Your Longevity Dashboard: The Numbers Worth Tracking Transcript

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Introduction to Longevity and Measurement

Welcome everyone again to this new episode, part of the Longevity Summit. I hope you're as excited as I am. Longevity is the new big thing. Longevity is what a health care system should aim for us living healthy and long.

Not just longevity, but the concept of health spending healthy and long. And how do we know if we're healthy or not? This is why this specific episode I have the pleasure to welcome Doctor D'Agostino Who really specializes in measurement as a way to manage your health and longevity.

Doctor Dom, I'm going to call you. Dom is a professor at GSF College of Medicine and super well known in the field of measurement and how to use that to improve actions and in supporting people with onboarding on the longevity lifestyle.

Welcome, doctor. D'Agostino. Great to be here. Great. Yeah, I want to hit it right away. I know you're working on testing and longevity. What is the most interesting thing at the moment that you're working on?

Yeah. Well, I mean, over the years we've been moving the preclinical animal model research to like, human clinical trials. So we have an R 21 grant, you know, doing a metabolic intervention for cancer patients and metabolic interventions that improve metabolic profiles like fasting, mimicking diets and, you know, restricted ketogenic diets.

They can augment the standard of care for cancer. So we're working on that. And also working on an R one grant that is mostly proposing to look at, you know, it's evaluating and testing different products that are on the market, different supplements, metabolic supplements, and for rigor and reproducibility in the work that has already been done. So.

So we have that in the pipeline. And I'm working with Choose Health on a white paper. And that white paper really comes from testing a wide variety of biomarkers repeatedly within with a very innovative at home testing kit.

The white paper has the data and it has over 200 000 tests and across the full population. So we kind of discovered that the values drift toward optimal ranges as people test more often.

So, you know, a single, you know, test can only tell you so much. But among the people whose tests were like out of range in the beginning, when they started testing more often that the benefits were 4 to 5 times, you know, more beneficial shifts in biomarkers.

And that's an important, you know, discovery that we're excited to get out there as we're working on it. And so the measurement itself appears to be part of the intervention.

So when we talked about that before jumping on, and that's an important sort of take home message here, is that the measurement really important itself.

You know, it's a concept that applies everywhere, right. I remember from Peter Ducker, for those who don't know, Peter is like the grandfather of the, you know, business education, especially in grad school.

And one of his famous saying is if you don't measure, he cannot manage. And it makes sense. But the concept you're advancing is like it's not measuring once.

Research on Metabolic Interventions and Biomarker Tracking

It's like the more you measure it seems, the more people kind of get that repository reminder feedback and they're

on board on a, you know, what, I'll get to do better or you know what, I'm doing great.

That's a positive feedback. Let me continue doing what I've been doing. You know, I'm interested in longevity and also in weight management. Part of that, and I remember a couple of experts in weight management, they always said the only proven long term intervention to lose weight sustainably and in a healthy way is just having a weight scale at home and measuring you weight every morning.

So that's kind of the extreme case. We're not going to measure your blood markers every morning. But just to show, I think the concept that you're trying to advance to us today is it's not just a baseline.

And then wait until whatever you're doing, or wait until a year and see what happens. It seems there's a correlation and a positive feedback loop between the more you measure and the better you actually achieve your goals.

Exactly. Yeah. I mean, Drucker's quote, what's gets measured, gets managed, and more so longitudinally like over time. So it becomes really important to do that and scale.

The scale of analogy is really good. And that's a great example of it. You know, kind of the low tech way for people out there. So what do we measure?

I bet everyone listening here is like, okay, I'm interested in longevity is why I'm in this, you know, summit. But what would I measure for longevity?

What do you recommend today to consumers, to patients, to longevity aficionados? What should they measure and track as they get older? Yeah, that's a good question.

And I think it could be personalized for each individual. But we kind of think about it in like four domains. So like glucose regulation is one, not just fasting, you know, morning glucose but glucose management in the body.

So that would be insulin. So you're fasting insulin is really important because insulin can rise over time without a rise in glucose. Right. So we could predict type two diabetes years before it happens by just looking looking at an insulin levels hemoglobin A1.

See the insulin. So that would be the glucose regulation would be the first one. And then lipoproteins really important especially depending upon your genetics and also other biomarkers that we can talk about.

But something like ApoE B is really important to know it. And we have drugs that can reduce it. Lifestyle things can reduce it. Triglycerides obviously really important.

So glucose regulation lipoprotein and then the liver to the liver. You know we think about it as kind of like a detoxifying organ. But the liver is really like the master metabolic regulator.

So like the blood in your bloodstream right now is basically titrated and finely tuned by the liver. And the liver does a lot of the heavy lifting when it comes to sort of metabolic regulation.

And so it's really important to keep it healthy. And there's biomarkers. We have AST alt GGT not utilize as often as it should be. It should be included.

So glucose lipoprotein liver and then inflammation. Inflammation is really important to measure. Something easy to measure is high sensitivity C reactive protein is actually a stronger predictor of cardiovascular disease events then LDL.

And we have interventions out there. I mean, we're talking about, you know, a fasting mimicking diets, probably the most powerful intervention that I know of that can kind of suppress your, you know, systemic inflammation better than anything.

So and then there's and that's the for ones. But there's also like deficiencies like if you're deficient in vitamin D or vitamin B and you know, drugs on the market like GLP ones and things like that, because you're not eating as much food you could be deficient in, you know, vitamin D, vitamin B12, things like that.

So, so they should be measured too. But it's really glucose lipoprotein levels. Liver and inflammation are areas that you want to track. Fantastic. And obviously we ought to be big believers as you are.

You know, I didn't know you were at an FMD fasting when we can buy that as well. First time we meet and we talk for as a disclaimer. So I appreciate that a lot.

And of course we love the FMD. Again. The first thing we we can die as a first healthy alternative. But a lot of people are going from are doing the GLP right.

There are three acronyms the FMD and the LP. Yeah. So the Zen pigs and they will go with etc.. What what kind of testing you do for those as well for GLP ones yeah I do.

It's really important because GLP ones produce a very rapid weight loss. They are highly efficacious drugs. The you know liraglutide was actually worked on in the 1990s by our course director, Doctor Barbara Hansen back in the 1990s.

So these drugs have been around for quite some time originally for type two diabetes. And they found out the weight loss effects. But because of, you know, the weight loss could be rapid.

And then the context of rapid weight loss, you can have lean body mass loss.

What to Measure for Longevity

So I do think in the context of using a GLP one, it's important to do like for example, a Dexa scan or you know the equivalent is the in body. I like the Dexa because it does the bone, you know, bone density, resting metabolic rate.

You want to make sure that you're losing weight in a way that's not suppressing your resting metabolic rate, metabolic cart. But from a blood marker perspective, you want to look at liver enzymes are going to be important ApoE B, vitamin D and vitamin B12.

Because, you know, these drugs drop total nutrient intake. And if you drop total intake. You're inadvertently dropping the intake of potentially vital nutrients.

And these things we don't fully know, they could be impacting the absorption utilization of some of the things, these markers that we could be tracking.

But yeah, off the top of my head, I think those things need to be kind of monitored and measured. And when you lose weight very rapidly, a lot of unexpected things can show up in the blood work.

So and we've seen that. So it's important to, you know, monitor just a comprehensive metabolic panel CBC. But also some of those other biomarkers I mentioned you mentioned vitamin D, which is, you know, very essential for longevity and healthy aging.

And and a lot of people, especially when they go, I mean, when they see their doctor, they go on medication, they do some testing. But a lot of people on supplements today, and they don't measure why they take the daily, you know, multi supplements or a couple other supplements they heard about or they got recommended to take, but they don't measure. And this is very important.

You know supplements also send big signals to the body. And we have to track and measure I know you advise choose health right which is an at home testing.

But it's not about choose health and about panels that people can be doing, whether they're, you know, taking their supplements, whether they are uncertain medications, whether they want to onboard the longevity lifestyle or even on GLP or on the fasting mimicking diet.

Like how this choose health approach this. And I know they have a special technology for at home measurement called task. So that I was familiar with and I supported, I think 12, 13 years ago.

It was a surprise to see you there and a positive one. But can you explain a little bit about it? Talk about choose health and explain like the offerings there?

Sure. Yeah, I'm an advisor for them from the perspective of analyzing data that they've been collecting. And I think, you know, they're one of the few companies that actually has, you know, they're very interested in publishing the results and digging into the results so they understand and can even, you know, perhaps iterate kind of what they're doing.

But but the constraint, you know, that in practice is really has never been sort of what to measure so much as the friction involved in, in measuring and having the patient actually go to and get their blood drawn from a phlebotomist so that the the Tasso device and the ease of at home testing with an idealized panel.

And they have a lot of different panels, you know, a long panel for, you know, if you're on hormone optimization, you know, a specialized panel for that.

And you can adjust and titrate or adjust the panels and personalize them. And the importance is that, you know, the removing the friction of having to go to a center to get blood draw that you can test, you know, get the initial test on the baseline and retest.

It's that retesting that's actually really important because that, you know, over time, those trends that you see when you do an intervention or even if you're not doing an intervention of everything stable and you get tested over time, you can start to see trends and then, you know, choose an intervention from there.

But if we're talking about fasting, mimicking diet or a drug therapy or supplement therapy, it's the ability to retest. And that retesting is going to differ depending upon the intervention.

Something like looking at triglyceride to HDL ratio that can move in like four weeks. But if you're supplementing vitamin D, you know that's going to take about 3 to 4 months to really show up, you know, measurably and significantly on a blood test.

So so the measured outcome is going to be really important. As you do more retesting, you want to look at those longitudinal trends, you know under different and also use the same assay.

Sometimes people jump from lab to lab and they're just trying to get a better price or whatever, and the price is going to choose how they're very competitive.

But I'd also say that, you know, we put a lot of weight into randomized controlled trials, and they're absolutely needed, but a very well designed, well thought out and of one, if you will, the object measuring their own biomarkers with enough data is probably more informative for that person than a randomized controlled trial.

So for that individual like over time. So and the dried blood spot cars they use that and the Tasso device and you know these it's validated. The assay is validated across the the sea certified labs.

And it got the Cap accredited processing and also a physician review of the panels.

Monitoring GLP-1 Therapy and Nutrient Status

So these are all like incorporated and part of the Choose Health program. So the ease of testing, the biomarkers

you can choose from personalizing it and the ease of retesting I think are all major.

And I think choose health. There's not too quite a phlebotomist. Why they send you a kid. Yeah. And then this the device called it has a device. Right.

They can help you just you're taking the sample at home, and there's no need for any, anyone to visit or any human interaction with that. Right. Exactly.

Yeah. It's like, you know, next level testing. And I think, you know, they're early into this market and probably things will go that way. And I just think it just makes it so much more appealing for individuals to be able to test on their time frame and to have that ease, and also just the ability to the level of testing that's offered, and also the oversight and the validation that they have on all their testing measurements are kind of unparalleled.

So you have a lot of advantage there. And and also the data that the data itself and the data platform, the analytics of what they can give you insight into what I wanted to ask you about.

So you're sending back the results plus the interpretation of the results. Yeah, to some extent. I mean, there's a team of physicians that look over it and then, you know, using various processes, it can personalize it to the patient and then they can follow up.

And ideally you want to, you know, continue with the same testing protocol that you did at baseline and then and adjust it depending upon what other intervention you're doing.

And that could be a pharma intervention, you know, hormone, a supplement, a diet, exercise. And these things are all kind of taken into account, you know, when you're working with them and there's somebody need the prescription to like a doctor prescription intervention to, to access the testing or they just can order it online.

Yeah. I think, you know, it's part of the process that when you kind of register and get online, that process with the doctor, getting that prescription is sort of handled and expedited very quickly.

So that's another benefit of doing it. So it's just as easy as, you know, signing up clicking on what you want. And then you get the kit and then you measure and and it's that easy.

And so you talked about that cycle of testing acting and then retesting. And when should we retest. Can you talk a little bit about, you know, the different panels or when a person should reorder their test again.

Yeah, that's a really important consideration. I think it could vary depending upon the test that you're doing and the intervention that you're doing.

If you are sort of the view of the cheap, your health goals, and you just want to maintain, you know, just like for longevity and you feel like you're kind of optimized, you know, maybe as little as two times a year, maybe appropriate, you know, if you're not doing an intervention.

But if you are, you know, doing any kind of change and that could be a dietary change, you know, a lifestyle change, a supplement, a drug, it really would pay to do at least every three months.

So say four times per year. 3 to 4 times a year is going to be really important to capture sort of the granularity in the data longitudinally over time, because things could change if you space it out too far.

But ideally in an ideal world, and it makes it easy with something like choose health, to do it like four times a year would be a good starting point.

And that's what I do personally. Four times a year I think is good. Okay, great. This is what I wanted to channel to is personally, what do you test on you now and what do you drive for your own health and longevity?

Yeah, I think, you know, every person is different and I'm in my 50s now, so I and when I got maybe a 45 or towards the 50 range, I started testing from once a year, once or twice a year to 3 or 4 times a year.

Now is pretty much I've settled in on that.

Choose Health, At-Home Testing, and Retesting

And I do, you know, your standard comprehensive metabolic panel, CDC, CMP and I also think it's really important to do the cardiometabolic biomarkers that are not part of standard testing.

So that would be fasting insulin. That would be like triglycerides. That would be HSC hemoglobin A1. See these I also wear a continuous glucose monitor and a continuous ketone monitor.

And it also tests various, you know, multi analyte sensing technologies on that. So things that are kind of in the pipeline that come out later like real time metabolomics.

So you know we do a lot of these tests and and having that data is also interesting to kind of compare to the blood work data. But I think, you know, as someone gets older they want to track their hormone profile, whether that be testosterone, thyroid, estrogen hormone panel.

And, you know, as you get older to males, prostate specific antigen, you know, are things that you want to kind of measure over time. But it's not you know, I think the message here is that testing is important, you know, comprehensive metabolic panel, CBC, but also to add the cardiometabolic biomarkers that I mentioned that correlate with longevity.

So we have very good peer reviewed data over time that unambiguously show that these cardiometabolic biomarkers will predict, you know, your longevity.

And on top of that, I mean, obviously things like blood pressure and to get a Dexa scan and to know your body composition every year I do a Dexa and I try to I try to not lose lean body mass, and I try to beat my Dexa from the previous year.

It's like a little kind of game that I play. So I plan out a week of, you know, a year in advance for that next Dexa scan and try to and I think that's important, especially as we age, we lose a lot of muscle and bone density, and we need to do things like that.

Going to ask a theoretical but but fun question if you can measure only three markers that you want to know about yourself, what will be the three that that you will pick to measure only three three markers?

Yeah, only be personalized to me. So I would do SCRP. I knew that would be the number one. Yeah, yeah. And a lot of people don't even like consider that one HSC or P would be one of probably two people.

Why HSC or an HS for those listening to us is the high sensitive CR and inflammatory marker. And just to help people understand how important that is, right.

Inflammation in the body is like the the heat of the engine of the car. Right. The more the higher. And even there's this you don't need to have a disease even, you know, there's the concept of inflammation, right.

And it's a process. Part of it is a response to health conditions. But part of it is really how the body, how fast your aging. And, and it's important to control it because you know, it, it goes a little bit linear.

But then there's a point in time when you have enough senescent cells and you have your more you have a lot of tired, tired immunity, but a lot of pro-inflammatory old cells.

This is when actually it starts, you know, aging the body even a faster, faster pace. It's also behind a lot of the

acute, life threatening events. Right.

The heart attacks happen when you're you have young players in the coronary and there's high inflammatory setting. And this is how the plaque, you know, breaks and you get a, you know, a cloth and you get a heart attack.

So it's a such an important marker. And like it, it's like on the dashboard of a car, you know, you have the speed and you have always that heat that he begins.

They somehow they define that you can learn 60 things about your car, but that important temperature of the car was so important. And this is how Jesse is presented.

It's very important to first measure it to understand how fast or what's the heat of our engine in number two, how to take action. You know, measure, act and then retest.

And such an important, I think, metric for again, acute events for short term, you know, issues but also long term aging. Absolutely I agree with everything.

And I think, you know, even maybe the root word of inflammation is something like fire, right. Like fire. And so it's yeah. And that's I think it's a good barometer, litmus test to basically tell you like what's happening in the body.

You know, when I see chronically elevated crp like in the ten, you know, 12 range of people, I get concerned. And I do see that in patients that, for example, have cancer like different disease states.

That's and I'll tell you just from working with Mavic Cancer Center, that's why they're interested in the fasting mimicking diet.

Personal Testing Routine and Key Biomarkers

They basically unambiguously they say the lower the HSC aap that they can bring that down the patient, the much more responsive they'll be to immune based therapies like checkpoint inhibitors or Car-T therapies like, you know, if they're HSC or is really elevated, they tend to be kind of refractory to or not very the therapies don't work very well.

So so I think, you know, giving that that can further augment, you know, therapies in that way. But here I think I used to kind of not think much of it.

It's a, you know, systemic inflammation could be triggered by this or that, and it's very nonspecific. But the more I, the more you dig into the data.

You realize, even for things like mental health, like anxiety, depression, you know, gut permeability, that would be you improve your gut that HSC, AAP is going to come down.

And if you have systemic inflammation that leads to neuroinflammation, and that's going to affect your mood and your mental state, and also probably amyloid and platinum development over time.

So we and now I think about it in that way. Yeah. Yours ago I did not. But now I do. It's a systemic indication right. And we can spend hours on it. But something here very important because you know I, I come from medicine as well in MDP, PhD.

And what we learned is, you know, medicine has to tell you are you healthy or sick. And it's always a cut off, right? If your CRP is below this, you're fine.

If it's above and it's just a one one. If your blood fasting blood sugar is above 140, you know you have a disease. If it's 139, you're not sick yet. But watch out.

You know I'll see you in six months, right? That's not the practice of new medicine and longevity. So looking. I'm saying this because an help level, you have to take it in a gradual first.

How is it evolving. And this is the importance of retesting. And then every level of P means something. There's no there's no cutoff where you're at risk or you're high and and then you're lower.

And we need it always in relevance to the age of the person. And the other kind of, you know, symptoms that they're presenting with. But very important. So that's number one.

What are the two other things you would measure yourself if you want to just pick three for your health and longevity? Yeah I think insulin your fast your insulin level is really an important predictor.

So insulin you know as we age and we have chronic inflammation that's going to make you more insulin resistant. But it gives you a window into your metabolic physiology your fasting insulin.

And and when that starts to creep up over time, you know, that's something to get concerned about. And insulin resistance is a really, really big problem right now.

Yeah. Another super important you know, I'm going to simplify what you said a little bit to the audience. You know, today in medicine we measure blood sugar and we tell you if you're diabetic or pre-diabetic.

But the process to get there, this is where prevention and longevity medicine comes in is you kind of, you know, build some fat and you increase insulin resistance gradually.

And then blood sugar starts increasing. And then but insulin resistance goes way beyond that. It's linked to aging. It's linked to cardiovascular disease.

It's linked to ALS, Hymers. So again it's a process of accelerated aging insulin resistance IGF spikes HSC. These are three symptoms that hey you're going fast towards your end.

You get a little bit. Take your foot off the off the gas and slow down on calorie intake. And this is what's leading to the insulin resistance on high inflammatory status etc..

So thank you for mentioning that. What would be the third one? Yeah, the third one is kind of a tough one. I was going to say triglycerides, but maybe because that will improve with the other ones.

But I think maybe ApoE b could be a b, especially if you have I mean we have like cardiovascular disease in the family and things like that. So if you are have a genetic predisposition for cardiovascular disease, it's also a modifiable, you know, whether it be with diet, lifestyle or pharmacological agents.

We can move the needle on that and actually do people what is a B. Yeah oppo B is a big lipoprotein B and it's a component so that it gives you like the total amount of lipoproteins.

And it doesn't necessarily it doesn't reflect what it's carrying per se. It's just a total amount of protein. So you'll find a Bob and LDL and other lipoproteins.

But the total count of a Bob has is a better predictor of cardiovascular disease than LDL cholesterol. So ApoE b is really kind of like the number if you're measuring LDL would be more informative to measure apolipoprotein B, Apple B, and and that test is usually, you know, you can add that on in a most tests and choose has that.

So it's probably the best. You know maybe you can argue triglycerides could be. But most people that are healthy if you're already healthy, if you have insulin resistance and your Triggs are high, you might want to measure that.

But my triggers have always been really low.

Top Three Markers and Final Takeaways

But ApoE B has climbed up over time, and I've been able to reduce that with a drug, not a statin. But I use a Z. So as Z blocks the MPC one L1 receptor.

So I do hyper absorbed cholesterol. And I've been able to knock that down about 30 or 40% without taking like a statin. Not I mean statins have their place and everything, but the amide kind of works at the intestinal lining and a little bit maybe in the liver.

And it can block that cholesterol absorption which could lower, lower a bob. And that's something I found through genetic testing, but also that I monitor with tests like choose over time longitudinally and be able to titrate, you know, the dosage of that in my diet to improve that number.

And that's like, well, I this was a great, I think, very practical discussion for folks listening in here. And I want to appreciate your time today. Any final any conclusive words or anything you want to add?

I think we cover a lot of ground. Yeah. I just want to say, you know, I'm a fan of what you're doing. I'm a fan of, you know, fasting, mimicking diets, fan of Doctor Valter Longo body of work, which is incredible.

And I do think that, you know, my bias experience is that metabolic based therapies like, you know, these dietary therapies can move the needle more, more than drugs.

And I think that a lot of people need to be testing because there are ways to optimize, you know, nutrition therapies through measurement and testing.

And I think that becomes a priority to get that baseline and to do, you know, predetermined tests after that. So you can titrate and adjust as you go.

Fantastic. Doctor Dom, thank you very much. My pleasure. Thank you.