking for Boston or Cleveland HeartLabs in the United States is

one way to guarantee that you get these tests. In the state of California, at Quest, you can get a Cardiac IQ. That's one way to guarantee this. But in different states at Quest, it's called different things so using the technical name or researching the technical name so you can get LDL particle number and size is really important. Now, if you've got a lot of small, dense ones, you have insulin resistance. If you have a lot of large, fluffy ones, your risk of insulin resistance is much lower.

[00:09:50] Now, there's one marker on these tests that sometimes leads to confusion. It's called an insulin resistance score. The insulin resistance score is at the bottom of Boston and Cleveland HeartLabs or any MMR LipoProfile, but it does not really correlate well with whether or not you have insulin resistance. So I always tell people it's nice if it's in the normal reference range, but it's not a be-all and end-all marker. There's a lot that you need to look at and the NMR LipoProfile can actually show a lot of insulin resistance and then it can show a very low insulin resistance score. So the algorithm used to calculate it is not quite as fine tuned as I would like when working with individuals or even for my own health care.

[00:10:43] Now, something that I see a lot on social media these days is the HOMA IR. This actually has become such a talked about discussion on social media that it filtered into our Fasting Method Community and coaching calls and we had to do a formal session addressing it. HOMA IR is not a really good picture of how insulin resistant you are. It's a calculation that is determined by comparing your fasting glucose and your fasting insulin level. The glucose and insulin must be done at the same time, but these are two highly variable things. You could have a really stressful morning and your insulin levels could double. You could have a really poor night of sleep and both your glucose and insulin could go up. These things can make you look insulin resistant. And sometimes you could get great sleep and not have a lot of stress and these numbers look a little bit lower than they're meant to be. You could be really on-point making sure you're walking after every meal for one week and you could have this phenomenal HOMA IR score of less than one, which means no insulin resistance, and then you could have a rainy week where you can't be as active after your meals and your levels are high. It's frustrating and it can look like you have this insulin resistance when you calculate your HOMA IR. Dr. Fung and I used to keep track of this in Toronto when we first started our clinic and the numbers were just so all over the place. For individuals who were able to get some consistently low numbers, we still knew they had quite a lot of insulin resistance, so the HOMA IR wasn't the best.

[00:12:29] A true measurement of insulin resistance would be to do the oral glucose tolerance test, but assess your insulin response, not just your glucose response. Every now and then we get a handful of clients who are able to get this test ordered. They will order a glucose tolerance test, but they will check the insulin at every single interval. And what's really wild sometimes is that they have a totally normal glucose response, but they have an obscenely abnormal insulin response. So many of our clients feel validated in their symptoms because their doctors have told them, "No, you do not have diabetes, you do not have insulin resistance. This is all in your head. You're giving yourself these conditions." I've seen this heartbreaking scenario so many times, but when the clients are able to advocate and get these tests and see that their insulin responses are just so way off, even though their glucose response is fine, well, this, you know, really makes them feel very empowered. And it also gives us a really good marker to go on since we can't always, necessarily, rely on some of the other markers in these cases. Just because your glucose response curve is normal doesn't mean your insulin response curve is normal. So that's often a misconception. We think if our glucose is down, our insulin must be down. And of course if we're eating in a way where we're not spiking our glucose, we're not adding a

tremendous amount and more insulin to our system. But where is our insulin really starting from? So we could have a glucose of like 84 or a glucose of 4.5, 4.6, and we could have a very abnormal fasting insulin or circulating insulin at that given moment as well. So the insulin response tests or insulin tolerance test is very interesting to get if you can get one and it's probably the gold standard for assessing your severity of risk of insulin resistance.

[00:14:37] All right, everyone, thank you so much for joining us. If you're in the Fasting Method Community, we did a full webinar on this, so you can go to the 'Past Webinar' section, you can go back and rewatch it. I answer questions live, too, at the end of it, and there's a whole presentation there that you can download with the lists of tests to take to your healthcare team and to try to get those tests as well. So all the information is there in the Fasting Method Community under 'Past Webinars'. If you can't find it, just shoot as the message in the forum or at Support af thefastingmethod.com. Bye for now, everyone.