

Nicki: Welcome to The Healthy Rebellion Radio. This is an episode of Salty Talk, a deep dive into popular and relevant health and performance news pieces mixed with the occasional salty conversation with movers and shakers in the world of research, performance, health, and longevity. Healthy Rebellion Radio Salty Talk episodes are brought to you by Drink LMNT, the only electrolyte drink mix that's salty enough to make a difference in how you look, feel, and perform. We co-founded this company to fill a void in the hydration space. We needed an electrolyte drink that actually met the sodium needs of active people, low carb, keto, and carnivore adherence, without any of the sugar, colors, and fillers found in popular commercial products. Health Rebels, this is Salty Talk.

Nicki: And now the thing our attorney advises. The contents of this show are for entertainment and educational purposes only. Nothing in this podcast should be considered medical advice. Please consult your licensed and credentialed functional medicine practitioner before embarking on any health, dietary or fitness change. Given that this is Salty Talk, you should expect the occasional expletive.

Nicki: Welcome back to another episode of Salty Talk.

Robb: Look at you just grabbing the bull by the short hairs or something. Didn't we start that last time? Yeah.

Nicki: Yes. You're really good with analogies though. So I think you should be able to come up with a different one.

Robb: That's a lot of pressure, like right on the spot here. And since our lives just feel like a Groundhog day type of deal, then I get to milk cheesy analogies for at least two uses.

Nicki: Two uses, okay.

Robb: At least two. At least two.

Nicki: So that one's expired.

Robb: That one's done.

Nicki: Okay.

Robb: Yeah. The pulling of the bull short hairs is now done. Yes.

Nicki: Yeah. Okay. Well, I'm glad we settled that one.

Robb: Got to settle something.

Nicki: This is a Salty Talk. Any salty news you want to chat about or anything upfront before we dig into the meat and potatoes?

Robb: Oh, my little cup of diminishing freedom seems to be almost empty. So I'm stepping from that.

Nicki: Yeah.

Robb: That's about it.

Nicki: Okay.

Robb: How about you? What's new? What's exciting? We have a John Frankl sighting.

Nicki: John Frankl will be coming here in October.

Robb: Yup.

Nicki: Super excited for that.

Robb: Yup. Yup. Yup.

Nicki: Yup. Hopefully get a visit from my dad here at some point too.

Robb: That would be righteous as well.

Nicki: Yeah. Looking forward to that. Let's see. Oh, well this Friday we start our third Rebel Reset. We're kicking it off with a kickoff call on Friday and then beginning the seven day carb test Monday the 14th, and then the actual 30 day reset will start on Monday the 21st. So that's coming up for our members in The Healthy Rebellion. So looking forward to that as always. What else?

Robb: I don't know. Your dad keeps pestering you to not be singsong with your speaking.

Nicki: Okay. Yes, apparently I-

Robb: Which you tend to go in and out, and then it doesn't sound very good.

Nicki: Okay. I will aim to have a consistent volume in my voice.

Robb: Perfect. So, today's topic was a little bit of a deep dive on some blood work that I've had done both recently and over the course of a couple of years, looking at my NMR score that includes my LDL particle count, general lipidology like total cholesterol, HDL, LDL cholesterol, triglycerides, blood glucose. But then it's looking at it through the lens of what my good friend Dr. Bill Cromwell has put together as part of Precision Health Reports, which is a analysis for what one's risk profile looks like.

Robb: In this case what I'm looking at is for developing type 2 diabetes within the next 10 years. But there's also some pretty good insight in general metabolic health. And then also he has another option that looks specifically at cardiovascular disease. And so I go back to 2012 the first time that I had the NMR done and I had some very high particle counts. It's been up and down over the course of time, and I kind of unpack the knowns and the unknowns around that.

Robb: This is one of the drawbacks of being kind of shoot from the hip, I guess one might say, I really hate writing things down, logging, journaling. Some people are very good at that, like the Peter Attia's of the world are great at doing their in equals one experiments and having good data around it. Mine is a little more shoot from the hip, but there are some kind of macro level things that have changed over time, certainly our move to Texas. I've had more sun, more consistent sun generally. And even recently, we had a stretch of about five days where it was serious overcast, and I ended up jamming down to the tanning booth and spent 10 minutes in the tanning booth.

Robb: So we've been really good about that. I think that that's been a driver for my improved gut health, and there are some implications around gut health and diabetes and cardiovascular disease and all that stuff. So did a pretty thorough unpacking of all that as I will mention in the main piece, we'll be looking down the road at bringing Dr. Cromwell onto a Salty Talk and interviewing him. We'll be asking questions of folks for that. We're going to preferentially take questions from people in The Healthy Rebellion.

Robb: Also, mentioning that some of this Precision Health Reports, and again, I mentioned this in the main talk that I did today, but we're going to be rolling that out as an option for folks to use, to assess where their metabolic health is and determine some disease risk. That's going to be eligible only to folks in The Healthy Rebellion first, will be available to other folks later, but ...

Nicki: We're launching in there first.

Robb: We're launching it in their first. Yeah.

Nicki: Yep. All right. Let's dig into ...

Robb: Whatever the heck it is I did today.

Nicki: To your blood work.

Robb: Howdy, Rebels. Welcome back to another edition of Salty Talk. Hey, if it feels like you've been here already, it definitely feels like that for me, because I recorded this episode a little bit earlier and somehow my final got corrupted. And so I'm back here again. The bucker about doing stuff like that, particularly like right on the heels of recording something, I've noticed this with public speaking too. If I need to do a talk two or three times in a row to different groups of people, I've done that with police and military and stuff, you start kind of feeling like you're losing your mind because you're like, did I say that already? And so I'll do the best job I can on this.

Robb: I feel like the first go through was actually pretty good. So we'll see if I can do some justice on this, but this is a blood work and lipidology update, looking at some stuff that I've been tracking over the long haul. I am by no means what I would characterize as a "biohacker". I think tracking your blood work is not biohacking. It is tracking some metrics. I don't see it any different than what your one rep, three rep max on a lift or your 800 meter run, I don't see that as being hacking. It's data and benchmarking that can inform things that you're doing and that's all well and good.

Robb: The stuff that I'm going to look at, again, pertains to some lipidology, which I've talked about for a long time. If you've followed the Reno Risk Assessment program, this is the stuff, the NMR, the LPIR score, the LDL-P, the low-density lipoprotein particle count. These are the things that I've been really interested in, and in my opinion, they are just asymmetrically valuable in what they can tell us, like a very few things.

Robb: And interestingly, I'll throw out here, man, eight, 10 years ago, the cost for doing this type of screening was nearly a thousand dollars. And ironically, it's never been insurance reimbursed up until actually pretty recently. But the cost is shockingly less than what it used to be in. The quality has gotten better. And so this is some of my Moore's Lawn medicine type stuff that I like to talk about a little bit, but this image ...

Robb: And so for the folks listening to this podcast only, I'll describe the images that we have going on. If you're checking this out in The Healthy Rebellion, which is the only place

that we get the full video, then you'll be able to see this, but over in this band with the LDL-P, the low-density lipoprotein. Really quickly before I get going, this is one of the things that I mentioned in the first go around and neglecting to mention the second go around.

Robb: If you're not super familiar with the distinction between LDL particle count versus LDL cholesterol and all that type of stuff, I will be doing another interview with Dr. Bill Cromwell talking about this stuff, but I've already done one with him. And we dug into a ton of these kind of basic lipidology considerations. So I'm not going to spend a lot of time unpacking this stuff now. We've done it before, and we're going to do it again in a follow-up episode.

Robb: So this LDL particle count, though, it is in a lot of circles, one of the primary benchmarks of cardiovascular disease risk. I don't think that the purely gradient driven story that the higher your lipoproteins are, the higher your cholesterol is, that it's a hundred percent one-to-one relationship. There's a ton of other factors, I think at play there, including oxidative stress and blood pressure, and some things like that, but it's clearly a piece to this puzzle.

Robb: When I first had my blood looked at, at Specialty Health and Reno, this was back in August of 2012, it was pretty high. I had an LDL-P of 2,700, which in the lipidology circles is a lot higher than what you would like to see. My total cholesterol was 260 at that time. Man, the LDL-C was over 190. My triglycerides were not bad. They were 78, but my HDL was a little bit on the low side. All of this stuff, interestingly has mixed characteristics of like possibly some inflammation, possibly like a chronic infection which if y'all recall, I've had this kind of ongoing gut health stuff that I've tried to resolve. I'll unpack that as we go forward, but this was kind of a surprise for me.

Robb: I was expecting things to look better than what this was at this 2,700. Again, when we start looking at some of the Dave Feldman lean mass, hyper-responders, people like Dr. Paul Saladino, I think Paul's total cholesterol was over 500. I want to say his lipoprotein, his LDL-P was in four thousands, high three thousands or low 4,000, but there's a lot of people in the high two thousands, three thousands in this scene. And it's still unclear what exactly that means from a cardiovascular disease risk profile.

Robb: I'll be honest. It kind of curls my toes a little bit. I'm confident that low insulin levels is beneficial, comparatively. I'm confident that low blood pressure is definitely beneficial. I actually personally put maybe some heavier weighting there because if we shift around to like the Malcolm Kendrick view of atherosclerotic disease, then we need injury initiating event to the vascular endothelium and high blood pressure is a great way to effect that.

Robb: But anyway, so around this time, I was still trying to get my health squared away from like the I-CaveMan show. I definitely had some thyroid issues. I had some low testosterone issues, which I had figured out how to deal with. I talked about that in my yearly training update, where I talked about some use of Clomid and things like that to be able to pull things back to a better place. It was about six months later, five months later that my LDL-P went down to 1,500, so pretty good. Pretty good delta. And also, this is an interesting thing, and this is something that Dave Feldman has really contributed to this conversation, which is that these lipoproteins seem to be much more labile than what most lipidology circles would assume. It seems like these things are able to shift around much better.

Robb: Back at this first point. I think I had some hormonal issues. I definitely still had some gut issues, which I'll talk about how I think I've gotten on top of more of that more recently, but this was also a point where I was kind of messing around with safe starches. Paul Jaminet had thrown out this notion that we needed a certain amount of particular types of carbohydrates. Otherwise, we were going to suffer deleterious gut effects, and I was doing that, and he's also kind of a fan of butter. And so I was doing a little bit of both.

Robb: We do know that in some people, dairy proteins in particular can raise lipoproteins. Now, it's interesting because and we'll get to my current numbers here in just a minute currently, like I'm eating some yogurt, like full fat yogurt a time or two a week like a whole container of it. I do a little bit of cream in my coffee, but I'm not eating butter by the steak or anything like that. But my numbers right now are pretty good, but this is interesting. I went in August of 2012 from 2,700 to March in 2013 to 1,500, didn't really check it.

Robb: I think I had one measurement in that intervening time. And then in September of 2018, I was back up to 2,100, so lower than my initial one, but much higher than what the follow-ups were. I think I've mentioned a time or two, I certainly talked to Nicki about this stuff, which is it's perplexing because I keep fiddling and iterating on the way that I eat so that I can feel the best that I can, so that I've got good energy and I have good glycemic control and cognitive function and all that type of stuff.

Robb: And so it's been perplexing to me because it's kind of like, man, if this is the way that I look, feel, and perform best, but yet it's predisposing me for potentially enhanced risk for say like cardiovascular disease. It's kind of a bummer. It also seems counterintuitive, but not everything in biology falls into lockstep with what we would like. But then also a lot of times, these things are a lot more complex than what we initially say.

Robb: So I believe that this is more of a deep dive from my more recent follow-up, which shows the 2,100 LDL-P, LDL-C was 200. Yeah, that's most of the germane stuff there. My blood glucose was 91, which is in that kind of borderline range as we're going to see here in a little bit, my LPIR score, my lipoprotein insulin resistance score at that time was 40, which is okay, but it's not great. And that's another thing that's kind of perplexing. It's like, man, what do I need to do to improve that? What do I need to do to improve my glucose?

Robb: I already eat pretty low carb. I don't know that I was ... I guess I was ketoed out at that time, which isn't always a guarantee of uniformly low blood glucose levels. Inadequate electrolytes can be a problem in that regard. So there's a lot of different moving parts on this stuff, but that LPIR score really provides an interesting benchmark for predicting in synchrony with a very brief family history. Like, do you have anybody who has a history of cardiovascular disease or type 2 diabetes, into a fasting blood glucose, you can kind of triangulate in on a risk profile and we'll look at what that looked like for me.

Robb: This is my new updated numbers. I just had this run. The blood was drawn on the 12th of August and my fasting blood glucose was 86, which was a bit lower than what it was previously, which is cool, but it was only like a five or six point difference from previously. So I don't put a massive amount of stock in that. I think that this is something for folks to take away when they're looking at blood work. When we get consistent trends, either upward or downward, then it's kind of like, okay, we can start believing that.

Robb: If we get a really significant delta, big change from one point to another, like let's say our fasting blood glucose was in the high 90s and now it's consistently in the low 80s,

we can kind of start hanging our hat on stuff like that. But that previous blood glucose measure that was 91, it probably is reflective of some other problems that I still had going on that hopefully have resolved over time. But it's also a small enough difference that I wouldn't get super wrapped around the axle. You just weight that stuff, the importance a bit less.

Robb: I see people when they're trying to do interpretation around this stuff, they get super wrapped around the axle of these little, little changes. One thing that's interesting, as I'm saying that, previously my LPIR score was 40 and now it's 36. I would put a little bit more weight on that because the way the LPIR score is arrived at looks at a multitude of different NMR peaks and the studies that have been done on that are kind of more robust and there's less hour to hour, minute to minute variation than there is on blood glucose levels. So hopefully that makes some sense.

Robb: And again, I'm going to have Dr. Cromwell on a future episode so that we can talk about this report that he has generated. This is from a company that he has founded Precision Health Reports, and this is going to be something that we're going to offer first to people in The Healthy Rebellion. It will be available to people outside The Healthy Rebellion, but the folks in The Rebellion are going to have access to this stuff first.

Robb: So with the combination of my fasting blood glucose, family history, and my LPIR score in this profile that Bill has put together, that my estimated risk of developing type 2 diabetes over the next eight to 10 years is about 3%, pretty darn low. Technically, you can't really hit like 0% probability, I guess, but it's remarkably low. This is something that's worth mentioning and it's something I'm going to ask Bill about. So my LPIR score right now is 36 and it in combination with my blood glucose levels puts me at a 3% risk for developing type 2 diabetes over the next eight to 10 years.

Robb: I would need to get my LPIR score down to 25 or lower to drop my risk from 3% to 2%. I'm not at all sure what I would need to do to do that. I lift weights, I do some sprint intervals. I do some low intensity cardio. I get some sun on my body. I'm pretty lean. I'm going to talk about some of my theories about improvements in digestion and gut health. I'll just unpack it right now. I have shifted my diet towards more carnivore-ish. I still eat some plant material, but I only eat plant material that I do really well with.

Robb: I have always tended to be on the loose side of things. It's worth mentioning that if one has intestinal permeability, there is a high likelihood of a product making its way into our systems called LPS lipopolysaccharide. Lipopolysaccharide is some of the remnants of the cell membranes of bacteria, and it is incredibly toxic. Vertebrate immune systems freak out when they encounter LPS in really any amounts. Just tiny amounts can really freak out an organism. And rightly so, because it is indicative of potentially a very nasty infection.

Robb: I'm going to back up actually really quick here and take a look at the previous report that I had. My particle sizes, even though Bill kind of discounts the particle size as benign as what some would hope, but there is a reality that HDL, interestingly, HDL particles clear LPS better than LDL particles, although LDL do play their role. In both circumstances, the smaller, denser particles disproportionately well remove LPS from the system.

Robb: So if I've been running around with some low grade gut issues, which I think I have been for a long time, and I've been getting some spillover of LPS into my system, then it makes sense that my phenotype, the way that I look might have changed over time in response to a need to better remove LPS out of my system. This would be consistent

with a generally elevated lipoprotein count and also a shift towards a smaller, denser type of profile. All of that stuff would be consistent with that.

Robb: Unfortunately, it's pretty difficult to assay lipopolysaccharide in the gut. This is not exclusively, but very tightly tied into what happens when we eat food. And that tends to be the primary moment when we get the higher translocation, if that's going to happen. So it's kind of a tough thing to really pin down, but my general profile is consistent with this stuff. Yeah, so it's interesting because again, it starts begging the question, what else could I possibly do?

Robb: Because I shifted my dietary practices in a way that my digestion is definitely better. Also, we moved to Texas about a year ago and not only do I generally have better access to more intense sunlight, more of the year. Reno was quite sunny and people don't appreciate it. It's nearly a mile high. So when the sun is shining, you usually get some fairly intense sunlight there, but it's also at like the 37th, 39th parallel or something like that. We're down at 29 degrees latitude, I believe in New Braunfels. So Reno is far enough North that you can end up with a fairly significant period of the year, or even if it's sunny, you're at an angle that the sun in theory is not strong enough to produce vitamin D and some of the other kind of beneficial effects.

Robb: In theory, New Braunfels is far enough South, low enough latitude that there's really not any part of the year where you can't produce vitamin D. We do get extended periods of time where it's cloudy and overcast here. And so that's going to be a problem. And last year I did a pretty good job of getting out and getting some suntan exposure, some booth exposure to help mitigate that. And that's worth mentioning something, which I've been doing some reading along all of that stuff, and it's tough because when you read the literature on tanning booth use, people use it to tan and that is where all of the studies lie, using this apparatus to tan.

Robb: The outcomes are not great from like skin cancer and stuff like that. It definitely seems to increase risk, but what's really interesting is to maximize vitamin D relative to say like skin damage. If your dose that you would need in attaining booth is 20 minutes to get a tan, then you would actually want to stay in the tanning booth eight to 10 minutes to just maximize vitamin D. I've been doing something similar to this just out in the Texas sun, where generally what I do is when I'll go sit in the backyard and I'm like literally sitting in my underwear, like trying to get as much skin exposure as I can.

Robb: But I use this vitamin D app called Dminder. It takes in my latitude, what the relative overcast is that day in the area where I am. I input my skin type, which I am fair-ish complected, but I do tan reasonably well if given the proper circumstances. And so this thing will then calculate how long I can sit out in the sun before I start accruing skin damage. And it's typically, I don't know, 20 minutes, 25 minutes. It kind of depends on the time of the day and stuff like that, very early in the day, much later in the day, the sun's rays are more oblique, and so you get less of a UV effect, but I'm not out there for hours.

Robb: The theory here is that I would be maybe 15 to 20 minutes each side, and that's kind of it. I do have a bit of a tan, but it's not remotely as deep a tan as I've had in the past. But what's interesting about that is that the more tan you get, the longer you need to stay out in the sun to get the same vitamin D levels that you've had before. So it's interesting. There's just no good literature or none that I've tracked down that looks at the use of sun exposure and tanning booths in the context of just producing vitamin D and all the secosteroids and all that other stuff. I got to say like, my mental health is better. I really think that this has been a major factor in my gut health.

Robb: I don't know exactly what the mechanisms are with that. Vitamin D itself can help mitigate systemic inflammation, and so that could help deal with maybe some underlying gut issues. The secosteroid cascade ends up modulating the cannabinoid receptors, the opiate receptors. So it ends up functioning a little bit like a low dose naltrexone. There's just a lot of different things going on there. I'm not entirely sure again what the mechanism is specifically for me. But what I do know is that I just generally look, feel, and perform better. And interestingly, at least for now, my labs seem to have moved in a favorable direction.

Robb: So that's some diet and some lifestyle changes that have happened in lockstep with changes in my lab work. And again, because I've seen my lab work go up and go down and go up, I don't know, maybe this is like a seasonal thing. I am going to do a better job of tracking this stuff on say like an every quarter kind of basis. I just detest keeping much journaling around this, but I'm going to do a better job of that in the future, because clearly better information like I'm going completely from memory on this stuff. So could be getting as terrible of data quality as like a food frequency questionnaire. So I'm going to do a better job on that stuff, but in broad brush strokes, these are the things that I've seen that have changed over time.

Robb: And now a quick word from today's sponsor.

Nicki: This Healthy Rebellion Radio episode of Salty Talk is brought to you by Ned. If you've been feeling stressed or anxious, if you have any pain or you've been struggling with insomnia, Ned can help. Ned makes the highest quality full spectrum CBD extracted from organically grown hemp plants, all sourced from an independent farm in Paonia, Colorado. Ned full spectrum hemp oil only contains two ingredients, full spectrum hemp extract, and non-GMO organic MCT oil. That's it.

Nicki: Ned also has a body butter, lip balm and natural cycles line. CBD has been shown to help alleviate stress, pain, anxiety, and insomnia. And they just released a brand new product, Ned Sleep Blend, which is really cool, and we just got some and we tried it and so far so good. So definitely recommend checking that out. And now through September 15th of this year, so September 15th, 2020, you've got about a week if you listen to this episode when it releases, you'll get a free Sleep Blend sample with any purchase over \$40, and that's automatically added to your cart again through September 15th.

Nicki: So that's in addition to the special offer that listeners of The Healthy Rebellion Radio get. So if you've been curious at all about CBD, or if you've heard us talk about Ned before and you want to try their products, now is a perfect time, go to helloned.com/salty15, or enter code Salty 15 at checkout, and you'll get 15% off your order. So that's H-E-L-L-O N-E-D.com/salty15. And as I mentioned, if you do this before September 15th and you spend over \$40, you'll also get a free Sleep Blend sample.

Robb: Sleep Blend sample is kind of a tough one to say quickly.

Nicki: It's kind of a tongue twister.

Robb: Say that one five times fast.

Nicki: Sleep Blend sample, Sleep Blend sample, Sleep Blend sample, sleep, Sleep Blend sample.

Robb: There you go.

Nicki: All right, folks, check them out. And now back to today's episode.

Robb: Shifting back to my LPIR score and my risk of developing type 2 diabetes over the next eight to 10 years, the only thing that I could think of at this point that I could do that might improve that LPIR score more, that might improve my blood glucose levels more would be getting back in and donating blood again. I was just getting going on that and then got busy, moved, COVID. And so that has just been completely off the table for quite some time.

Robb: There is a reality that iron overload is an oxidative stress, elevated oxidative stress is not only damaging to the lipoproteins and specifically the cholesterol, which once it gets oxidized, it becomes much more immunogenic and problematic, but it also tends to impair glucose disposal and fosters insulin resistance. So, that might be something that I will definitely tinker with that. That might be something that goes some of these numbers in even more favorable direction.

Robb: And for that matter, low grade iron overload oxidative stress can negatively impair the gut health. So maybe that's another piece to this thing, but there might be four or five different vectors that have been causing me problems with my gut. Historically, I tried to eat a ton of vegetables and I just don't think for whatever reason, like the situation I am that I'm in, I don't do great with a ton of things. At a minimum they need to be really well cooked and I just eat a little bit. I have done pretty well with some fruit, particularly melons. It'll be interesting to see what I incorporate in as we shift more into the winter. I know I don't do super well with apples, but I'll tinker with those. I seem to do better with citrus.

Robb: But this is a point that I think is worth mentioning. I have eaten a fairly low carb diet for quite some time. I've tinkered with things like the safe starches and whatnot. I would say I don't do that well with starches. I actually do better with a little bit of fruit, but the amount of fruit I'm eating in a sitting is somewhere between 10 and maybe 20 grams of effective carbs. I tend to do those earlier in the day, not as like my last meal of the day, but one could make the case that if I've been suffering from a low grade hypothyroid situation, that could be a vector in this overall cholesterol metabolism lipoproteins story.

Robb: I've had my thyroid tested in the past. I seem to be even from functional medicine standards within decent bounds. Nothing looked particularly amiss. I can get that redone so that we have that as a more current benchmark, but that is something that has changed. I've been pretty consistent in eating a little bit of carbs. So could there be a factor of eating only those things that seem to work really well for my digestion, so that has helped mitigate say like the LPS? Am I improving my gut health because of improved vitamin D status and the anti-inflammatory effects of safe, reasonable sun exposure?

Robb: Yeah, I mean, again, there's a lot of different factors in all this. This is just another look at my fasting blood glucose, my LPIR score, and then my overall eight to 10 year risk of developing type 2 diabetes, which is 3% currently. This is a little snippet out of the Precision Health Reports. So when folks go through this process, when they will go through getting one of currently two panels, the first one is looking at your type 2 diabetes risk. And by extension, I would make the case that this is a really good surrogate for establishing your metabolic health.

Robb: If you're not insulin resistant, we can make a pretty good case that you are metabolically healthy, but this is part of the report that Bill generates when you go through this process where it breaks down what the pertinent factors are in your data. Because so often people will get blood work and they get bombarded with a bunch of numbers and they're more confused at the end of it than the beginning. And so this is a very brief

snippet of what is a thorough report that is generated when folks go through this particular type of screening.

Robb: So it breaks down what my fasting blood glucose is, and that it's in the normal range. My LPIR score is 36, and that puts me in the optimal range. It talks about different factors that go into what determines the LPIR score, including age, gender, race, waist circumference, family history, physical activity, glucose, insulin, and then lipids. It describes what my overall diabetes risk is. And again, I would make the case that this is also a good surrogate for what your metabolic health is. We'll talk to Bill about that when we get him back on the show.

Robb: This is largely the same material that I looked at with regards to what my current risk is for developing type 2 diabetes, which is 3%. What would I need to do to get it down to 2% and really would it even be worth doing? This is some stuff that I'm also going to talk to Bill about and see if we can unpack some of this. This looks at a normal glucose insulin resistant curve, and what's important about this is that the benchmarks for diagnosing prediabetes, early and late stage, and then type 2 diabetes, are these somewhat arbitrary cut points.

Robb: In theory, if you have a fasting blood glucose over a hundred, then we would say that you are in a prediabetic stage. Now, this gets challenging because we have a good number of people that experienced things like dawn phenomenon, whatnot, and their A1Cs are fine. They're fantastic. They're below five. So these people aren't likely becoming insulin resistant, although it's possible and we'll talk about that here in a minute. But what's really important to understand is that getting hung up on or waiting for blood glucose levels to begin to rise is really letting the horse out of the stall.

Robb: Abnormal LPIR scores begin manifesting years, sometimes decades before blood glucose abnormalities occur. So we can see problems brewing using this LPIR score long before we start seeing blood glucose changes. So this is another way to kind of triangulate in on what it is we're trying to do. This will be interesting as we roll this out into populations that are kind of more low carb centric, like, what does it look like for these people?

Robb: They are experiencing some dawn phenomenon, but their A1C is normal or low and their LPIR score is normal, low, then we're probably pretty good. But if we start seeing some creep in that LPIR score despite the fact that the A1C is normal, then this is going to give us a little bit more latitude or insight into figuring out what we need to do. It'll provide some, if nothing else, a sense of urgency that we have some metabolic changes occurring that we would like to get out ahead of as quickly as possible.

Robb: And so this is my most recent lab work. And again, this is what most people get by contrast with the stuff that we were just looking at from Precision Health Reports. My LDL-P currently is 1,400, which is still kind of a little bit on the high side relative to I think what most lipidologists would like. But Bill said that given my blood glucose and my insulin sensitivity, my overall LPIR score, he's like, this is fantastic. He has no concerns about this at all.

Robb: Maybe it could go down lower if I still have some lingering gut issues, and assuming that that hypothesis around the gut LPS getting cleared by lipoproteins assuming that that's the case and I still have some problem, maybe buttoning up some more of that will help things. But my HDL cholesterol, HDL particles they're okay. They're not great. They're a little bit on the low side, which is a little bit suggestive of some systemic inflammation, like something that I would like to have buttoned up. We would probably like to see that better.

Robb: But my total cholesterol is down to 196, even though that's kind of a dubious thing to really hang our hat on, but it's a hundred points lower than what it was back in 2012. So, that's kind of interesting. Triglycerides are 79. So I've had this kind of consistency around like the triglyceride HDL ratio and whatnot, or that stuff generally looks pretty insulin sensitive, but it's not perfect. It's not just like knock them out of the park perfect. And despite damn, I just don't know what else I would do. I really prioritize my sleep. I don't drink a lot of booze. I work out.

Robb: Again, one dangling thing out there is potentially donating blood, might button some things up for me better, but I don't know. I don't know. We'll see. Trying to think if there's anything else really important on this page. I don't think so. So what are some takeaways on all this stuff? Kind of two interrelated pieces, these risk elements of chronic degenerative disease, type 2 diabetes and cardiovascular disease being kind of the two primary focuses that the Precision Health Reports will look at initially. It's cool because we know that if we're modifying risks in those areas that we're modifying risk for cancer, neurodegenerative disease, like all kinds of different stuff. Over the course of time, these folks will be able to parse that stuff out better.

Robb: So we do know that these things are by and large very modifiable, diet, exercise, in some cases supplementation, and even in some cases, certain pharmaceutical interventions, they can really have a pretty profound effect. But it's also just stunningly complex. I really thought that I had this stuff figured out ages ago and it just continues to both fascinate and baffle me. So this is where whenever somebody has like a completely hard and fast saying, well, this is the one consideration and say like cardiovascular disease. It's like, man, pump the brakes. We know that there's a lot going on there.

Robb: I would love to be in the camp that could confidently say so long as insulin levels are low then we know that our cardiovascular disease risk is low. Bill actually pushes back on that. And he adds a very concrete case that he builds around it, and it's a little bit of a buzzkill for folks in the low carb space. I don't know if this is just my own cognitive bias, I still kind of push back on that but it's interesting. He cites an example when we look at the Mesa data where there's an inflection point between yes, elevated insulin levels or worsened insulin resistance definitely plays into accelerating the likelihood of cardiovascular disease. And that goes down until it becomes kind of a non issue and then other factors come in, most notably lipoproteins.

Robb: And again, I think that there's a ton that we don't know about all that stuff. I really do think that blood pressure ends up being a really underappreciated factor in this story. And this kind of ties into the endothelial damage model of this story and things like smoking could be a real significant factor there, but blood pressure, elevated blood pressure would be huge in this whole story. So we're going to continue to unpack all that jive.

Robb: We definitely have some diminishing returns that we need to consider. I don't know how much more I can do, and is it worth it for me to fiddle with things in a significant way to get my type 2 diabetes risk from 3% down to 2%. I kind of call this the biohacking neuroses. Like some people just need to chill out with this stuff, kind of good enough is good enough. If you want to continue to tinker and fiddle, that's fine. But I just see people get really wrapped around the axle of all this.

Robb: We will be working with Bill Cromwell and Precision Health Reports in the future. We will be offering this to folks in The Healthy Rebellion first, and they're going to get a special discount on access to this. And then we are going to have a continuing

conversation with Dr. Cromwell around all of these topics we will, or Precision Health Reports will offer this to the general populace at a later date, but we will be rolling this out in advance of the coming reset. I think that this could prove to be a really, really cool benchmark to establish before we go into the reset and it could actually help to inform do we want to be on a lower carb side, higher carb side? Do we want to try supplementing with some tocotrienols or some of these things that are known to potentially have some beneficial effects on lipoproteins and insulin resistance and whatnot?

Robb: We're going to bring Bill onto a future Salty Talk. The ability to ask questions around that will be exclusive to members of The Healthy Rebellion. I just want to remind folks that my goal with The Healthy Rebellion is to liberate a million people out of the sick care system. We have a three point process or kind of, yeah I guess process is a good enough term to determine whether or not you're in or out of the sick care system. The first point there is that we must determine what your metabolic health is.

Robb: If we don't know what your metabolic health is, if we don't know what your disease risk is, we're just flying blind. We don't know whether you should just be steady as she goes and keep doing what you're doing, or if we need to do a really remarkable intervention to turn things around. Because these metabolically driven disease states are again, remarkably labile, very modifiable. So we can really get in and do something about these if we find them and particularly if we find them early on, and then we have some other benchmarks, which if you want to know about those, just go to the join.thehealthyrebellion.com, and you can read about that stuff. The way that I envision being liberated from the sick care system.

Robb: But this is a nonnegotiable feature. We must know where we are with regards to our metabolic health. And then that can help inform what we do with our diet and our lifestyle. And again, for some people, that may be that you just steady as she goes, and we're going to monitor you once or twice a year, so that we're confident that we're doing the best that we can, or the best that we're able to with a good return on investment relatively non onerous, but very effective, or if we need to get in and really do something significant to turn things around. So hope you all are well. We will be doing a lot more deep diving into this topic. I'll see in the rebellion. And can't wait to see you in the reset. Take care.

Nicki: So Robb, you've frequently said, well, I guess it was after Zoe was born and you were super tired, but you thought you were going to keel over and die, and your blood work at that point didn't look stellar. So you thought you were going to keel over and die. So you were pretty happy when you got this latest.

Robb: Yeah. The latest piece it was ... It's been funny because as I related in the main piece, the video talk, whatever we're calling this today, my numbers have been up and down over time. So this'll be interesting, like do we generally see a favorable trend in this more cardiovascularly, benign direction, even though there's still a lot of contention out there, like I mentioned in the main talk, like Dr. Paul Saladino has shockingly high lipoproteins and cholesterol, and currently still has a zero coronary calcium scan, which is great. And there's a lot of different moving parts to all that stuff.

Robb: But all that said, I, and I will go out on a limb and even say he would prefer to have some lipoproteins and lipid levels that look something more akin to "normal", even if you'd just want to do silly stuff like go and get some life insurance or something like that. It may in fact be that we have that this is a nonlinear process and that risk doesn't track a hundred percent linearly with lipoproteins, and that at least seems consistent with

some things that we've seen with like lipid lowering drugs like if you lower these new PCSK9 inhibitors, reduce lipoprotein count by 50% or more.

Nicki: Wow.

Robb: They do not reduce cardiovascular disease risk by 50% or more. So that's one of those things that just at an immediate baseline, and then it still begs the question, well, is it overall beneficial for say, like cardiovascular disease and stuff like that? Statins appear to be favorable in some situations, and it seems to have almost nothing to do with lipid lowering, which again is calling, huh. That's interesting. But anyway, there's a ton of moving parts on this stuff. Lipidology is maybe my largest Mount Stupid Dunning-Kruger event. I hope that it is, hopefully I don't do something even worse than this.

Robb: But in putting together my first book, I forgot to even do like a cardiovascular disease chapter because I just assumed I'm like, oh, if you eat paleo and your insulin is low, then you're good to go. And now I still in afterthought put together some stuff kind of addressing that, but there's a lot more to the story than what immediately meets the eye and that creates remarkable complexity and confusion about what to do and what to think.

Robb: But again, it will be interesting to see if over the course of time my numbers kind of maintain and this more I would say desirable number trend, I'm a little on the high side for cholesterol and lipoproteins, but it's certainly not where it's been in the past. It's definitely not higher than what we see in not so non-Western populations, which is in contrast to some of these like lean mass, hyper-responder Paul Saladino type people that they have lipoprotein and cholesterol levels that are higher than we've seen in any non-Westernized population.

Robb: Does that have clinical relevance? I don't know. But when we use this kind of evolutionary biology benchmark, and a little bit of anthropology and whatnot, when we start seeing things happen outside that ancestral norm, it's just worth asking a question like, is this really the type of desired outcome that we want? And then in some cases we just end up in this situation where it's like, and this was where I was, and it was kind of like, it was very nice to see the numbers change, but I had told Nicki for a year or longer, I don't know what else I would do. If my numbers come back garbage, I don't think I would probably do a statin because I guarantee you I'm going to be the person that gets like neurological problems, muscle wasting. And so I just don't know that I would do that.

Robb: These PCSK9 inhibitors have all kinds of problems with it, and it doesn't guarantee that you reduce your cardiovascular disease risk. But it was nice to at least have something shifted over the last year. And again, kind of the two factors that I fiddled with, I really mainly focus on foods that do very well for my digestion. And that generally has meant fewer vegetables, ironically.

Robb: But that in eating fewer vegetables, I don't know if that's correlative or causative, but in the course of the last year of eating fewer vegetables, my cholesterol levels have dropped significantly. So that's something. And again, I don't know if it's got anything to do with what I was eating in that case. Might have everything to do with improved vitamin D levels and sunlight exposure and improved gut health. But again, as always, it's a lot of stuff to unpack.

Nicki: Awesome. Well, thanks everyone for joining us. Remember to check out our show sponsor, Ned, go to helloned.com/salty15 or enter code Salty 15 at checkout for 15% off

your first order. And remember if you do this before September 15th of this year, and you spend over \$40, you'll also get Ned's free Sleep Blend sample.

Robb: Say it again fast.

Nicki: Sleep Blend sample.

Robb: There you go.

Nicki: And we'll see you all next week.

Robb: Bye, everybody.

Nicki: All right, bye everyone.

Nicki: As always, Salty Talk episodes are brought to you by Drink LMNT. The only electrolyte drink mix that's salty enough to make a difference in how you look, feel and perform. Get salty at drinklmnt.com. That's DrinkL-M-N-T.com.