Introduction to Rob Wolff and Healthspan

All righty everyone, we're joined by Rob Wolff. Today we're going to do some really cool stuff. We talked about nutrition here and there. But we're going to dive a lot deeper because we have a brilliant mind that can help us learn what we need to learn.

Really, why are we all here? We want to learn about how to optimize our healthspan or longevity. Those are the key words we got to focus on, because there's one thing to say, I want to live to 100.

But do you want to spend the last 20 years in treatment in a hospital bed, or do you want to be, you know, have your vitality and energy that you did when you were 25?

And I don't think there's a better person to speak to about that, that Rob was joining us here today. And thank you for joining us. A huge honor to be here. Thank you.

You've been helping people, you know, globally with your thought leadership. And we're lucky to talk to you today. And you've gone through this journey personally yourself.

And that's part of your learning. So maybe we start there and tell us about how you got to where you are today and why you're able to help so many people.

Oh, man, I, I so I just turned 50, back in January, so I'm, I'm, you know, I'm definitely pressure testing all of these, you know, ideas and concepts.

But 23 years ago, I was super sick. So my training, I had a background in biochem history, more on the organic, synthetic side, but I was doing some, bench level research in cancer and autoimmunity was tinkering with my own diet.

And at that time, I was eating a high carb, low fat, vegan type of diet. And for me personally, it didn't work well, like I ended up with ulcerative colitis, terribly badly.

Was facing a bowel resection in, immunosuppressant drugs. And I've got to say, also like at that time, I was doing everything wrong.

Personal Health Crisis and Paleo Recovery

So I don't want to overly throw the dietary part under the bus like I, I have learned over time that I do better with fewer carbs and even not a ton of fiber and different things like that.

But I was in this grad school mentality that sleep is for the weak. Sleep when you're dead. I, I was living in Seattle at the time, and so the I would get up before the sun came up, get home after the sun went down, I had a basement apartment.

I eventually got my vitamin D check ages ago, and it was barely above the level for rickets. I mean, I had super low vitamin D, so I wasn't sleeping well.

Poor circadian biology, terrible vitamin D status, and I was eating a diet that was just not, working for me. But, in an act of desperation, I started doing research around the issues that I have.

I have celiac disease, which is an autoimmune gluten intolerance. Had some other kind of food intolerances. And when I, I, I'm not even entirely sure how I arrived at this, this idea.

But I was intolerant to kind of grains, legumes, dairy. And I was thinking about that. I was like grains, legumes and dairy. Okay. That's like agriculture or.

Well, first I was I was kind of thinking, what on earth do you eat if you don't eat those things, you know? But then I started thinking that I'm like, okay, that's kind of agriculture.

Or what did we do before agriculture? We were hunter gatherers. And mind you, this was, 1998, and I had this idea of a Paleolithic diet, like I had heard this term, regular lithic diet somewhere.

And I went into the house and I turned on the computer and waited for the computer to boot up and do its thing, and then into a brand new search engine called Google.

I put the term Paleolithic diet. Yeah, and there wasn't a ton of information on it at that point, but there was a little bit in the information that I found was interesting.

It talked a lot about gut and autoimmune issues, you know, because of a mismatch genetically between the kind of theory of foraging and hunter gathering as kind of the human life way for so long.

And then this transition to agriculture maybe introduces some, some types of foods that the natural predation protection chemicals that are found in these foods might be, problematic for gut health.

So I was so sick that I was like, okay, I don't have anything else to lose. And so I went on what is basically a low carb kind of ketogenic paleo diet.

And for me, it saved my life. Like it ended up addressing 8,085% of the issues that I had at that point. And then over time, I've figured out a few more layers, a few more layers.

But it was so profound the, the change that I had dietary at this point, I was looking to get either going to medical school or a PhD track in in research, but it struck me so powerfully that I wasn't really sure if I wanted to do either one of those things.

And so I was kind of casting around a bit for what the next step would be in my life. And it was right around this time it was, 2000, 2001. I found this weird workout online called CrossFit, and I started doing that with a friend of mine who's a retired Navy Seal.

And, we were we were working out in his garage and within about 3 or 4 months, we had about 15 people that we were training in his garage. And I loved it because I could talk about food and sleep and circadian biology and then do this physical training stuff.

And I reached out to Greg and Lauren Glassman, the founders of CrossFit, and said, hey, I'm we're training people using this methodology. We'd like to open a gym, informally call it CrossFit.

Can we do that? And we're like, yes, go be achieve. And so that was the first CrossFit affiliate gym in the world, CrossFit North. And then I had a chance to move back down to Chico, California, which is where I did my undergrad in chemistry, and I opened a gym there, and that was called CrossFit NorCal.

NorCal Strength and Conditioning. And I've kind of worked in and around that CrossFit scene and peripheral entities for, you know, the intervening 15 or 20 years, I've worked with, Naval Special Warfare, working with the Seals and the special teams on, on their nutrition and circadian biology and whatnot, have worked with some high level athletes.

But the main people I really like working with, and I think the reason why I've had pretty good success with them are folks similar to myself, who have kind of complex gut and autoimmune issues.

I think that there's a lot of different ways that people can lose weight. I think there's a lot of different ways people

can kind of get fit and get in shape and whatnot.

CrossFit, Coaching, and Gut-Autoimmune Focus

But when you start getting into this scenario where people have complex gut and autoimmune issues, I don't I think that there's a much more limited number of options that really legitimately work.

And that's kind of been my sweet spot. And the reason why I have stuck there is because I continue to tinker with my own health. My my health is improved remarkably, but I still have some stuff that I, I tinker with and fiddle with, and I think that that's a large part of the reason why I've been pretty effective at helping people, because I'm still in the trenches trying to figure out things to try to improve my my situation as well.

And just so everyone knows, we're we're lucky to have Rob with us today. You're probably noticing that the, the connection is a little choppy and that speak to Rob's lifestyle and where he's decided to put himself.

Right. So we're lucky to have access to him today and learn from him. But that's part of what you've done, is you position yourself in a place where maybe you don't have the best Wi-Fi, but you have the best health outcome, and you're kind of giving up one thing to get something else.

Yeah, it's kind of funny. I'd live in a spot where, Starlink doesn't work because of the positioning of the mountain. So that sucks. And then the, the DSL that we are carrying this message over some of the wire that is carrying this message was hung in 1895.

So that's what we're working with. Yeah, yeah. I think Montana technically has the worst internet of anywhere in in North and Central America. Like, you literally couldn't find a developing country that has more internet than, the Montana does.

So that. Yeah, yeah, well, it gives you plenty of time to sit back and write and share and help. Right? So it keeps me off line, that's for sure. Yeah.

Yeah. For, so the there's something you said there about, gut and often when it comes to our diet planning and nutrition and I know there's other things we gonna talk about today, but we start with, what do I eat?

Right. As opposed to let's get the terrain or the body ready to even deal with that choice. And that's kind of what it sounds like to me, is what you do is, you know, that that expression of gut dysbiosis or whatever it may be, you're healing that.

Like, what's the point of eating the best food when you're not even absorbing the nutrients anyway? Yeah, yeah. And I mean, I think that the that goes hand in hand because the, the gut microbiome is so dynamic based on what you are and are not putting in it.

So like meal timing can change the gut microbiome. Our circadian biology, like when we're out in the sun, when we're not out in the sun, can change it, but it definitely changes dramatically in response to what we are or actually feeding it.

And that's one of the things that's been fascinating to get into this lower carb and even sometimes, like this carnivore space, where, you know, the common wisdom is that, people need fiber as an example for, for, you know, optimum gut health.

And I have no doubt that there are absolutely some people that thrive on fermentable fiber and do really well with that. But you've also just clinically seen a lot of people that do terribly.

And I'm one of these folks like I, I've, I've tried the the green banana is the, the, you know, cooked the rice the day before and then, you know, refrigerate it to, to get the resistant starch and everything.

And I seem to do better with the less fiber that I get in, like I used to do a giant green salad all the time. And, I'll do a little bit of fruit. I'll do a little bit of of roots and tubers.

But I what I have found over time is that I do pretty well with like, fish and meat and, and stuff like that, a little bit of fruit and that's kind of it.

And so, in theory, that should be really depriving my gut of the appropriate, you know, substrates for like creating butyrate and these things that feed the parasites.

But I think that we've been finding that the gut is super adaptable. Doctor Tommy Woods did a published a paper on this talking about the metabolic flexibility of the human gut.

And I think that the big takeaway that we have in all this is so long as we are feeding largely whole, minimally processed foods to people, whether it's high carb or low carb, the gut tends to do pretty well.

The danger zone seems to be when we get into exceptionally highly processed foods, those scenarios tend to, introduce a situation in which we deprive the gut of proper substrate, and we can foster dysbiosis and not provide the materials for the for the gut to feed itself and produce like butyrate and propionate and these short chain, saturated fats.

And it's kind of the, the classic, low fiber, low protein, high, processed carbohydrate diet seems to be the way to to get to there. So it sounds like there's a sense of so a lot of what people are doing today.

One element that they may not be considering is the consistency. Meaning that the way you eat, you sure there's a particular diet plan you can bucket that in?

It sounds more paleo carnivore, but it's also consistent, meaning you're allowing the gut to flourish in that diet, setting it. You're not. You know, where today it's like Uber Eats.

I'm having sushi for lunch and Thai food for dinner, and I'm ordering ice cream.

Diet Personalization, Protein, and Fruit

You know, it's it's just too convenient to have too much variety, which is not the way our ancestors ate. Yeah. And I mean, it's, people can can over play the, the ancestral health angle, but I think that there's a lot of truth to it.

Like we do. Well with some variety. But to your point, you know, it's like if it's Belgian waffles for breakfast, sushi for lunch, Thai food for dinner.

Right. I'll run down with, with, like, a chocolate sundae or something like that. That isn't. Most people aren't going to do well with that. Like, if you're 18 years old and an an athlete, you might handle that.

But you hit 30, 40, 50, like, did people start noticing significant gut issues and dysbiosis and a whole host of problems that emerge out of that? So, ironically, as much as I advocate for kind of dietary variation, I think that people overplay that card to some degree.

Right. And you know, this this gets out in the weeds a little bit. I've never been able to find this article, but there was an article I read ten plus years ago and it talked about explorers to the New world, and it was kind of a sideline, but it mentioned all of these folks had horrible gut issues eating the food here in the New World.

Like, they had gas and bloating and this and that because their, their dietary practices were very, very different than what they had in, in Europe. And so it's is kind of interesting.

And I have looked everywhere I could think of to try to find this thing because I, I really found it fascinating, you know, in these folks were shifting from what is arguably a pretty minimally processed diet.

You know, 16, 1700s in Europe and then a minimally processed diet in the Americas. But they still were experiencing all this, like gastric upset and other health problems as a consequence of that, which I just find really fascinating.

Right? So you I mean, you speak a lot about various types of dietary restrictions, and we're going to talk about that stuff because that's where a lot of people start, like as opposed to what should I do with what should I get rid of?

But I want to ask you a quick question, because you said that you focus on proteins and fruit, which I've heard from many people, and I heard that they feel great.

And then there's a lot of other people more from sort of the allopathic medicine world that say, well, you've only been doing it for a short time. Just wait for your kidney problems to start.

So what do you say to those people? I mean, there's tons of research on looking at high protein diets and kidney function. And mainly what I say to those folks is they're clearly not well steeped in the literature because it's, the the correlation between kidney function, kidney damage and protein intake.

It just is a non issue of somebody has existing kidney damage, which is usually caused by chronically elevated blood glucose levels. Then additional protein can further exacerbate that situation.

But it's it's usually a sign that they're really not well steeped in the, in the literature on the topic. Right. And there's some people that will also say that I'm not going to eat fruits because there's a lot to do with sugars.

And I know there's some understanding of, you know, fibers counteracting that. That's probably why you don't need all these fibers from vegetables as you're getting a lot of fruit.

But do you see any challenge there with, glucose spiking either of your monitoring or. So I personally, I'm talking like I maybe get three apples a day breakfast, lunch, dinner.

Like, my fruit consumption is very modest. It's usually 20 to 30g of carbs at a at a meal. If I do jujitsu or something, it might be a little bit more.

So I do like Paul Saladino. We'll get like, 200, 250g of carbs from fruit per day. That would be way too much for me. Like, gastric issues. It would actually be too much fruit dose and too much, fiber for me.

Right? Because I have celiac disease. Many folks with celiac disease also have fructose malabsorption issues. And so if they eat a ton of fruit with a ton of fructose, you get this fermentation process where you don't absorb the fructose, the gut bacteria start fermenting it into alcohol and other fermentable products.

And, it's, it's it's a disastrous bathroom visit at that time. So, so I really don't notice that, you know, very, conservative tea for myself. I don't do it exactly the same every day.

If my activity level is really low, then I may not have any any fruit at all. And it's mainly just protein and and fat, maybe a little bit of, you know, super low, glycemic load, like carrots or something like that.

So I've just kind of customized it based off of, of my needs specifically there. But I will say that, just from a purely digestive health standpoint, it seems like the lower my vegetable matter intake including fruit, the better my digestion is.

Right thing is, is that I start getting so bored that, I'm able to hang myself with piano wire. And so it's like just eating, eating a damn apple is pretty, pretty nice when all you've been eating is like like meat and fish and stuff like that.

So, I do personally reach a point where just the boredom and I love a steak, I love seafood, I love all that type of stuff. But man, just having an orange, just having an apple like it ends up being like, the best dessert you've ever had.

Because I've only been doing all this, like, protein, protein and fat. And then I actually get some something sweet, like, legitimately sweet, like a good, you know, in-season orange or kiwi or an apple or something like that.

Living in Montana, like when berries season comes in, it's absolutely incredible. So, you know, for me, it's, it's a little bit just like, psychological.

The variety piece that I need as much as anything else. And one last note about all this in your particular personal diet before we get into restrictions is I also hear, you know, when it comes to this kind of protein focused diet, people that are trying to train, you're like, well, I hit a cap.

I can't build muscle. I can't get strength. You know, I need my carbs in heavy doses. Meanwhile, you're deadlifting 565 pounds and your bench pressing nearly 350.

So what's going on there? Because you hear this from personal trainers that you need to have this much, and it's usually a lot, right? So why why the sort of disparity between what they're saying and your outcome.

Yeah, it's all my powerlifting numbers are from a good several several years ago when I was doing more powerlifting. But I eat low carb then I'll, I'll be honest, if somebody is really trying to max out muscle gain, I don't think like a ketogenic diet is, is ultimately going to be based on that.

But I also don't know that a low carb diet is is going to be even 10% less effective. But I mean, when people are trying to let's say your, you're a stud high school athlete and you could get, a college scholarship, and that college scholarship could maybe, lead you to professional athletics and you could, you know, have a 7 or 8 figure, income.

A couple of percentage points can can add up to a big deal, you know, in, in gym performance and, on the field performance. But all of that said, I mean, just be as simple by line, like this meat and fruit approach.

You could eat a good amount of protein, and then you could get two, three, 400g of carbs from grapes and bananas and mangoes. And it I mean, the the the more and you would get far more nutrition than you would from like, you know, like rice or bread or something like that.

But that said, for a really insulin insensitive, good gut health person, if you handle rice and yams and sweet potatoes, like, I kick your heels up, like, do do whatever you want to do with that.

But there are plenty of examples of people building really impressive physiques, competing at a very high level at lower carb intakes. And also low carb is is super relative.

Like, I've seen folks within the CrossFit scene, you know, they were eating, say, 600g of carbs a day, but they start getting actually some metabolic issues from that.

But then we'll get them just eating about 200g of carbs a day, which is a third. It's 300% less than what they were eating. It's still higher than what somebody on the standard ketogenic diet is eating, but because of their physical activity, this person is still technically in ketosis. Most of the time.

They still have like a 1.5 to a 1.

Fasting, Caloric Restriction, and Longevity Debate

0 blood ketone level, just basically because they're lean, metabolically flexible, and their physical activity is super high. So, you know, the the what constitutes a high carb versus a low carb scenario is super situationally specific.

You know, for a a rather sedentary computer programmer, low carb is going to mean probably fewer than 50g of carbs a day. For, jujitsu practitioner or a CrossFit gamer, low carb, maybe 200g of carbs per day like that.

Maybe half or a third of the carbs they would have normally eaten, and they feel better because they don't. They

end up with the blood glucose, roller coasters and all that type of stuff that they had from the on air carb intake.

Yeah. So it's very personalization is key. And we now have the tools. It used to be tricky to even understand that stuff. But you know, work with people like yourself and others are bringing that to the forefront.

Now I will dive into longevity. And a lot of what you hear these days when it comes to diet, is fasting, fasting, fasting, right. So you have some thoughts on caloric restriction.

Very specific thought. So maybe we start there and we'll, you have a term that you refer to a CR and what does that mean and why do we need to. Yeah. So that's out of the academic literature.

Qur'an. Caloric restriction, adequate nutrition. I think that now they, mainly just go, calorie restriction, but the first article I wrote on, fasting was in 2005, and it was released to mainly a CrossFit oriented crowd.

And by 2006, I just terribly regretted releasing this thing, because these folks are already Type-A. They're already training, like, right at the edge of human performance.

And what I was recommending in there was just a very modest like, you know, like, 16 eight kind of kind of schedule. But these folks would look at it and they'd say, well, it's 16 hours of fasting is good.

Then 22 hours of fasting has got to be better. And, you know, if, if, I read a story about a guy that lost 100 pounds on a ketogenic diet, I only want to lose 5 pounds, so I'll keto even harder than that person.

And so I, I did a talk right at the beginning of, of Covid, and you might poke around on this and maybe stick it in the show notes. It's called longevity.

Are we trying too hard? Right. And in that, I really get in and look at what the claims are around fasting, calorie restriction and all this type of stuff.

And, you know, looking at autophagy and mitigating mTOR and IgG4 and all that and in the minority currently, but I'm seeing more and more people shifting this way.

I think it's all bullshit. I and I think that people have so misplaced what, what things they're comparing their the literature that looks at the benefits of fasting and calorie restriction in animal models.

It's always looking at animals that tend to overeat in a lab setting, like a program basically to overeat. And so we are always and it's understood that these animals overeat, like even in certain cancer research, they have to modify the standard diet of the animals because the animals will die of cardiovascular disease before they develop cancer.

If you feed them the wrong way. So, you know, type two diabetes, so they have to feed them in a different way to keep them alive long enough to see the effects of cancer.

The these animals are fed such a poor diet generally and are so prone to all these issues, but what they generally find is that different types of dietary restriction, whether it's protein restriction, total calorie restriction, in some cases glucose restriction, slows the rate of aging.

It, confers some metabolic benefits. It seems to reduce the incidence of different types of cancer and, say, neurodegenerative disease and whatnot. But what they're not doing is comparing the the calorie restricted group with a thinner, typically optimized group.

And what I, what I mean by that is if we're going to look at mice, do we look at a sick lab chow mice as the control or should it be a wild type mice mouse that is eating a species appropriate diet and living in a cognitively enriched environment with the appropriate community interaction and whatnot?

And what do we see then? And there haven't been a ton of studies looking at calorie restriction. Well, feeding an

organism, it's species appropriate diet.

But the little bit that has been done, there's only a few studies that do that. But if if you've fed the A mice a hunter gatherer type diet equivalent for a mouse, you know, nuts and seeds and, beetles and whatnot, if you calorie restrict them in that scenario, they end up dying young.

They you don't see the longevity, benefits. And it's because they, they end up just kind of chronically underfed. So I really think that the bulk of the longevity research is asking kind of the wrong question or making the wrong comparison.

They're not comparing for humans for for this idea about calorie restriction for me, or intermittent fasting to really have any significant, they should be looking at folks who are metabolically healthy, lean, fit, inactive.

That should be your benchmark, not somebody who is metabolically unhealthy, overweight, overeating, and all the rest of that. And I'm just not convinced at all that, significant calorie restriction or intermittent fasting is going to provide any, any benefit above and beyond just simply being healthy and exercising in virtually every single adaptation that we see, from fasting and from calorie restriction is identical to the adaptations that we get from exercise.

We tend to see mitochondrial biogenesis. We tend to see some some angiogenesis of blood vessels, release a Bdnf brain derived neurotrophic factor, some upregulation of ketone bodies and whatnot.

Like you, you could make kind of an interesting list, compare and contrast. These are all the supposed benefits of of calorie restriction and intermittent fasting.

These are all known and understood benefits of, exercise. And they're virtually identical. The main difference being that when we exercise we actually get fitter.

Like we, you know, we can perform more more exercise later. Whereas the, the, relative adaptations that we see with regards to intermittent fasting and counter restriction, it doesn't it may confer a performance benefit because we're a little bit lighter, we're not heavy or whatnot.

The main benefit that I see around fasting is just that it is a tool for people to get some handle on their total calorie intake and, can, can simplify your life.

You know, there was a I, I'm an old fart now we're getting there. And I remember there was a period of time when, when folks, suggested eating like, six meals a day, like, like the Barry Sears kind of zone period of time.

And, that was madness. Like, all you did was eat and snack all day long. And we also found that it wasn't particularly good for our metabolic health, like having some downtime for a digestive tract to recover is is really good.

So it at a minimum, what I find with fasting is that people may find that eating a meal or two or maybe, you know, two meals in a snack, they're great with that.

Like they don't have to do three meals, but they also don't have to do six meals a day. Like if it just simplifies your life, but everything else is the same, then, then that's kind of a a net win. So, yeah, I'm not sure if you want to dig dig more into like, mTOR or growth factors, you know, cancer and all that.

But I don't think that there's any type of magic awaiting us in, general calorie restriction or intermittent fasting that anything different other than if we just figure out a strategy to not wantonly overeat like an overfed organism is going to have higher rates of all of these chronic degenerative diseases.

And so, you know, if we move away from the overfed state, then I think that we're going to get significant benefit regardless of what that strategy is.

Well, the people that tell, you know, intermittent fasting and there's a lot of them right now are talking about both ends. They're saying you can get the right amount of calories.

It's a way to restrict total caloric intake, but it also gives you time to be in a state of, like you said, mTOR and growth hormone. And so what you're suggesting is you can get that from exercise anyway and also not abuse your body, I guess, by not getting enough, nutrition.

Yeah. And I mean it again, it's kind of whatever is going to work for the individual. Like if people just like intermittent fasting that that's great.

If it works for the lifestyle, that's phenomenal. But there were just a couple of pretty well done clinical interventions in humans looking at intermittent fasting versus like basic, stepped back calorie restriction.

And there was there was no benefit to the to the fasting protocol. Autophagy was not dramatically enhanced. Inter signaling wasn't significant altered relative to the, to the baseline.

And again, we know. There's we know for sure that just simply doing a couple of times a week of, zone two cardio training seems to confer like a 3 to 5 year longevity benefit.

Like it's shocking. It's really amazing. We don't have enough data to to suggest that there's similar benefits with strength training. And there may not be overall like the huge benefit of longevity with strength training that we see with, say aerobic training.

But your quality of life, I think is almost certainly improved. You know, like the likelihood of staying out of a rest home and maintaining muscle mass and all that type of stuff.

So like the quality, the health span is better improve. We have great data on that stuff. Where is this? On the fasting side of all this? It's super speculative.

And again, so long as people are looking, feeling performing good, like we're not seeing retrograde performance. Like if you have ten pull ups today, but you've been fasting and now you have eight and then seven and then six, I think we're going in completely the wrong direction.

You know, I think we're we're undermining some really important, performance benchmarks. There. But above and beyond that, I just, so here's an interesting aside.

There's great data that suggests that getting appropriate sunlight on our skin, like like you don't have to get burned. You don't need to turn yourself into a leather handbag, but just getting sunlight to optimize vitamin D levels and all the other things that come along with sunlight exposure, including the near infrared light exposure that's good for mitochondrial health and whatnot.

The difference between a person who get adequate sunlight and inadequate sunlight, the difference in their health is as significant as a packet, a smoker and a nonsmoker.

Wow. So we know that just getting adequate sunlight is as beneficial for health as not being a pack of a smoker compared to, you know, the smoker. So these are things that are just easy to do to improve our lives today.

That's another piece of of all this stuff that if you left some weights, do some junk to cardio, maybe do something like, a little bit of, of gymnastics or jujitsu, you know, something that challenges you cognitively and also with your, your movement.

That definitely improves our lives today. And it's highly likely to improve our lives, you know, decades in the future. Whereas so much of this fasting and I've seen people that were fasting at such a clip that they had lost significant muscle mass, like they didn't look like they could fight for their lives very well, like they they were pretty, pretty rough shape.

So they're hoping that they're going to live really well in some long off moment, whereas right now their lives are compromised, compromised like they're not.

Living is as optimized to life as they could now. So I know that's a lot of rambling. No. It's stuff that's this talk that I did, I had, I think 140 slides in it.

It's super technical. I get into amateur and IGF and the difference between like inter complex one versus inter complex to their interface and like cancer propagation and whatnot.

And I jam through this whole thing in an hour like it is. Wow. Yes. Yeah it's it's pretty epic. It's a it's a good talk and I cover a lot of material and I've seen some people like Peter Attia, Rhonda Patrick, who were really big fans of fasting.

I've seen them really pumped the brakes on the fervor that they've had with it. You know, like Peter has trimmed radically reduced the amount of fasting that he does.

And here's something that I haven't seen anybody else but myself talk about with this, there's this concept called the Hayflick limit, which in, eukaryotic cells, complex cells, you know, most complex life forms are all complex life forms are eukaryotes.

We have about 50 replications of our cells before the telomeres, the little, right. Organizing molecules at the end of our chromosomes. Once those telomeres are gone, then the chromosomes kind of break down.

And that that cell has a high likelihood of becoming senescent or or dying or potentially becoming cancerous. Well, we don't want to just burn through all of these, these stem cells because once they're gone, they're gone.

So this is one of the problems of like irritants like asbestos or smoke. It kills tissue. So then our stem cells have to be used to replace that tissue.

Right. You don't want that to happen at a super fast rate. But at the same time you don't want senescent cells to sit, you know, to be around and for them to start causing problems because they, they're, super pro-inflammatory and it can cause all kinds of issues.

But the thing is, is that senescence isn't an on off switch. It's a spectrum. There's a whole spectrum of cellular processes that constitute what we would call senescence.

Zone 2 Cardio, Sunlight, and Exercise Benefits

Some of those processes are critical for normal functioning of an organism, and you don't necessarily want to interrupt that. But when we fast, when we really significantly fast an organism, if a cell has gone from kind of an early normal state into any part of the senescence spectrum, that senescent cell will go through wrap up ptosis, it will die and it will be cleared.

But the problem here is that cell could have been used for months or even years before it went through its full senescence cycle and needed to be removed.

But if we clear all these things out, we run out of stem cells and we will end up dying from multi-organ failure. And this stuff is super well established in the literature.

Like people are all fired up about fasting, but nobody talks about the reality that animals have been studied where they are very aggressively fasted, not fasted to the tune, that they are malnourished, but they're just exposed to a really significant fasting stress.

And what happens is these animals die remarkably young and they die from multi-organ systemic failure because they no longer have the stem cells to be able to repair the damage that they incur from just day to day life.

So even at that level, like there's, we have all these known benefits of exercise and sun exposure and learning new novel things like languages and musical instruments and stuff like that.

There's all these known upsides to two things. There's a ton of unknown around the fasting, and there's also some pretty well understood but not popular downsides that folks don't really talk about in this, stem cell depletion and Hayflick limit is one of these things that I've literally heard no one else talk about in the totality of, like, the health and wellness space.

You know, there's something you said in there about the zone two training and then you mentioned out and that maybe put two and two together where I heard him saying he advises his high end clients direct personal clients to do it 5 to 6 times a week.

And my thinking when I heard that was the oxidative stress, the abuse to the body. And you're saying two times a week, so who's right? So I'm saying is a baseline as a baseline.

Yeah. And you know, if you're not at least doing that I think it should be closer to 5 to 6 times a week. And the thing about the the zone two cardio is it's super low intensity and it's purely fat oxidation.

If you're doing it right and you're metabolically flexible, that's a whole interesting discussion there. Peter Beck ages ago, you know, 15 years ago when he would do his own two work, it was almost purely glycolytic.

It was almost purely glucose fueled because he was a metabolic disaster. You know, he was super insulin resistant and even his lowest intensity work was not fat fueled.

It was it was, glycogen fueled, glucose fueled. And when we get stuck in that glucose fueled pathway, that is where we get a massive amount of oxidative stress.

Now, it's not to say that we shouldn't do glycolytic work, but if we are chronically sick in a way that we cannot when we when we're in it. So one of the anti-inflammatory characteristics of a ketogenic diet or fasting for this matter, being in ketosis from fasting, is that we are avoiding the mitochondrial complex one pathway which is is glycogen, glycogen based and tends to be very pro oxidative in its kind of status.

So, you know, super hard competitive cardio, six days a week. Yeah, there's definitely problem with that. But that's two cardio is where you can these will breathe.

You might be a little bit challenged to carry a conversation with it, but it's very modest and peace. And it should be predominantly fat fueled, which is super comparatively low in it's oxidative stress, kind of kind of, situation.

And just for listeners, I don't know, just describes on to like, what does it look like? It would be this will depend a lot from person to person. Like I'm in reasonably good cardiovascular shape.

And so for me to to stay in zone to it's about, 100 heart rate is a good indicator. This is where, like, a chest strap, you know, something like that.

But usually being able to just kind of barely remain nasal breathing, right. While you're you're doing that physical activity is usually butting up against the, the outer edge of someone to cardio.

For me, it's about 140, 145 beats per minute in, I mean, reasonably good shape. And so, like, I need a treadmill that's set it like a, if I'm not wearing a weight vest, it's maybe set at a ten degree incline and I'm walking at like three, 3.5mph, like I'm, I'm humping.

I'm moving pretty quick and it's at a steep incline, and that'll get me right about, a, 140 to 148 beats per minute like some somewhere in that scene.

So, somebody who's less conditioned, maybe walking more or less on flat ground, you know, that that would get

them to that, that zone to cardio. And how long you doing that?

I mean, some days, only 20 minutes. Some days, 60 minutes. Really depends on what, what I've got going on. And I do just as an aside, at the end of most of those days, I try to do between 1 and 5.

Zone five, like Max effort one minute on three minute recovery, intervals at the end of it. And I stack it that way because the real goal of the zone two cardio should be enhancing fat oxidation as your primary fuel source and becoming very efficient with that.

If you do any type of interval work early, it will impede and hamper your ability to excess fat during that workout and do all that stuff. But if you do that at the end.

So basically do your low intensity cardio first, and then if you finish with kind of a cherry, you know, on the Sunday and some really hard intervals, like a minute, pretty much max effort, 3 to 4 minutes recovery repeating that between one to 1 to 5 times.

That's a pretty nice way to be very time efficient with your cardio. So for I mean, a lot of what you just covered in the last 20 minutes or so is really taking a lot of what people have heard and known and personalizing it to a degree that maybe they didn't know was possible.

Right. And all of a sudden it could be a lot more efficient in your outcomes. How do you what would you say to the person who's getting started? Where do they get ROI?

Where do they focus on if the intention is lifespan? I want to develop habits and activities around lifespan and health, right? Like through high quality.

Where do I start? What's what's going to give me my ROI? Oh man, that's a fascinating question. If I could go back in time, I would think I would find it fascinating to orient my whole career around being the sleep guy, not the food guy.

Right? Because the food always creates these pissing matches or, you know, paleo versus vegan and all that stuff. And I really think the greatest ROI of everything out there, it's improving sleep.

And if we every single thing that you do improved sleep quality, sleep duration. So it was kind of optimized. I think most people do far better at that, like eight, maybe even 8.5 hours.

Like lots of people think they do well with six. They don't like almost nobody. Nobody does. There's very, very few people that are really genetically wired to, to be optimized at that level.

But if we start from the kernel of let's optimize sleep, right, then we would look at diet and say, okay, well, what what dietary can I do that would improve sleep or normal blood sugar level really helps foster good sleep.

When we end up with blood sugar highs and blood sugar lows, that can occur throughout the day. And when we go to bed, we have a tendency to eat near bed time.

If we eat your bedtime, our metabolic rate doesn't really slow down the way it should so that we can enter a deep, restful state of sleep. So we don't produce the melatonin.

We don't produce the growth hormone. We don't get that kind of restful type of sleep earlier in the night and then later in the night, because we tend to be on these blood sugar rollercoasters, our blood sugar drops, which causes a cortisol release, which then wakes us up.

So, poor blood sugar control is screwing up our sleep. Like coming and going, just like left, right and center. So, it would really help to inform what we should do.

Dietary, lean. The kind of cool thing about it. You know, if we all agreed that sleep is, like, the most important thing to optimize. If you have gut issues with gluten, it's going to negatively affect your sleep.

If you don't do that well with carbohydrates, it's going to negatively affect your sleep. And so it becomes very agnostic as to what methodology you're doing.

It's like, well, it's it's fucking up your sleep. So we can't we can't, you know, we're we're not going to do that. And, and so it's, it's not the, the paleo guy or the keto guy or whatever.

It's like, well, the sleep expert said the too many carbohydrates is is influencing my sleep negatively. And so we've got to do that. It would encourage us to get out of the house early, to get as much sunlight on our skin as, as make sense and just be out in the outdoors environment because it sets up that circadian entrainment.

Sleep as the Highest-ROI Health Lever

Zone two, cardio helps to promote sound sleep. Strength training is just one of these great things that, you know, make us physically tired and with improved sleep.

And you can maybe argue it's not as important as all the benefits of just being more, more physically strong and having both muscle and and muscle mass and bone density.

But I think a great way to orient all of this stuff for optimized ROI is to think about how is any of this going to influence sleep and how can we improve sleep in a way that is is you usually going to get a little bit earlier sleeping for kind of a more optimized duration, which again, is probably much more close to 8.5 hours than it is that like 6 or 7 hours.

Did a lot of people like to think that they they get away with? And I think that that's just going to provide shocking return on investment. Like if, if people haven't done things like wear some blue blockers in the evening, do some blackout curtains on their windows, I'm taking a couple hundred bucks and installing dimmer switches throughout your house so that in the evening you can turn your lights down and getting the type of lights that, we'll, we'll go more into the orange spectrum instead of the blue spectrum.

Right. It's just shocking. Yeah. And your sleep quality is so much better. And a good friend of mine, Doctor Kirk Parsley, is a retired Navy Seal, and he's asleep. Expert.

He makes the point that when we're young, the reason why I'm young is that each time we go to bed, we go to bed. Some amount of damage that we've accrued from that day.

But then when we sleep, we repair that damage and then some. We become stronger from it. And aging is really this process of when we wake up in the morning, we're not quite as recovered and repaired as what we were the day before, right the day before, the day before we start accruing these, these kind of absorption, I gotta say, for myself, like, 50 years old, if I can sleep well, if I, if I had the opportunity to sleep pretty well, I have pretty damn good performance.

I motor along pretty well. I feel good. I but I definitely. And, you know, my daughter just got a puppy a couple of weeks ago, and we're crate training him and potty training him and everything, and I'm trying to pitch in and help on that, man.

You get a couple of days of, like, really suboptimal sleep, and it's like getting kicked where it doesn't feel good, you know? So I know we talked about a lot of other like food and related topics and it's kind of a, a, a hip switch to, to switch over to sleep.

But the, the sleep piece I think is where the rubber really hits the road. And if you could orient everything that you're doing to kind of optimize and improve sleep, I think you would be hard pressed to, to find any greater improvement off of just doing that.

The way you spoke of it, it kind of, makes me think of how we started this conversation, which is around the concept of ancestral diet. Like, let's do what we are wired to do, like our DNA is 200,000 years old.

We know that. We talked about this, all right, that what we're designed for is not our current reality. Right. And it's the same thing with sleep. There's ancestral sleep that the habits of people, which is get up, get out, move.

Sun exposure. There's no lights at night. There's a amber glow that from the fire that would have, you know, stimulated melatonin production. You know, there's no snacking at the pantry.

And looking at the fridge to wonder, is it ice cream or potato chips at night? Right. All of those habits we have are not our ancestral sleep habits, which, you know, if you're if you're going to understand, we already people listening already get this.

They're trying to find out what that ancestral diet is. But when it comes to sleep, we don't think of it that way. But the way you just laid it out kind of pokes its neck out like that's what you're supposed to do.

Or we already know in our minds we're not doing it right. So, yeah. And, you know, I just find the sleep topic. It's an interesting place to anchor things because other people will push back, particularly like Type-A hard charger like CEOs will push back on the yeah, the sleep piece.

But, you know, when somebody says, well, what diet should I eat? It's like you should eat in a way that optimizes your sleep. You're kind of disarmed to that.

Like you're you're you're not straight in paleo. You're not straight in vegan. And it it becomes very objective. Like for me, eating the carbohydrates that would come with a vegan diet, my sleep would be disturbed because I would be on this kind of carbohydrate rollercoaster.

Somebody else might do great on it, but it's so interesting. It's a way to really disarm a lot of the, the culture wars around everything from like food to fasting, you know, it's like, does fasting does your hrb improve and your sleep quality improve when you're doing intermittent fasting?

Yes or no. And it's like, yes, great. Keep doing it. If it's no, well, then we need to reevaluate that. Maybe we need to shift something around. Maybe we don't abandon it entirely.

But again, we just know that sleep is so powerful as a if we really want to talk about health and lifespan healthspan and lifespan sleep is it, you know, I mean it.

Yeah. We need to be physically active. Yes. We need to provide the molecular basis of life. You know, proper nutrition, that's all important stuff. But, sleep is kind of where it all gets synthesized together.

And so anything you can do that improves sleep is going to improve all the other outcomes. And so it's kind of a, an indirect way to sneak up on that stuff and kind of deal emotionally.

It it's like, well, my sleep is kind of optimized when I eat this low glycemic load diet. And I notice that eggs tend to cause some gut issues that also throw off my sleep.

And so, like, all this magic kind of happens by just focusing on the optimization of sleep. So one last thought then. Terrific. Thank you for your time, by the way.

This has been awesome. Sure. With all your talking about, there's a lot of nuance, kind of tracking and all this stuff, meaning that, because there's so much you could potentially do with you for someone to, to listen to this whole talk.

What are or are there are there tools you're using technology wise, like how do you round this out in terms of tracking, measuring? Are you even doing that?

Oh man I I'm not huge into that. And it could be because I was a biochemist in my past life and I just measured everything. So I, you know, I, I've really shifted more into the experiential mode.

It's interesting. Like Peter Attia mentioned that, he does far better dietary compliance when he has a CGM on a continuous glucose monitor because he just loves he's he's that kind of neurotic, an engineer mind.

And he knows, like this flat line of glucose is his goal and that's what he wants. And so, he says that he cheats more when he doesn't have a kg. And I, I take him at face value.

That's probably true. I found things like hrb to be interesting, but also kind of annoying, like, I would, I would have different HRV platforms that I would wear, and I would get ready for bed, and I've got all my blue blockers and later or low.

But I'm reading a book and I fall asleep and I sleep wonderfully. I've got a good sleep. I feel very rested, but my hrb platform would give me and it would say, you have sleep latency because it would interpret my time.

Reading the book. Is this long, abnormally long period of time before I fall asleep. So I'm like, well, shit, I'm not getting my my my cookie, my my is point, you know, my gold star.

Because this, this damn thing isn't interpreting that. Right. So then I started taking the like my aura ring off or my my move off and all that stuff and then put it back on before I fall asleep.

And then I'm like, well, this is bullshit. Like, I'm just like, I'm having to do this kind of weird song and dance around this stuff. You know? Personally, I just didn't find beyond a couple of months.

I didn't find it that helpful. Like, yeah. One thing that's been interesting is helping people to understand the need for adequate sodium and electrolytes.

People who are tracking they immediately see an improvement in their HRP score like it's just immediate and profound. They feel better, they perform better, and their hrb score goes up.

Tracking, HRV, and Where to Learn More

And it's just from making sure that folks are getting like five grams of sodium per day. And they're they're potassium, magnesium. And it's magic. So it is it is cool.

It is handy. But I've also found it to, like professional athletes, the coaches hide the hrb score from the professional athletes. They don't tell them what it is because their best day may their best day of of on on road performance.

Maybe on a day when the RV thing says their their dog shit that day and it's actually not. And so I think there's still a ton of interpretation that's necessary with them.

And sometimes, there was an interesting article that talked about how, people will people seldom rise to the expectations of a good score, but they almost always crumble, like if they're if their numbers aren't good, they're like, oh, I suck today, you know, and and it goes like that.

So yeah. Yeah, yeah. And it makes a lot of sense because one of the deep areas that we dove into when it came to genomic research and building the functional pathways that you describe is mood and behavior.

How does the brain actually work, what drives personality and behavior and compliance or interpretation? Perception is largely driven by the neurochemicals of your brain and how you're actually wired.

And you know, there are people for whom they need that catalyst, they need that right, that that goal. Right. And there's some people for whom the they're they're in tune with the experiential result, the outcome.

Right. And the, the process, isn't as important as the outcome or vice versa. Then there's like people who need structure, like some people that are, you know, kind of have a better relationship with dopamine.

And it's very easy for them to experience pleasure and reward, typically need more structure because they're not that driven towards reward, because it's just so easy to experience.

Right. All of a sudden, this is why you have this disparity or variability between, what a tracker means to you. So it sounds like just listening to you, the best usage is probably getting started.

Like how you on the first year or the first month, like when you're starting at ground zero, it's a great tool to create structure, to create compliance, to create a routine and develop habits.

But once the habits are in place, it might become annoying like it is to you because all of a sudden you're tracking things you don't need to track. So that's a great answer, which I haven't heard before, and it's really helpful and practical, right?

Like, let's get you started. But over time you're already at a certain zone like yourself where it's not needed anymore. Right. So yeah. So this is awesome information.

For people to learn, you know, about what you're saying, because we just like tip iceberg, you know, based on the knowledge you have or what you can teach versus what we had the time to talk about, that, 140 page slide presentation.

Is that accessible to people? Yeah. This is if, and we could, we could circle up after this and get get a link for your show notes. And folks can also search.

But if you just search Rob Wolfe longevity, you will find that hour, hour and a half long talk. I think it was a keto con that I was able to do it. It was.

I did it once at the Metabolic Health Summit and then once, online for keto con, before Covid, just, like, shut everything down. So this was like my 2019 going into 2020.

Okay. Yeah, yeah. And do you, work with people still or you're more I know, I know, you're authoring and you're out there globetrotting and helping. And so for someone that wants to learn more, what's the best option to go to your website or what do they do.

Yeah. Rubbles.com is a good, good place to start. I do a weekly podcast with my my wife and I and we do Q&A. So like people will have a question like many of the questions you answer today and they'll write those in.

And I do my my best job to try to try to put some context around it. Yeah, that's called the healthy Rebellion Radio. Very cool. Rob, this is awesome.

Really refreshing in terms of your unique perspective and hearing a different spin on some stuff that we hear the same thing over again, but it was really helpful.

Thank you for joining us. Huge honor. Thank you. For.