

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's 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 hydration space.

Nicki: 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. 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.

Robb: Well, howdy there, Wife, how are you?

Nicki: Howdy, Hubs. I'm doing well. I am recovering from my near digit removal.

Robb: Digitation?

Nicki: Digitation.

Robb: Your prestidigitation?

Nicki: Yes. Do not use sharp knives while distracted, PSA.

Robb: Prostate-specific antigen or public service announcement.

Nicki: Public service announcement, that's what I was going for. Yeah.

Robb: Okay. Just checking. So what else?

Nicki: What's new?

Robb: What's new? What's exciting?

Nicki: Gosh. Well, let's see. Today the day this episode airs is our final day of the 30-day reset, seven-day carb test that we did inside The Healthy Rebellion. So that's been a really amazing thing to watch, lots of great results.

Robb: Really amazing results, yeah.

Nicki: Really great takeaways and just a really super group of people.

Robb: One of the biggies, like we had a couple of folks that had what was initially for them a not super impressive scale shift. What was cool about this whole process is that people would actually share what was going on. It's like, "Hey guys, I'm really frustrated. Let me air my grievances here." A number of people said, "I'm just kind of underwhelmed with the scale shift," which is okay. They had a group of people to talk to and some shoulders to cry on. Let me finish my thought here.

Nicki: Okay. So I have something to add.

Robb: And then what happened though is that folks were like, "Don't forget. Do your tight pants test. Do your before and after photo. Do your measuring tape." It's all of these things that matter. If you get some really dramatic scale shift, okay, that's great. But a bunch of these people reported, "By the way, I added 50 pounds to my back squat during this period," or something like that.

Nicki: Something super cool which was pointed out by a fellow member, this one woman, was she lost I believe it was seven pounds over the course of the 30 days, which is not insignificant. She'd been walking four miles a day, but felt like she should have lost more than seven pounds. She said, "I was so excited to get on the scale this morning and now I'm bummed." One of the other members commented, "Read what you just wrote." First of all, she also said she sees changes in the mirror. When she looks in the mirror she can tell that she's lost weight. The member pointed out, "You just said that you were so excited to get on the scale because you know that you've lost all this weight."

Robb: There's progress.

Nicki: "So then the number kind of bummed you out, but this is just part of the journey." As we share inside the 30-day reset, weight loss is a nonlinear thing. It's just forward progress one day at a time.

Robb: It's worth mentioning, a challenge clearly that I would say the vast majority of people faced entering this is that they were almost universally under eating protein.

Nicki: That was a big takeaway for folks.

Robb: If you look into any of the literature, if you just increase protein intake with people they will tend to gain lean body mass. That can be bone mass. That can be organs. That can be muscle. But you're gaining mass that is not fat. So if you just get wrapped around the axis of a scale shift then eating adequate protein may not play favorably to you. But if you want to look like something other than a bag of bones inside of some flabby skin, then you want that.

Nicki: Another member pointed out that the fat that you're losing is also the visceral fat.

Robb: The visceral fat.

Nicki: It's the fat that's around your organs that's the most dangerous types of fat. So I don't know. It was lots of really great discussion and conversation and great results. I think it was a really positive thing all around.

Robb: Yeah. We had a ton of fun with that.

Nicki: We will let you guys know when we are ramping up for our next 30-day reset, seven-day carb-

Robb: Probably looking somewhere around September?

Nicki: Late summer, yeah, early fall. So we'll keep you all posted there. Let's see. Today, Robb, you've got a Salty Talk. This was a presentation that you did inside The Healthy Rebellion about a month ago, maybe six weeks ago called Two Hacks For Atherosclerosis.

Robb: Which if you guys follow me you know I hate the term hack. But this stuff actually reaches almost clinical significance for hackdom. The first paper, Rapid Inhibition of Atherosclerotic Plaque Progression by Sonodynamic Therapy, this was a paper looking at effectively using different types of ultrasound to mitigate plaque formation and also to restabilize plaque. It was really interesting. This is a remarkably safe, comparatively noninvasive procedure, well-tolerated. So this was really interesting. And then the other paper was the Pro Athrocytotoxic Nanoparticles are Specifically Taken up by Legional Macrophages and Prevent Atherosclerosis.

Robb: This was a paper looking at the use of nanoparticles that one of the challenges that we face in dealing with atherosclerotic legions is if you shave the cap off of these things and there's typically a gooey interior to the atherosclerotic plaque, particularly if it hasn't calcified yet, that if that dumps into circulation you get a massive clotting cascade. This can be bad, bad news. This is typically potentially why stroke and heart attack occurs is because of this clotting cascade. But what's interesting about this approach is that these nanoparticles actually resolve. It's effectively part of this pro-resolution modulator process that we're learning so much about, that the inflammatory process, there's the front side of the inflammatory process and the back side.

Robb: The back side is this pro-resolution kind of story. These nanoparticles go into the plaque itself and resolve it from the inside out. So again, in theory, this should be mitigating the potential for really catastrophic events from just having a plaque rupture. So this combination therapy, and again, I've probably gone on record a lot of different times saying there's not going to be a magic bullet that fixes this or fixes that. I still stand by that. But let's say we have somebody that's underwent significant dietary and lifestyle changes but they are still in this kind of dangerous point in their life where they might have unstable plaques. We might be developing some decent tools to be able to mitigate this. I don't see this as being, "Hey man, just double down on Krispy Kremes-"

Nicki: Get out of jail free card, yeah.

Robb: "... and we gotcha." It's not going to be able to stay ahead of that. But this could be something that is added to otherwise smart diet and lifestyle changes that could really move the needle for folks.

Nicki: Awesome. Let's jump in.

Robb: Cool. Today is a deep dive into a couple of research topics that are related. The clickbaity title for this thing was Two Hacks for Atherosclerosis? If you are listening to this on the podcast feed, that's awesome. Thank you for doing so. If you want to get a deeper experience, then you sign up for The Healthy Rebellion and you can see the slides and the collateral material that I generate to support these activities. But in my slide, which isn't spectacular but it's not terrible either, is the American Sign Language sign for bullshit, which just the other day I don't know why, just some self-flagellation, self-torture stuff.

Robb: I decided to look on Instagram and looked for the hashtag biohacking. I just can't believe the bullshit that is perpetuated there. I mean it's not quite on par with saying that mycotoxins in coffee will kill, when there really aren't any, and then claiming that your coffee is the only coffee that doesn't contain mycotoxins. It was a genius move. I provide a huge hat tip for that. But there's a certain, I don't know, ethical, moral dilemma there, at least for me. But this biohacking stuff just fucking drives me nuts. It implies that there's some sort of a cheat, some sort of a shortcut, and this makes me doubly crazy.

Robb: Above and beyond the medical stuff, any physical training-related, like you're going to hack your way to better jiu-jitsu or something, no, you will train better and do the things that make sense to get you better. But in this medical scene, sorry, I'm like the old man that's saying, "Go get off my lawn." It's interesting because there are therapeutics that work really, really well. Antibiotics are a good example of that. If you have an infection your body can generally fight it, although it doesn't always successfully do that. In those cases, bacterial infection, antibiotics can and will save your life oftentimes. So in a way, that's kind of a hack.

Robb: But really the truth of it is that's just proper application of good technology and good understanding of the physiology and biochemistry and all that type of stuff. But my good friend, Pedro Bastos, shared two articles with me in the same day kind of related to atherosclerosis and some modern treatments that maybe are going to help deal with atherosclerosis and the problems that the atherogenic potential can present, not the least of which is heart attack and stroke. I believe heart attack or at least cardiovascular disease is still the number one killer of folks in Westernized societies. So it's a pretty important deal. Clearly there's a ton of contention within the nutrition and dietary scene about how you should eat to mitigate your risk for these diseases.

Robb: Of course, the vegans say that if you eat a vegan diet you will be 100% free of cardiovascular disease. Unfortunately, in all honesty, it's unfortunate because if it was that easy then, cool, everybody do it. But we just don't see those numbers play out. In fact, the lowest rates of cardiovascular disease or atherogenic disease process that we've ever seen is the Tsimane, a hunter-gatherer group in Bolivia, which they don't eat

massive amounts of meat. They eat more carbs and plant fibers, twiggy stuff probably by caloric load than they do meat. But if there was this dose response curve associated with meat then we should be seeing problems there. But that's not really what this is about. It's about this atherogenic process.

Robb: The title of the first paper I'm going to dig into is Rapid Inhibition of Atherosclerotic Plaque Progress by Sonodynamic Therapy. This appeared in Cardiovascular Research Volume 115, January 2019. So it's about a year old. I will, of course, have the links to this material in the show notes. But just as a really quick background, the process of atherosclerosis, there's all kinds of contention generally around what occurs with this. At least to some degree there are some schools or camps, let's say, that assume that lipoproteins, specifically LDL cholesterol and LDL lipoprotein, are the causative factor in this atherogenic story.

Robb: There are folks that believe that there's more of a vascular endothelial damage story. And then there's, I guess, kind of nested under the endothelial damage story is this vascular inflammation story, which I think is pretty complementary to that. I don't, again, want to get too far out in the weeds. I'm hoping to have some folks like Malcolm Kendrick and some other people on for these expert interviews talking about this. But it's worth noting that the atherogenic process it, in general, occurs in the arterial side of the circulatory system, the pressurized or the higher pressure side of the circulatory system, even in folks with incredibly high blood lipids and all kinds of, like familial hypercholesterolemia.

Robb: We don't really see atherogenic potential or progression on the venous side. So there's some insight into there. We certainly see a high correlation with elevated blood pressure and the atherogenic process. There is some thought that non-laminar flow, this turbulent flow that can occur within the vascular bed, particularly the arteries, that turbulence can itself damage the vascular endothelium. And then if we're eating a pro-inflammatory diet, maybe if our omega-3, omega-6 ratio is off, maybe even high glycemic departure, high blood sugar going to low blood sugar, those correlate pretty strongly with both atherogenic potential and the throwing of a clot that ultimately leads to a stroke or a heart attack.

Robb: But anyway, the atherogenic potential clearly or process, excuse me, clearly has some amount of damage to the vessel wall. Then we do see an interaction of lipoproteins trying to assist in repair of this damage in monocytes, then infiltrate between the vascular lumen. These can differentiate into macrophages which engulf the fat and lipids and damaged tissue. These things can grow and grow and grow and become what's called foam cells. These foam cells are, again, an attempt at mitigating problems, but they can actually create even more problems because the inflammatory state of these foam cells is pretty high. If they rupture in a way that all the contents within, say, like an atherosclerotic plaque makes its way into circulation, it's incredibly pro-clotting.

Robb: The clotting cascade is a fascinating process. It's incredibly complex. But it's just almost like something appears out of thin air, the way that the clot forms and these proteins go from being soluble to insoluble. It creates this kind of cotton-like network and clearly

important if we are bleeding, but it can be really problematic if some sort of clotting event occurs in the wrong place or at the wrong time. So this foam cell development and this vascular endothelial damage model of the atherogenic process is really important. But there's a resolving element to this story that when it works well, we don't really head down this process of developing the atherogenic plaquing and streaks.

Robb: There is a way to circumvent this, to receive a little bit of damage but then have the body adapt and recover and move forward. In theory, or I think it's reasonable to assume that the way that we live in modern times, the low light levels, relatively inactive, poor diet, stress, all the stuff likely leads into a scenario in which the pro-atherogenic side of the story overwhelms the body's ability to recover and deal with this stuff. Even that is maybe a little bit of a misnomer because the body, even the process of developing atherogenic lesions is a really fascinating adaptation process. That can go on for years and years. It's only when a significant clot is formed with a rupture of an atherosclerotic plaque that we would end up having potentially a life-threatening stroke or a heart attack.

Robb: But anyway, just a little bit of background on the, I guess, pathophysiology of the atherogenic process. But in this paper that we're talking about, this sonotherapy, basically an ultrasound therapy, they have a product, a couple of different chemicals, 5-aminolevulinic acid and also protoporphyrin IX are two of these substances that are used, can be administered either intravenously or orally, interestingly. What happens is these substances associate with the macrophage foam cells and then when these substances are activated within the foam cells themselves, which are part of the arterial wall, it actually helps to resolve that atherogenic plaque from the inside out, from the vascular endothelium all the way out to the outer edge of the plaque.

Robb: They have done this in rabbit models, mouse models. They've done a little bit in human models. The interesting thing is they've mainly tackled things like the carotid plaques and the femoral plaques. It's unclear to me whether or not they would be able to make this work in the heart itself which arguably would be some very important places to make this thing work effectively. But the intervention that these folks use and, again, I'll have links to the paper itself if you want to peruse it. It's really fascinating. They did this intervention where they used these ultrasound responsive molecules that cause a resolution of the thrombotic event in a favorable way.

Robb: Instead of it being a feed-forward mechanism of necrosis and pro-inflammation, it actually helps to resolve the whole process in a pretty favorable way. Part of what occurs appears to be some pretty legit improvement in the cross-sectional diameter of various stenoses, the tightening of different vascular junctions or vascular beds. They did something interesting. They compared the sonotherapy by itself versus atorvastatin, which is a pretty common statin, and then the atorvastatin plus the sonotherapy. With the statin alone at a four-week baseline, the claimed resolution or reversal of stenosis was about 3%, which that's so small I kind of question whether or not even the imaging technology is good enough to ferret that out. But we'll give them the benefit of the doubt.

Robb: But with the statin plus the sonotherapy, the original blockage went from 56% down to 39%, so a pretty significant resolution in only four weeks. So this stuff definitely seems to work. It has very little in the way of side effects. When I first heard or just read the headline of this thing, it got me thinking, "What should we be concerned about with this stuff?" Because with the current, I guess, standard of care, standard of therapy is the implantation of a stent which is a kind of wire cage that is wrapped around a balloon that is threaded via catheter up through the femoral artery and threaded typically into the heart, some of the coronary arteries where there is a significant blockage which may be causing angina, heart pain, and clearly is, I guess, higher potential likelihood of that blocking with a clot being formed.

Robb: But the interesting thing is when you look at what happens when this stent is placed, it's threaded through the vascular system. This balloon is inflated to expand this wire cage and then it's left alone. The balloon is removed and what have you. But it leaves basically a little wire cage inside the artery. This is really pro-inflammatory. It causes a lot of problems. Over the course of time, they have embedded different chemical matrices into the surface of that stent to try to mitigate at least the initial about first three to four weeks of a pro-inflammatory process. But it gets all fibrosed and scarred. It is itself not that great of a benefit.

Robb: In the process of inflating this stent, there's a lot of material that's dislodged and a lot of damage that occurs to the vessel, not surprisingly. This stuff was never designed to have a chunk of metal or a mesh of metal expanded into it. It's not to say that there isn't benefit for doing this, but what's interesting when you really dig into the literature on this stuff, the proper application of a stent is in some really specific scenarios. It's entirely unclear, maybe not entirely unclear, but given the number of stents that are placed and the long-term outcomes of stenting and not stenting, it's not entirely clear that's it's a huge win.

Robb: So finding some things that are more in the immunotherapy route where we are dealing with the atherosclerotic process in a method that's basically leaning on the immune system itself to deal with the problem, which it can, will, and does do that. It's just if the system gets overwhelmed then we end up with atherogenic progression. So this stent stuff, it'll be interesting. 10, 20 years from now we may look back at this and it may be just a step above the use of leeches. I mean this is no more sophisticated than a plumber cleaning out a hair clot in your sink effectively, the current use of stents. Whereas, this application of immunotherapy, ultrasound, this is pretty sophisticated stuff. It seems to be much more targeted and ostensibly it seems to have a whole lot less down side.

Robb: The other paper that is kind of synergistic to this because this, again, the sonography piece I don't know if it lends itself to application in the heart. Could you use that in the coronary arteries? Where it is used is in the carotid artery. It's used in the femoral artery, so places where you could get enough stenosis, particularly to the carotid artery such that you have significant blood flow restriction. Then we could end up with an improvement in that whole process because it's effectively opened up. Sorry, sorry. Totally I had a pop-up on the computer and it completely blew me away.

Robb: So again, the sonotherapy is super cool, maybe more appropriate for dealing with things like carotic blockages or thickening in elsewhere in the major arteries, not sure if it's really going to be providing much benefit with, say, coronary artery occlusions. But this next paper that appeared in Nature Nanotechnology, the title is Pro Athrocytic Nanoparticles are Specifically Taken up by Legional Macrophages and Prevent Atherosclerosis. I had not really heard the term athrocytosis in a long time and I had forgotten what it is. But it's a process whereby dead or dying cells are removed by phagocytotic cells. They are basically engulfed by other cells.

Robb: Now, what's interesting about this, and particularly right now where people are so geeked out on fasting and interim protein restriction because they're going to induce apoptosis and all this stuff, apoptosis in and of itself is an important process to properly manage within our systems. I talk about this in my current talk on longevity, which I'm doing at KetoCon and Paleo f(x) and a couple other places throughout the year this year. But when a cell goes through the apoptosis process just open to the system, there is a massive amount of pro-inflammatory substances that are just dumped into the circulation.

Robb: So in the athrocytosis process, these ... How do I want to say it? These cells that are on the verge of going rogue, they're just about ready to die. They're going to go through the apoptotic process. Maybe that's generally a good thing because maybe they could turn into cancer or something like that. But it's bad in that it is very pro-inflammatory. So in the athrocytosis process where these dying or damaged cells are brought into another cell, typically macrophages, then they can be effectively killed and dealt with in a vacuole, inside a bag effectively. It's a really important process.

Robb: What's interesting is that many of the disease states that we see have some interesting relationships with cystic fibrosis, cancer, cardiovascular disease occur because the pro-resolving mediators that are involved in inducing this athrocytosis are either down-regulated or broken. Again, this is where modern diets may be problematic. Omega-3 fats, particularly DHA, helps in this pro-resolution process. So it's interesting that, again, we have some diet and lifestyle pieces that describe possibly how this whole story goes sideways.

Robb: Again, in the atherogenic process, if we have just apoptosis of cells, we can experience a much higher total, say, systemic inflammatory load even though some cells that need to be taken out they go through the apoptotic process. It's better if they go through the athrocytosis process where they are brought into some sort of an immune cell and are basically killed and dismantled within this membrane versus just out in the body. Now, a quick word from today's sponsor.

Nicki: This Salty Talk episode is sponsored by Kettle & Fire. Kettle & Fire makes the first USDA-approved shelf stable bone broth made with grass-fed and finished beef bones and organic pasture-raised chicken bones. Regularly drinking bone broth is helpful in improving gut health, provides nutrients for stronger hair, skin, and nails, and can help improve digestion. If you didn't know, Kettle & Fire also has an entire suite of bone

broth-based soups and they are super tasty. They've got butternut squash soup, a tomato soup which the girls love.

Robb: The girls smash that.

Nicki: Love the tomato soup. A broccoli cheddar, beef chili with beans, Thai curry. Kettle & Fire also makes keto soups, including mushroom bisque, butter curry, and spicy cauliflower keto soup. The spicy cauliflower actually is my fave. It's got just the right level of heat. It's not too spicy, a really great flavor. All of these are delicious, easy meals. Just heat and serve. So grab your Kettle & Fire bone broth and stock up on their bone broth soups at kettleandfire.com/saltytalk and use code Salty Talk for 15% off your order. And now back to today's episode.

Robb: There's a great podcast that digs into these pro-inflammatory resolution mediators. It's episode 69 of STEM-Talk. This is with David LaMay. Can't recommend that enough. It's fascinating. It kind of goosed me to not go as high on the fish oil as what I recommended in The Paleo Solution. But I did diligently reintroduce a gram or two a day of additional EPA/DHA into my system. Maybe every third or fourth day I do a quarter of a baby aspirin to help kick this pro-resolution modulation process into action. What was interesting is that Dave LaMay kind of alluded that there was no bottom limit to how small the aspirin dose needed to be to kick this process forward.

Robb: So if you're concerned about, say, the thrombotic or bleeding potential of taking aspirin which is a nontrivial thing and unfortunately some of the morbidity and mortality data suggests that chronic aspirin usage, even baby aspirin, doesn't ultimately end up improving morbidity and mortality. But I have a feeling that maybe these punctuated doses of something like the aspirin to help goose these pro-resolution modulators may be a net benefit, and I might die tomorrow. So who knows? But there's really interesting therapies that are developed here that are around nanoparticle therapy where these carbon tubules can be selectively modified both with drugs or substances, typically immune fractions that can help them be targeted to a specific location, like macrophages that are accumulating in the atherosclerotic plaque.

Robb: But then it can also deliver substances that can help end the pro-resolution process. So it can be very, very targeted. What effectively happens in this story is you are able to modulate the inflammatory immune response for this atherogenic process right in the atherosclerotic plaque. A lot of the therapies that have been attempted in the past are systemic in nature. So we're suppressing inflammation systemically which can be good up to a point but, again, back to fish oil, I remember reading a paper ages ago that in tissue transplant scenarios they were giving people remarkably high-dose fish oil. This was suppressing immune function to such a degree that it was facilitating tissue transplantation.

Robb: So we want some immune response. We want that immune response at the right place, at the right time, all that type of stuff. But it's a critical thing to recognize that we don't want it to go out of control. I'm going to read a piece from this article. "By delivering an anti-phagocytotic signal that enables immune evasion, the up-regulation of the don't-

eat-me molecule, CD47, is a major mechanism by which cancers establish and propagate disease. We recently discovered that CD47 signaling also had a critical role in atherosclerosis. Atherosclerosis is a process that underlies heart attack and stroke and has remained the leading cause of death in the United States for nearly the past century. While pursuing the mechanism by which apoptotic vascular cells escape clearance from the diseased artery, we found that CD47 is markedly up-regulated in the atherosclerotic plaque."

Robb: So the CD47 molecule or ligand is critically important in modulating this immune response and inflammatory response maybe more importantly. What's interesting is it's involved both in cancer and in cardiovascular disease. I wouldn't be surprised if it's involved in some of these other systemic inflammatory scenarios. Some interesting benefits of this nanoparticle technology is that it could be ... Again, I made the point that global suppression of immune function has not really worked. It has tended to, like the inhibition of interleukin-15 ... I'm forgetting off the top of my head. Sorry.

Robb: But the global suppression of these interleukins ends up suppressing immune function to such a degree that people end up dying from secondary infections. So that's really problematic. Ability to target specific tissues, cell types has a huge benefit with these nanoparticles, may have a huge impact on cancer, both cancer and atherogenic process. I think that this is interesting that with some immunotherapy and some thought towards making these processes much more targeted, we may get much, much better outcomes. So what can we do other than this stuff just as a quick maybe roundup on this topic? Find a diet that works well for you to produce good body composition, although good body composition is not a guarantee of no atherogenic potential.

Robb: It certainly isn't going to hurt things. Be mindful of your glycemic load and immunogenic foods. Again, this is where gut problems more globally understood are likely a massive systemic inflammatory load. So the folks that make light of ferreting out gluten intolerance or dairy intolerance or whatever, if you have gut problems, if you eat a pizza and then need to take five shits on the way to the gym to work out, there's possibly a problem there. I would go out on a limb and say that that problem is going to include systemic inflammatory issues that include increased cancer and cardiovascular disease risk.

Robb: Exercise is awesome for mitigating all these processes. Exercise is part of what fires up the pro-resolution pathways. More is not necessarily better. Lifting some weights, doing some low-level cardio, and maybe the occasional intervals, pretty good. But again, too much of that stuff for too protracted a time ... Too much high intensity activity can lead to this non-laminar flow in the circulatory system and it's clear that that is one of these injurious elements that can ignite the atherogenic process. Making sure that you have adequate sun and vitamin D, just being out in the sun provides much more than the vitamin D. It enhances nitrous oxide release which is this vasodilation process that's great for having an erection or being sexually active, but it's also really important for proper just general vascular function, including singing and hearing and all that type of stuff.

Robb: Meditation could be a huge benefit in this story because of the stress reduction. And then again, possibly a bit of fish oil, maybe a gram or two a day and then maybe a quarter of a baby aspirin every second, third, fourth day, something like that. I think that there's some compelling reasons to consider that. Again, you might check out the Dave LaMay podcast episode 69 of STEM-Talk. I would recommend some form of advanced testing that includes the LPIR score, the lipoprotein insulin resistance score, so that we get a sense of what your insulin resistance status is. We also see a snapshot of your global systemic inflammatory status with a product called GlycA.

Robb: And then also we get a reading on where your lipoproteins and total cholesterol are and we can kind of, if nothing else, use that as a baseline for where we go from there. And then of course, from there, folks can look into the CIMT, the carotid intima-medial thickness screening which is an ultrasound. You really need to find somebody who's quite good at it and does a lot of them. It's more art than science. A little bit more consistent is arguably the coronary calcium score. You get a mild dose of radiation with that, but it's pretty darn small. Although a 100% clear coronary calcium score is not 100% get out of jail free card with regards to cardiovascular disease or potentially having, say, a catastrophic heart attack or stroke, it's arguably better than seeing really advanced atherosclerotic processes.

Robb: There's a case to be made in this too, if you're 30 years old and you have a coronary calcium score of zero, it's maybe kind of a shrug. If you have a coronary calcium score of over 100 and you're 30 years old, then it's really concerning. It means that stuff is really off to the races and may be very problematic. If you're 70 or 80 years old and have a coronary calcium score of zero, similarly that's really informative. It suggests that there's probably not a lot going on with regards to atherogenic plaquing and disease process. Anyway, that's what I've got for y'all today. Thanks for listening. Although it's nice to get out in the weeds, I'm really going to try to focus on those areas that provide us some routes to legitimately improving performance health and longevity.

Robb: This is going to support our overall goal within The Healthy Rebellion of helping to liberate one million people from the sick care system. Honored to have you along for the ride. Take care. We'll talk to you soon.

Nicki: That was a good one, babe.

Robb: It's not bad. It's not bad. Yeah.

Nicki: Well, and it's clearly the first course of action ideally is people getting their nutrition and lifestyle in check to minimize atherosclerotic potential in the first place. But to your point, if you've done all of that and you still have some disease process going on, it's nice to know that there are some therapies that are being developed that could help minimize those, the effects.

Robb: Yeah. And these things appear to be very effective. They really might resolve the actual disease process. So yeah, there's some real interesting potential there.

Nicki: Awesome. Well, thanks everyone for tuning in to this episode of Salty Talk. Please share this episode if you know anybody who might be interested in the topic at hand. Be sure to check out our show sponsor, Kettle & Fire, and their amazing bone broths and bone broth-based soups by going to kettleandfire.com/saltytalk and use code Salty Talk for 15% off your order. What else, Hubs? Any closing thoughts?

Robb: That's it. I'm just happy we're going back to jiu-jitsu.

Nicki: All right, everybody. We will see you next time.

Robb: Bye guys.

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 drinklmnt.com.