THE MODEL HEALTH SHOW

EPISODE 921

Use This 3 Step Process To Burn Fat FASTER

With Guest Ben Greenfield

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SHAWN STEVENSON: Today you're going to hear a formula for fat loss than you've probably never heard before. Not only is it highly effective, it's never been easier to put these three things into place, but the order of these three things matters, as well as the consistency. So you're gonna learn about all these details plus some insights about belly fat and how it be acting different than other fat on our bodies. So we're gonna learn some of the science about belly fat itself and this three step process to target belly fat and to improve our metabolic health. Overall, you're gonna be learning from one of the true pioneers in the online fitness space. He's well renowned for his science, science-backed approach. And also his high level of personal experimentation and self quantification.

He does these crazy, powerful experiments, figures things out, and then shares it with all of us, and so you're in for a real treat and we're gonna cover a lot of ground. We're gonna talk about a lot of amazing things with our very special guest today. Now, unlike some of my guests, my guest today is very at home, wherever he goes, all right. He came in, he knows the lay of the land. He started tinkering with the different snacks and supplements and things like that that we have for special guests. He went over, he knew right what to do. He was looking for some electrolytes.

He grabbed some, put 'em into his cup, but he had a new flavor he had never had of the electrolyte blends from LMNT. Many people are fans of the watermelon, the chocolate, the citrus, all those types of flavors. But he never had the mango chili, right. The Mango chili has a little kick to it, and so he assumed that might be prudent to do, to start a podcast, have a little spicy kick to it. So he is gonna mention during the episode, after he takes a drink and gets that spicy hit, got that spicy header. And so I'm saying all that to say that somebody like himself really does value performance and tuning into things that actually work. And for him, electrolytes are a no-brainer. But the electrolytes from LMNT are incredibly special.

There's no dodgy ingredients, no artificial colors, just the very best electrolytes in the ideal ratios based on hundreds of thousands of data points from real people. And in this conversation about fat loss, this cannot be overlooked. The mitochondria, your mitochondria, is where fat is actually burned. It's the internal stove. It's the combustion engine.

It's the endpoint for these fatty acids to actually get quote burned. The mitochondria are that endpoint, and the health and functionality of your mitochondria is critically important in how your body processes energy. And scientists have identified that these key nutrients in the form of electrolytes are especially important in the performance of your mitochondria.

Electrolytes are minerals that carry an electric charge, and the mineral sodium, potassium, and magnesium are especially important. The sodium potassium pump helps to power the environment around your mitochondria. Truly, your mitochondria cannot do what it does without this intelligent sodium potassium pump. Magnesium is literally required in order to make new mitochondria. Magnesium is used as an enzyme co-factor that enables your mitochondria to make copies of itself. So again, I cannot stress enough how important electrolytes are. Make sure that we are identifying and being proactive about getting plenty of electrolytes in our food.

But if you're looking to supplement your electrolytes to uplevel your performance, look no further than LMNT, go to drinkLMNT.com/model. That's drink LMNT.com/model right now and hook yourself up with the very best electrolyte blend in the world. And not only that, with every electrolyte purchase, they're also going to send you a free sample pack with all of their most popular flavors. So I highly encourage you to pop over there right now. Go to drinkLMNT.com/model. Take advantage. This is a staple in my household, something I always travel with, that we share with our guests, friends, family, our team, electrolytes, our critical to our performance, cognitive metabolic health and LMNT is the best. Head over there, check 'em out, drinkLMNT.com/model. And now let's get to the YouTube review of the week.

YOUTUBE REVIEW: Another YouTube review from at the City Stead Kitchen. Thank you Shawn, for continuing to put episodes out that are meaningful and make a difference.

SHAWN STEVENSON: Thank you so much for taking a moment to share your heart. That really does mean a lot. And this was over on the YouTube channel, so if you're not subscribed to the Model Health Show YouTube channel, definitely pop over there and check it out. Subscribe. We've got original content on YouTube. Amazing, amazing videos. And also on shows like this one, you get to sit in a studio with us.

And you get to see the studies and things like that, and just adds another element of interaction. And so it's really, really fun. And again, I appreciate you so much for sharing your voice, whether it's on Apple Podcasts, Spotify, YouTube, please take a moment and share a review, share your voice, and it really does mean a lot. Without further ado, let's get to our special guest and topic of the day. Ben Greenfield is a global leader in health, fitness, and human performance whose mission is to help others become boundless free from the constraints of time, energy, and knowledge. Ben is a New York Times bestselling author, and his work reaches millions of people every month through a powerful combination of podcasting, writing, speaking, and coaching. And he's here today to share some game changing insights on burning belly fat. Let's dive in this conversation with the one and only Ben Greenfield. Sound, cameras. I knew to wear these pants, so they told me they got pockets.

BEN GREENFIELD: I wore mine.

SHAWN STEVENSON: Yeah.

BEN GREENFIELD: Bought these in Nepal. They say North face on them, but because I got them from a little tent shack on the side street in Nepal, I kind of doubt they're North Face.

SHAWN STEVENSON: They may be south face.

BEN GREENFIELD: They were about $4 USD. Yeah, probably South face.

SHAWN STEVENSON: South haircut.

BEN GREENFIELD: Yeah. Yeah.

SHAWN STEVENSON: You know, but it's all good, man. Well, I wanna start off, and you don't know what I'm gonna ask you about.

BEN GREENFIELD: I don't know what you're gonna ask me.

SHAWN STEVENSON: But I'm gonna ask you about some things, man. But I'm gonna start off with the biggest question in health and fitness today. As superficial as it might be, the biggest question that people have is how to get rid of belly fat.

BEN GREENFIELD: It's true. Yeah. Maybe true. I think. I think probably, yeah, in the fitness world, I wouldn't necessarily say the health world per se, but yeah, the fitness world for sure. Body composition is a big one.

SHAWN STEVENSON: Now.

BEN GREENFIELD: Are you, are you actually asking me that, like how to get rid of, of belly fat.

SHAWN STEVENSON: Because I have you here.

BEN GREENFIELD: For a friend.

SHAWN STEVENSON: Yes. But because I have you here and to say that you are an icon in this business is an understatement and you know, a thing or 20 about, this is something you figure out a long time ago. You've been people telling people for a long time, but I'm gonna ask you here today. How do we get rid of belly fat?

BEN GREENFIELD: Well, It's not by eliminating artificial sweeteners and food dyes from our nutrition and, and that's like kind of like a little bit of a pet peeve of mine right now. I really like what Maha is doing as far as raising awareness about healthy consumer choices and maybe making things available for sale food stamp purchases or whatever that, that aren't all unhealthy ultra processed foods. But at the same time, I think from a general health standpoint and body fat would fall into this category. There's bigger fish to fry than a Sparta, me or red food dye compared to moving more and eating less. Those are just the staples. Like at the end of the day even, there's all the controversy about calories in, calories out and the different hormonal responses of the body to kale versus Oreos.

You know, if they're, if they're in isocaloric amounts at the end of the day, like how many calories that you eat and how many calories that you burn are the two, two factors that

trump just about everything. So how that relates to belly fat is the number one component is to just be aware of your calorie consumption and move more. It's one thing to say that it's another thing to actually do that. That's why I'm a big fan of step trackers to motivate you to take say 15,000 steps a day. Calorie trackers actually start getting awareness of what you're eating. Not that that's something you do your whole life. 'Cause I think it kind of sucks a little bit of the enjoyment out of eating and just constantly be writing it down or these days taking a photo, but some element of awareness in those two categories.

Let's say that you've gotten all that taken care of, though there are things that you can do to move the dial a little bit more. What I am about to describe to you that I will give to like a Hollywood actor getting ready for a movie role, who needs to cut up to an executive who comes to me, who's got 30 pounds to lose, doesn't have like long-term human clinical, peer reviewed research behind it. But this is one of the best ways I've found to get fat off the body quickly. And the way it works is, and I actually call this in the book, the strike Stroll, shiver Strategy, strike Stroll, shiver. You wake up in the morning, preferably in an overnight fasted state.

Now, overnight, fasted state is gonna be a little bit different between men and women. Women premenopausal women, specifically from a hormonal standpoint and a fertility standpoint. Whether or not they want to have babies for fertility is something that's, that's correlated with generally good health. Do better on slightly shorter fasts, like 10 to 12 hours of fasting versus on a regular basis, like a daily basis. Versus men who seem to respond better to about a 12 to 16 hour intermittent fast. So the idea is that you finish dinner and you're just not stuffing your face with extra calories, not an extra handful of dark chocolate almonds from Trader Joe's. Not an extra bite of ice cream, not finishing your kids' plate later on when it's still on the counter at 9:00 PM Just basically having that time of night when you actually stop eating and you're not gonna eat again until that period of time has passed and arrived in the morning.

For some people, that means you're done eating at 8:30 PM like, that's me. I have a family. We love our big, glorious family dinners. They're super fun. But I know that how late we as a family is not ideal for circadian biology. Meaning that if you can finish eating like three hours

before bedtime or more, it's a little bit better for sleep. I don't think you gotta go the. Brian Johnson root and have your last meal at 11:00 AM or whatever. But either way, you finish eating, you go into that fasted period, you wake up having not eaten, and then the strike part means that you put something into your body that's going to shift it into a higher state of fatty acid oxidation.

The two perfect examples of that would be like EEC GC from green tea or caffeine from a cup of coffee, not an orange mocha frappuccino, but or even like a lot of cream or coconut cream or whatever in your coffee. Just like a black cup of coffee, regular cup of green tea, just to spark a little bit of extra metabolism. So you're shifting the body into a higher state of fatty acid oxidation doing that. And then the stroll part indicates that you're going for about 20 to 40 minutes at a low intensity, what we might call a zone two easy aerobic conversational pace. After you've had your cup of coffee, this could be taking the dog for a walk.

It could be going for an easy swim in, in your pool, it could be a yoga class, it could be, you know, riding a bike. Just anything super easy. The magic is not necessarily that when you're working out at an easier pace, you're burning a higher percentage of fat, which is true. You are burning a higher percentage of fat. What people leave out is you're actually burning a lower number of calories. So overall, you know, if you're working out harder, lifting weights, doing high intensity interval training, you are gonna burn more calories and overall you're gonna burn more fat. But the reason that the low intensity morning exercise works is you're gonna do it.

There's not a lot of people who are not just gonna take the dog for a walk after a cup of coffee in the morning, 365 days a year. Versus if I say I go to the gym and you gotta do a, like some kind of a hit session till there's smoke coming out your ears, and then you gotta lift weights and do burpees. People are gonna do that maybe three days of the week, four days of the week, stop for a week, come back, keep falling off the bandwagon. So the stroll part comes second. And then the last part is basically the part where you are inducing insulin sensitivity, lowering blood glucose, and helping to convert metabolically inactive white adipose tissue into metabolically active brown fat, and that would be the cold piece.

This could be literally coming back from your walk, walking into the shower. And if you gotta ease yourself into it by starting with hot water and then gradually going to cold water, that's one option. Or if you just want that instant wake me up and the coffee hasn't kicked in yet, you just start with full cold. It could be if you have one of the newer fancy cold plunges or ice baths jumping into something like that, it could be jumping into a lake or river, or an ocean. I mean, around here in California, this could even be literally just like walking to the ocean if you're near it, jumping in and walking back home.

And that counts as the cold component. So what you're doing, if you step back and look at this big picture is you're starting off by shifting the body in the fat oxidation with caffeine or green tea. Then you are moving at an aerobic pace that helps to mobilize fat when you don't have extra calories on board to burn before your body turns to its own fat tissue. And then you're doing cold is kind of like the pun intended icing on the cake to just basically shift yourself into a little bit more fat burning. Now that's something that if you do it consistently, and I use this with just about every client I have who's whose number one goal is fat loss. It moves the dial pretty considerably, and there there's some other things. That's mango chili LMNT, by the way, kind of tastes like Gatorade with hot sauce in it. That's a new flavor for me.

SHAWN STEVENSON: Little spice.

BEN GREENFIELD: New flavor. Little kick. There's, there's, there's other things that are important, but that would be like how you kind of consider the start of your day. The other things to bear in mind for fat loss, one would be empty calories. I think alcohol is a perfect example. I am not opposed to alcohol. I think you could actually make a case for the longevity enhancing benefits of alcohol. Meaning when you drink small amounts in moderation, you can actually spark a little bit of what's called an endogenous antioxidant response. Your body starts to churn out things like glutathione and superoxide dismutase and some of these things that are probably factors.

In the equation of many of these blue zones or longevity hotspots, having some element of like a bitter alcohol or, or red wine as like a nightly habit. At the same time, alcohol at seven calories per gram is not very nutrient dense. You're not getting a lot of protein or satiating fat

from it. You're getting some carbohydrates and in many people it can also be a little bit of an appetite stimulant. So I encourage people who, who, whose number one goal is fat loss and they're not interested in the longevity benefits of alcohol, which are minimal, but there to just cut alcohol. And of course we now, we have so many alcohol alternatives. There's, I was at dinner last night and there must have been like 14 different mocktails on the menu.

It seems trendy now to, to be able to, to get access pretty easily to, to alcohol free beverages. Second one would be added sugar. That one's kind of a no brainer, just because of the fact that when you are consuming added sugar on a regular basis, you're seeing blood glucose spikes throughout the day, which is basically what's called glycemic variability. High glycemic variability. High glycemic variability can induce gradual long-term insulin resistance. Insulin resistance can impair the body's ability to mobilize fatty acids from fat tissue. So it's true that sugars do have the ability to increase triglycerides, serve as an energy source that your body might turn to instead of its own fat tissue.

But I think the biggest problem with the added sugars is the long-term impact on insulin resistance, which is gonna have that mild suppression of fat oxidation. So no alcohol, no sugars. And when you put all this together, you basically got a morning habit. You are watching the calories that you eat, you're moving actively as much as possible, watching alcohol, watching sugar, and you know, when you look at all the different fat loss peptides and supplements and metabolic boosters, yeah, there, there's other things out there. But those would be like the baseline things that just about anybody could do. G LPs kind of are something that always come up though. Now when, when you know you're having the fat loss discussion, I don't know if you've talked about those on the show before. I mean, I've got you here, so we're gonna talk about some more.

SHAWN STEVENSON: Okay.

BEN GREENFIELD: So here's my take on on GLP. Once, um, you know, your body will make glucagon like peptide in response to a meal to produce a little bit of a satiating effect. It'll produce more of it if you eat slowly, if you eat mindfully, and if you chew your food 25 to 40 times. Like there are ways to increase your body's own satiety, but some people just have

raging appetites or some people have developed hormonal imbalances with hormones like leptin, for example, or insulin would be another example that impair their ability to be able to respond to hunger cues adequately. The idea behind a GLP agonist a peptide is that you are in injecting something. That is going to increase those GLP levels for days. Like if I eat a meal or even if I take one of these, you know, supposed herbs that increases GLP. You know, there are probiotics like Akkermansia that can do it. They're very bitter compounds.

Serrate is an example of one that you'll find in some ingredients these days. Those will do it for a few hours. So we're talking about the big guns, the actual injectable peptides, doing it for days versus some of the natural lifestyle habits, doing it for hours. And when you're suppressing appetite for days, it can be a lot easier to address the don't eat as many calories component of fat loss. The unfortunate side effect of going to a doctor and getting a prescription for A GLP agonist, you know, ozempic, will govi or tirzepatide, Reddit, tru Tide, any of these peptides, is that when they do the prescription, it comes in a standard dose and the standard dose is high enough to have a lot of different side effects.

Nausea, gastrointestinal disturbances, constipation, because one of the things that it does is it slows peristalsis, right? So you're just moving stuff through the digestive tract, you know, and then people will be like, oh, let's take more cilium husk, and, you know, and trla, you know, all these different, you know, herbal compounds and that can cause even further gastric distress. So, you know, as you're trying to just push stuff through. And the other problem is that the amount of nausea and the amount of complete distaste for just about any food can be almost debilitating emotionally and physically. You do see reports of depression and even suicidal tendencies in people who are on these standard dosages of GLP agonists.

And I think one reason for that is that we as human beings have a dopaminergic response to food. Food is something we can gather around with people and, you know, and, and enjoy, you know, in moderation. And when you just cut that off. I think there is a little, little part of what it means to be a human missing. Like we live on this planet with like hundreds and thousands of different flavors and varieties and colors and fruits and vegetables and animals. We can eat if that's your thing and we just remove all of that, I think it does have an impact psychologically. And then the other thing is physically when you don't want to eat, it's one

thing to hear someone say, oh, if you're gonna take a weight loss peptide, you gotta remember to eat your protein, bro, so you don't lose muscle and you gotta hit the gym so you don't lose muscle, which makes sense.

That's good advice. The problem is when you sit down to like your whey protein shake or your ribeye steak or whatever it is that you're consuming to get more protein and you literally want to throw up when it's sitting there in front of you. Like you could tell me to eat protein till you're blue in the face, but I'm just like, I'm not gonna do it. And then let's say I go to the gym. Because I heard I was supposed to lift weights if I'm on one of these fat loss GLP agonists, well, you feel totally flat in the gym because you're not eating enough calories, so you're trying to lift weights and you're trying to exercise and trying to do what your doctor told you to do, but you feel like crap at the gym.

I mean, I don't know if you've ever tried to exercise really hard when you've been really cutting calories, maybe during a fast, you know, going and trying to hit the weights hard and do enough to maintain muscle or build muscle. It's hard. Yeah. Like you could, you know, if, if you were a real gym rat with a big history of exercise, like you, you, you kind of know how to push through. But the average person has a really hard time lifting weights in a manner that builds muscle while at the same time extremely calorically deprived. So that's where I think working with a doctor who has access to a compounding pharmacy who can get you a dose of a GLP agonist, that's much, much smaller is a good alternative.

Meaning a standard dose of one of the new sexier agonists that triggers three different satiety inducing mechanisms. Ghrelin, GIP, and GLP1 is called red aide. It's a triple agonist, so it's targeting even more than GLP. Very powerful. Standard dose is two and a half milligrams. You can take like one 10th of that, you can take like 250 micrograms of that has mild appetite, suppression effects, you still can eat, but it's more like you walk past a slice of cheesecake and you're like, yeah, I can leave it. I'm fine. But you don't sit down to, you know, let's say meat and potatoes with your family at night and just not want to eat anything at all.

The other interesting thing is peptides like that now are in research showing an effect on fighting neural inflammation, improving insulin sensitivity, lowering lipids, or at least

balancing lipids. So they seem to have these so-called pleiotropic or system-wide effects that can be kind of beneficial. So when it comes to using something like a GLP peptide for fat loss, I think it fits into the equation. If you've got access to a doctor who's willing to prescribe you a dose via a compounding pharmacist, that's much less than what a standard dose would be. And I think if you can do that, that's actually one of the most effective, kind of more advanced options for fat loss that are out there now.

SHAWN STEVENSON: That's phenomenal. Thank you for sharing. That's one of the most balanced perspectives about this that I've heard. And you know what's so interesting is this happened so fast. It happened so fast.

BEN GREENFIELD: Yeah.

SHAWN STEVENSON: In 2019.

BEN GREENFIELD: It's kinda like ai. It's just like, whoa.

SHAWN STEVENSON: Yeah, it's just like here. It's out here heavy. But in 2019, I wrote Eat Smarter, and I went into all these different hunger satiety hormones, just like really detailing them and how they're activated. Certain foods that tend to activate them a little bit more lifestyle practices. So I talked about GLP1, 2019. I talked about adiponectin, I talked about obviously ghrelin, leptin, the more popular ones. But I knew that it wasn't just gonna be GLP one. I knew that. As soon as I saw this wave happen, I was like, oh, they're gonna target these other things too.

BEN GREENFIELD: Yeah.

SHAWN STEVENSON: And sure enough, and they're not done yet. And also.

BEN GREENFIELD: Apparently there's like a quintuple agist.

SHAWN STEVENSON: And also food manufacturers that are taking a hit because people aren't buying their shit as often.

BEN GREENFIELD: Yeah.

SHAWN STEVENSON: They're working behind the scenes with their scientists to try to find workarounds for these different hyper.

BEN GREENFIELD: Hyper palatability.

SHAWN STEVENSON: Right. Exactly.

BEN GREENFIELD: Just trying to, or you achieve that.

SHAWN STEVENSON: It's, it's just chemistry. You know? And so it's more important than ever to be mindful of the, and, and we say this all the time, but the lifestyle practices around any of these implements, because you started off the episode sharing, it's still a matter of looking. The amount that we're taking in and the amount that we're expending. It's such a big part of this, of our life overall. And so one of the things we talked about, I gotta ask you more about this because I'll share with everybody why specifically, but you mentioned glycemic variability, right? And you talked about, you know, obviously we are kind of inundated with sugar and kind of higher glycemic foods in our society.

BEN GREENFIELD: Yeah.

SHAWN STEVENSON: With that said, there are also healthy foods where we'd be considered to be healthy foods that can cause some drastic changes in our own glycemic variability that might be perfect for somebody else. And one of the things that I saw you have on, you have on A CGM from levels.

BEN GREENFIELD: Yeah.

SHAWN STEVENSON: Shout out to levels.

BEN GREENFIELD: That's a Dexcom G seven.

SHAWN STEVENSON: And I'm curious, what can people gain from this? What are some, what are some of the insights and why is this so important? So important for us to be mindful again, in this metabolic health body fat equation to be mindful of this glycemic variability.

BEN GREENFIELD: Yeah. Well, first of all, just to get this out there, I've been, I've been wearing the Dexcom for four weeks and before that I was using a different, one called, called a A Libre, a Freestyle Libre. The only thing I've found about the Dexcom and I would be curious maybe in the comment section of your, of your show or whatever, how many other people are experiencing this is if I do, and I love to do this, like a really hot sauna session. It throws off my readings for like two days and a couple of times the sensor has failed. So business idea for somebody, like get some kinda like insulatory patch over this thing for, for those of us who like to hit the sauna hard. But the, you know, the interesting thing is that, that you're right, and this is probably almost 10 years ago, the study that I believe was done in Israel that showed that based on the balance of the gut bacteria, there are differing responses to carbohydrates in people.

And some people will have a blood glucose response to, in this case, in that study, I think they use bananas and cookies. And some people will not really have that high of what's called a postprandial post feeding glucose response to those foods. And other people will, and it, and it can be very individualized. Now when you look at a lot of other foods, probably some of those you, you might have been alluding to, like let's say sweet potatoes and yams and berries.

SHAWN STEVENSON: Rice.

BEN GREENFIELD: A lot of people don't know this, but yeah, you have rice, you know, quinoa, amaranth, millet, sourdough bread, and even some proteins, right? Like, proteins can be, little bit, what, what, what are called, uh, gluconeogenic foods, meaning that the proteins can actually cause a blood glucose increase as they're converted into glucose. This would be like steak ice cream, you know, whey protein smoothie, whatever. There's a lot of variation from person to person in terms of how they respond to those foods. That might not be a Coca-Cola

as far as like, you know, just pure added sugar or high fructose corn syrup, but that still have potential for causing these blood glucose spikes.

It's not as though those foods, because they're healthy foods that cause blood glucose spikes are not. Potentially going to cause some of the same issues with insulin insensitivity or, raging appetite as you get the hypoglycemia, the drop in blood glucose following the rise in blood glucose. That's where I think the idea of A-C-G-M-A continuous glucose monitor comes in really handy because you can start to know the foods that for you actually cause that and the lifestyle factors that cause it.

You know, I, I, anything in the bean legume category, which are supposed to be slow carbs, those spike my blood glucose. Those are just not great foods for me. Interestingly, I mean not, not to rabbit hole too much in many cases, it's not the carbs in foods like that that are causing the direct blood glucose response. It can be an autoimmune reaction to those foods, a white blood cell response to those foods that then causes a cortisol response that results in your liver dumping a bun, bunch of stress related glucose into the bloodstream. And this actually is interesting because I've done some of the more gold standard food allergy tests, namely one called a zoomer called a Cyrex, C-Y-R-E-X, several different beans and legumes flag high for me specifically is having a white blood cell reaction, like an autoimmune reaction to those foods.

So now it makes sense. Like it's not the slow carbs and the foods that are spiking the blood glucose, it's the fact that me genetically, I don't do like my body thinks it's fighting when I have those foods. So that's another important component. And you don't have to go off and do all these fancy immune tests and food allergy tests. You can just wear a blood glucose monitor and know, okay, well I don't know if it's autoimmune. I don't know if it's, it's the type of carbs in this food. I don't know if it's my microbiome.

All I know is this food is a blood sugar spiker for me, and it's one to avoid. And then similarly, you can get a lot of good data about what kind of things that you do from a lifestyle standpoint will control blood glucose. A lot of things people know about or, have been proven in literature for quite a while, like a pre-meal walk and or a post-meal walk. You know, it's

undeniable that's fantastic at controlling blood sugar. I will, I will purposefully park. Farther away from the restaurant, like a few blocks away from the restaurant. So I have to force myself to walk to the restaurant and then after I finish the meal, you know, I gotta walk four to six blocks back to the car to get that postprandial movement in.

Another example would be lifting weights and lifting weights. Doesn't have to be like an acute event that you do right before whatever. You're gonna take your wife on a date night and you know you're gonna punish half the bread bowl at the steakhouse or whatever. Lifting weights can be something that helps to control blood glucose no matter what time of day that you do it. It doesn't have to be right before you go eat a meal, because muscle serves as basically like a metabolic sink, like your muscles need to be full of glucose. So the way this works is that your muscles will absorb glucose to be able to fill themselves with the storage form of glucose glycogen.

Your liver will also absorb glucose to store glycogen in your liver. Depending on the size of the person, you know, you might get a couple of thousand calories of storage carbohydrate in your muscles. Anywhere between like 300 and 500 calories in the liver. And once all those are full, that's when the extra glucose starts to spill over into triglycerides and get converted into fat. If you have a decent amount of muscle because you're lifting weights, then you've just got a bigger metabolic sink to be able to soak up the glucose. So lifting weights is cool because you not only get that chronic long-term ability to be able to sponge up glucose more, but then you do get the short-term effects of yes, if you, if you do lift weight, its like an hour or two before a meal, you are gonna be more insulin sensitive to that meal.

So lifting weights even more than aerobic exercise, just because you burn more glucose and get rid of more glucose and create space for more is pretty high up there. Cold. I already mentioned as something that can help to control blood glucose. I personally, wearing the CGM have found nothing to be more powerful. Also more uncomfortable than, than doing something cold, especially timing that before I know I'm gonna go to a party or a great restaurant where they have my favorite carrot cake on the menu or, you know, or just like, you know, a multi-course, you know, fancy meal out with my wife. I will purposely go and do like a two to three minute cold plunge and, you know, then go get dressed and get in the car

and still be goosebump a little bit just because I know that there's, there's a pretty significant bulletproofing effect, at least for me, in terms of lowering the blood glucose response to the meal for really long time afterwards. Quick aside, because I, I've been hearing this more and more these days. Women are under the impression that cold is bad for females. Have you heard this? This is like the..

SHAWN STEVENSON: Of course.

BEN GREENFIELD: The latest thing. It's like women shouldn't do cold baths. The theory is that estrogen in progesterone in response to cold can cause more vasoconstriction. And when estrogen and progesterone are elevated, you also can see a higher cortisol response to the cold. All of that is, is actually true. If you actually look at studies in women versus men and cold exposure, for example, there's one study around 60 men and 60 women where they did cold exposure. And yes, the women had a different response to the men. They had a different adiponectin response, they had a different insulin response, different blood glucose response, different leptin response, and all of those responses were actually more favorable than what the men had. So from a metabolic standpoint, women actually responded more favorably to the cold.

Women also showed in a different study, a higher cortisol response. You know, just like a lot of the doctors and the experts are saying, are telling women not to, not to get cold. Higher cortisol response than men, for the first four weeks, but then when you follow it over time from the four to 12 week week mark in that study, cortisol stabilized and began to decrease long-term once they were done with the cold plunge. So there's almost like this stress resilience producing effect from long-term cold adaptations in women. It is true that if a woman is in the luteal phase of her cycle, where you see an increase in estrogen and progesterone, that there will be more vasoconstriction and more cortisol in response to getting cold.

But there's zero evidence that actually causes what a lot of women are being warned against. You're gonna gain fat. Your body's gonna go into like famine and starvation mode. You're gonna downregulate fertility, your body's gonna freak out. You're gonna be all

sympathetically stimulated. That's not actually true. My wife cold plunges, I cold plunge. You could certainly overdo it. A lot of people do like, well, I shouldn't say a lot of people do. There are a lot of studies showing that if you do like a 10 to 20 minute cold plunge, there's a pretty significant sympathetic nervous system response. As a matter of fact, there is, there is such a profound response to a long.

Sits in a cold plunge, which by the way, not many people are, there's not a lot of people that are going sit in a cold plunge for like 10 to 20 minutes. Most people are like, 1, 2, 3 minutes and I'm done. There's evidence that can suppress the response to exercise and inhibit your ability to build muscle or pum mitochondria. There's evidence that it can cause long-term hypercholesterolemia, more of a sympathetic nervous system response. But again, the devil's in the details we're talking about long cold sits, like 10 to 20 minutes.

SHAWN STEVENSON: Like Wim Hof.

BEN GREENFIELD: And so yeah, exactly.

SHAWN STEVENSON: Wim Hof, we were in a program together. Yeah. Wim Hof you me, I think it was Jairek Robbins. We all had a program together back in the day.

BEN GREENFIELD: Yeah, yeah, I remember that. That was good memory. So, so what I'm getting at is that. Cold plunging in moderation is fine for both men and women. And then back to the fat loss, blood glucose thing, it is one of the best things that you can do for blood glucose. So I cold plunge like two or three times a day. I got cold plunge just scattered all over the property just because I love hopping in that thing. Instead of having a cup of coffee, my wife's in there for two or three minutes. She does around 35 degrees Fahrenheit and gets out and feels great.

SHAWN STEVENSON: Amazing. Amazing. And a very accessible, simple way to track your body's response is through a cgm. Continuous glucose monitor. And again, my favorite is working with levels because of the tracking. I think that they're the best. The app is awesome. The team is amazing, the people behind it.

And if people want to get their hands on this data, access to CGMs, go to Levels.Link/model, that's L-E-V-E-L-S.link/model. And also we were talking before the show, they're now upleveling things where you're gonna get a free included with your membership. Number one, you're gonna get two free months with the annual membership, but you're getting now included 20 biometrics tracked that you can go and get an annual blood draw. It's gonna be included with your levels. Membership. And they have this really advanced AI to be able to tell you to get a beat on your biological age and all this stuff in particular with their expanded panel, their expanded panel, which is upgrade that you could pay for. There's over a hundred biometrics and it's put all in there.

And so when I got it done, tracked everything from testosterone levels to thyroid function, nutrient levels, variations with cholesterol, not just as standard L-D-L-H-D-L. But the truth is, and I wanna ask you about this because you know better than most, our blood work tells a story. It tells a story, it's, it has, it's lacking context. A lot of times when somebody gets their blood work back from a conventional, traditionally trained physician, unfortunately it's very superficial. This is what's going on with your cholesterol panel. And now we have so many more innovations and understanding. Like there are people that can have high LDL and never have any cardiac issues at all, as a matter of fact, be abundantly healthy because..

BEN GREENFIELD: Or have a pristine lipid panel. And then if they actually go in and get like a CT angiography, show blockage and plaque accumulation.

SHAWN STEVENSON: They've got epicardial fat, they are maybe, again, they have a cardiac event and they look healthy based on a superficial view of things. And so our blood work tells a story and getting information like this, it needs context. So are those numbers, you know, is that a threat for me personally? Based on all this other stuff? What does my triglycerides look like? What do these other hormones look like?

BEN GREENFIELD: Or when we're talking about levels, this is kind of cool. If you look at a company like that, I think Whoop is another example. Like they've got a bunch of people wearing these things, so they're able to aggregate big data over time. And I'm assuming this is probably one of the reasons that Leva wants to do this is. Now levels can go from, well

here's like 8,000 people for when whatever broccoli spike their blood sugar. We never would've expected that. But that's the data that we have now to, oh, look at this low vitamin D or low free testosterone, but not low total testosterone or high CRP. All of these correlate to blood glucose imbalances. So now, I don't know this for sure, but I'm assuming that they will be able to do this as they, as they pull in more and more of this data, they can then correlate biomarkers to risk for blood sugar imbalances.

SHAWN STEVENSON: Absolutely. Yeah.

BEN GREENFIELD: Showing things that, that we just never would've known before.

SHAWN STEVENSON: Yep. It's that accumulation of data with a lot of different people and you start to see the patterns. And still..

BEN GREENFIELD: And then they could sell that the pharmaceutical companies.

SHAWN STEVENSON: But still..

BEN GREENFIELD: I'm joking.

SHAWN STEVENSON: But still you can be an outlier. You might see all these great averages and know like, this gonna be a tendency for this food, this lifestyle activity to be great for me. The N of one is so important today. I've leaned into that so much. I've been one of the guys really impressing upon the health culture like we've got this data.

BEN GREENFIELD: Yeah.

SHAWN STEVENSON: Going through these studies and that's valuable, but it's also valuable to know the N of one. Which is the experimentation that you do for yourself because you're unique.

BEN GREENFIELD: Yeah. Yeah.

SHAWN STEVENSON: So something else unique about this conversation. We talked about the potential of quote, getting rid of belly fat. But we didn't talk about what it is and what makes it different. Right. There's some unique things about belly fat that I want to ask you about. So what is belly fat?

BEN GREENFIELD: No. Hopefully I know the answer. You might know better than me. White adipose tissue particularly is what most of the belly fat is comprised of, and that's gonna be a little bit less metabolically active if you look at a different type of fat, which I mentioned earlier that you make more of in response to the cold brown fat. It's actually metabolically active. It engages in something called mitochondrial uncoupling, which means that when you consume calories, brown fat can use those calories to produce heat, which kind of makes sense 'cause you do a lot of cold. Your body's like, oh, okay, so I need, I need to take calories and produce heat rather than producing ATP.

And when you're producing less ATP, it's a signal to the body to bump up the metabolic rate because you basically need to create more energy. So it's almost got this metabolic increasing heat producing effect, whereas white adipose tissue is more of a storage depot, right? And you can mobilize fats from white adipose tissue in addition to converting it into brown fat. But the issue with white adipose tissue is if it is in excess, it starts to do things like churn out inflammatory cytokines, creating almost like this vicious cycle of more insulin insensitivity. If you were to do one of these newer scans, like a DEXA for example, you can look at visceral fat accumulation, which is basically a lot of this tissue that's around organs, which is correlated with, you know, basically increased mortality from just about every chronic disease out there. So I would classify it as a less metabolically active storage depot than some of the other places in which we can keep energy producing compounds like say muscle or brown fat, for example.

SHAWN STEVENSON: Hmm. A little bit more sensitive to stress potentially.

BEN GREENFIELD: Yeah. Yep.

SHAWN STEVENSON: And less sensitive to mobilization and activity and getting rid of it.

BEN GREENFIELD: Right? Right, exactly. Which makes sense because you would want in a time of actual stress, not email stress in an era of hyper palatable foods that you're beck and call all the time, but like actual stress, like it's the dead of winter and the deer that we killed in the fall are all gone and it's like the 1800s or whatever. So your body all of a sudden has to downregulate metabolic raid and shut down some thyroid activity and begin to create these storage depots that are going to serve you for however long a period of time is gonna be until you get access to food again. That makes sense. It's all, it's, it's a little bit of like a, a hibernator scenario.

But in our day and age, it's pretty few and far between. Unless you're like a self-inflicted, like hyper fasted monk or something like that, that you're actually going to be in a scenario where you really, truly have to sock away fat, because I mean, maybe you're on the TV show alone or something like that. You're getting ready to go into an intense survival scenario. But for the most part, we don't really need to rely on survival storage mechanisms as much. You know, and, and it backfires too because if you are just filling those stores up over and over again, which is so easy to do these days. We rarely, in our day and age have a built-in mechanism to where you're gonna be getting rid of that because winter's coming and you know you're gonna be trekking across the plane with a musket over your back looking for an animal to kill.

It's like, no, in the winter you go out to TGI Fridays. You know, so, you know, different. Yeah. It, it's, it's almost like this blessing and curse of living in a modern era in which we have a little bit of an evolutionary mismatch between what our bodies grew to be capable of doing and what they don't need to do anymore. So it just requires more self-control. It's same reason you had to fabricate like boxes and rooms that we could go and pick up heavy stuff with. Right.

SHAWN STEVENSON: Right.

BEN GREENFIELD: Because we don't do that.

SHAWN STEVENSON: Don't do that. Yeah.

BEN GREENFIELD: For work anymore.

SHAWN STEVENSON: Yeah, it's, it's signaling. You know, it's just these environmental signals, these inputs and our bodies are gonna be a representation of the signals that we're giving it. Right. And so if we want to change our body and change certain things about our bodies, we have to these particular signals. Yeah. And it really comes down. I mean, it's pretty simple. Yeah. But nobody said it was easy.

BEN GREENFIELD: Yeah. I mean, it's like from the moment you're born, you're basically fighting entropy, right? You're, you're, you're fighting your, your body's desire to go into this chaotic state. And yeah, early on in life you're building bone density and muscle mass almost without even thinking about it, just based on the, on the hormonal surges and the growth of a young mammal. But you get to a point where, yeah, if you don't load a bone, it will become less dense. And if you don't load a muscle, it will atrophy. And if you don't load the heart, then its stroke volume will decrease. So we basically have to purposefully wake up in the morning and ask ourselves, okay, so what uncomfortable things can I do today to fight entropy?

And again, like back to our modern era, it's a little bit more difficult to engage in uncomfortable activities like thermal stress, like, you know, the cold that we were talking about, or you know, or you know, the heat, you know, such as the sauna that destroys the continuous glucose monitors. The, these are things that we kind of need to hunt down nowadays because we aren't like out in the dead of winter hunting and we aren't out in the middle of the summer, you know, with jeans and a long shirt on building a fence. You know, same thing with lack of access to food. Same thing with lifting heavy objects. So there's so many forms of discomfort that we almost have to intentionally seek out now in order to, in order to get health span or life.

SHAWN STEVENSON: Yeah. Our lives are more and more comfy and cozy and convenience.

BEN GREENFIELD: Yeah.

SHAWN STEVENSON: Yeah. Wait, comfy, cozy, convenience. That's a triple C versus the Triple S. You started off with, Strike title of your next role.

BEN GREENFIELD: Just alliteration. Strike Stroll.

SHAWN STEVENSON: Strike Stroll and shiver.

BEN GREENFIELD: Yeah, I mean, I was in the gym this morning and and people are like, oh, you're the fitness guy. Like of, of course you were in the gym. It must be easy if you just wake up and go to the gym. No, it still is hard every single day to roll outta bed and put the shoes on and get ready and get dressed and go down there and the first few minutes really suck and it still kind of hurts as you're doing it. And i'm not saying that your entire life needs to be masochistic, but if you're looking for health, there is a certain amount of discomfort that's necessary. And that's actually something that I think in the biohacking industry, the idea that you can hack the system and that there's shortcuts, that there's a little bit of that grit that's missing.

'Cause there, there's a huge problem in my industry right now, and I would, I was even just speaking on like a nutrition supplement conference, kinda the same thing. It's like, yeah, we just pop a pill and you know, you want to, you want to gain mass, you take peptides and amino acids and collagen and weigh protein and you wanna lose weight. You know, take, take these different, you know, thermal burning agents and appetite suppressing agents and you want to increase bone density, you know, just mainline minerals and bone broth and eat your way out of it. But it, you get to a certain point where you do actually have to experience a little bit of discomfort, you gotta be cold, you gotta be hot, you gotta be sweating, you gotta be like under load in the gym.

You gotta be sucking wind every now and again. And I think like people are always looking for like the fountain of youth, you know, way to pop your pill, and, and use that for life extension or health extension. And you know, it kind of comes back to my mentality about at the end of the day when it comes to fat loss, just like stuff your face less and move more. You know? And a lot of people do need to hear that in an era where it's like, no, I'm supposed to have, you know, a spart instead of sucralose and get rid of red food. No, you need to move more and eat less. Like that's, that's the number one, number one thing you need to do. It's very similar when it comes to this idea of discomfort. It's, you just, you can't pop a pill in pharmaceutical

your way out of discomfort. There is a certain amount of that that's necessary if you want to be a resilient, healthy human.

SHAWN STEVENSON: Yeah. Thank you for sharing that, man. And it is, it's especially striking coming from you because you know about all this stuff and all the cool things that we have to biohack our bodies and our environment. But you just said it. Grit. You know, there's a psychological component. Our genes expect us to have these stressors as well. It makes us better. It changes us in ways that are far more complex than we realize yet.

BEN GREENFIELD: Yeah.

SHAWN STEVENSON: And so yes, we can find these workarounds, but at what cost? Right. When we're making things easier again, that's what got us into this in the first place. Right. Yeah. And so it's just keeping it in context and doing our best to stay true to. Again, you said it like we found ourselves with this, this biology here that's evolved over hundreds of thousands of years in this current form. And we were in a certain environment for most of that time until, you know, like literally a snap of a finger.

BEN GREENFIELD: Dietary stressors, right? Like there, there's a case to be made that moderate exposure to gluten and lectins and plant defense molecules and, you know, so they're, they're called xeno hormetic agents, right? XENO hormetic agents. These are elements of the plant kingdom that if consumed in high amounts could kill you or from the plant standpoint, at least keep you from coming back and nuking that plant out of existence as a mammal. And, you know, in high amounts they can cause some gut distress. They can cause you to, you know, like go poop out the seed of that plant elsewhere, whatever. But in small amounts, they also induce cellular resilience back to the alcohol piece, right? You get an antioxidant response, you get a change in the microbiome based on the dietary diversity present in a lot of these compounds.

And you develop an immune system that's more resilient. And when you say, yo, I'm going gluten-free, lectin-free, no oxalates, no phytates, no cruciferous vegetables, nothing that's bitter, and I'm, I'm gonna do three ribeyes a day type of protocol. If you have severe

autoimmune disease or a really significant gut issue that needs healing. You might need to do that for a short period of time. But, you know, it's another kind of myopic focus in the health industry, or at least the, the nutrition part of the health industry now, to just cut out any food that has any element of any type of, of toxin or poisonous presence. When, you know, if you look at, like, if you, if we want to extend this to, let's say, other lifestyle activities, exercise is poison.

I mean, your muscles look like World War II after exercise are torn up and you know, and you got a bunch of cortisol and lactate and, and, and they're damaged, right? Alcohol is toxic to your body. Saunas depleting, and you're losing electrolytes and your heart's under stress and you're hot and you're producing these heat shock proteins to keep your brain from dying. When you get in the cold, your body has to start shunting blood flow all over the place so that organs don't freeze. And so the toes and fingers don't fall off yet you, you know, you don't see a lot of people saying, well, don't go to the gym. It's dangerous. But you see people saying, well, don't eat gluten, it's dangerous or you know, don't eat.

Oxalates are dangerous. And yeah, they are in high amounts. Just if you spent, you know, three hours a day at the gym, the bodybuilder and you know, died of cardiomegaly when you're 60 years old, you know that type of gym activity can be damaging. But small to moderate amounts of a high amount of even slightly toxic and poisonous foods from huge elements of dietary diversity increases cellular resilience over time and increases the diversity of the microbiome in a way that helps with your brain and helps with your immune system. So I think the discomfort piece even applies to food. The only exception being, I don't know a lot of people who just like complain that sourdough bread tastes really bad, so they're gonna avoid it 'cause it's uncomfortable. But if you look at stuff like that, like from a gut standpoint, it can be slightly uncomfortable, like for your body to learn how to deal with all these different dietary components.

But if you introduce them on a regular basis, interestingly, your microbiome changes in such a way that it becomes better able to handle a diverse array of foods. And the more myopic your diet becomes, the less able you are to handle a diverse array of foods. Hence the peanut allergy crisis, as parents were told for a long period of time that babies shouldn't have

peanuts. And we saw a direct correlation between parents being taught to avoid peanuts at all costs, and a rise in peanut allergies versus small doses of peanuts that a child is given to allow their immune system to be able to develop a proper response to peanuts. I saw one study a few years ago that showed that people who had low amounts of gluten or gluten-free diet at an early age were more sensitive to gluten at a later age, probably because the bacterial composition of their gut had not developed to the point where they could digest that specifically protein as efficiently. So it's kind of like the, the more you cut out and the more simple your diet becomes, the less tough you get, basically. Because it's just like less digestive discomfort.

SHAWN STEVENSON: Man. So, again, this is a powerful point. If you don't have celiac, if you, you know, just you found out about some of this information, which is, this is easy for any of us to do, especially today, social media, podcasts and those type of things to get educated. We wanna get better and we find out about gluten and potential issues and maybe we find out we have a sensitivity, right? And so we exclude this thing and we go for years doing our best and we're asking the waiter and we are like checking all the labels and we are, you know, all of that stuff. And then you find yourself in maybe, you know, an interrogation situation, alright? They're trying to get information outta you and you've been gluten free for 10 years and they're like. Alright. You don't want to talk. Get the glute. All right. Because..

BEN GREENFIELD: We're out the wonder bread. Let's go. They're gonna you up with that gluten.

SHAWN STEVENSON: All right. So it's in a way, and I love this, it's kind of like being able to, not necessarily microdose, but to have certain exposures and not to completely eliminate certain things just because of an aspirational idea, right? And this is still, this is the most important takeaway from today. This is still unique to you and what that looks like.

BEN GREENFIELD: Yeah, it is. I mean, and that is the cool thing. So you don't wanna walk out of, let's say, finish hearing this podcast and say, well, you know, Ben and CH said I could just eat whatever I want to eat, and all of a sudden all these foods have been avoiding for years 'cause I heard they were unhealthy. I'm just gonna fill up the grocery shopping cart. Back to

what you were explaining about self quantification. You can now test, you can actually find out if you really want to get precise and you can get a good food allergy panel that'll show you if you actually have, you know, an immune system response to a food, or if it's just unhealthy for you because you've been given that impression by your neighbor or a book.

And you can do the blood sugar and see what, what blood sugar responses are to certain foods. It's pretty rare, again, back to the whole full blown autoimmune disease component, that by doing a bunch of testing, you're gonna find out there are little tent foods that you could eat, but you may actually identify a few that really truly are. Not up your alley. And I think there's a difference between that and just avoiding, you know, all the foods that you've read about and all the books at all costs. Because you and I know this, in the nutrition industry, one of the secrets to writing a bestselling diet book is to create a villain, right?

That is the group or the food, or the compound or the molecule that's just bad for all human beings in the entire universe. And then write the whole book, present the diet that eliminates all of this. Maybe sell a supplement somewhere in there that helps you to digest the thing. And you'll see that model. I'm not throwing anybody under the bus because there's just, there's so many examples of this. There's probably hundreds of different books that exist on the market right now that are written from this perspective. And I don't think there's, there's any type of malicious intent behind writing a book like that.

I truly think that many people write these books, like they probably had a pretty bad reaction. They had patients who had a bad reaction to these foods. And I think that in many cases people can have a bad reaction to certain foods, but I don't think it's done a lot of people, much of a service to learn that, oh, here's yet another food, yet another compound that I have to avoid. And you just get this laundry list where at the end of the day you're like, you know, can of sardines and some sea salt, and that's like all you're allowed. So, something fishy. So, so yeah. So I think that, that there's a little bit of a commercialization of myopic diets as well.

SHAWN STEVENSON: Yeah. And also even with the allergy test, we've gotta keep it in context. Why is your body responding to that? And also, for example, it might be you're hyper

responsive to Ginger. And I've seen this happen where somebody's having it. It could be stimulating the immune system in a way that is supportive in certain contexts. And later on, you know, uh, six months later they're no longer responsive to Ginger in a negative way. You know, so it's like you've gotta take this stuff, keep it in context.

BEN GREENFIELD: Oh yeah. This is, I'm glad you brought that up because this is, this is all like, I went on vacation to Italy and hey, all the gluten and gelato and pasta that I wanted and I felt fine. They must be doing something different to the European food supply than they are to the US food supply. 'Cause I have all that stuff at home and I feel horrible. And yeah, maybe that's a little bit of the case, like no whatever Roundup in Italy or something like that. But I think a bigger part of it is you're just less stressed out when you're on vacation in Italy. And anytime you're in a low stress scenario, your body's just able to handle more dietary diversity as well.

So I think part of it too, back to what you were saying is ask yourself. Why are you having a deleterious reaction to that food? And maybe it goes beyond that food. Maybe it's how you're handling your emails and your stress and your sleep and your relationships, you know? 'Cause anybody knows, like, you know, like if you're stressed out the same meal that you would've done fine with while watching, you know, funny movie with your family or, or hanging out playing games around the dinner table can just like, give you like some gas and bloating and digestive distress. If you're, you know, eating it while you're, you know, driving, just holding the steering wheel with your knees, like driving to work, commuting, like eating it out of the, with a, not that I endorse that. But yeah, just like the, the manner in which you eat the mentality that you have and the, and the, the stress or unstressed scenario in which you can definitely affect that as well.

SHAWN STEVENSON: Yeah. Yeah. Well, I don't wanna let you go without asking you about this. Obviously, well, maybe not so obvious for those that don't know, but Boundless, you have a updated revised edition.

BEN GREENFIELD: Yeah. The red one.

SHAWN STEVENSON: This, first of all, this book in and of itself can get you fit with the sheer weight. You don't leave a stone.

BEN GREENFIELD: I know. Well, I did a book signing yesterday, so up.

SHAWN STEVENSON: Yeah, you got hooked up.

BEN GREENFIELD: I probably got like 60 of them.

SHAWN STEVENSON: But you don't leave a stone unturned. You talk about some of everything. And also, it's beautiful. It's a beautiful book as well. And it's one of those books where, honestly, man, you could just look at the table of contents, pick out a chapter and just dive in and you're gonna learn stuff that you didn't know, period. But one of the things I wanted to ask you about it was, I got reminded of it because earlier you said bone loading muscles, right?

So, these, these stimulants, and also you mentioned bone density, and it got me thinking about the Wolverine chapter in the book, and this is one of those things that's. I don't want to say it's inevitable, like Thanos or anything like that. See, there's a lot of superhero references going on. But many people experience things that set them back, injuries. Right. We get hurt. Especially if you're, if you're doing stuff. I just saw a segment from Dr. Stu McGill and he was basically like, who do you think gets back injuries more often? People who are inactive and unfit or people who are fit and active.

That the answer was actually people who are fit and active have more issues because they're risking, they're pushing it. Sometimes they're pushing it too far. And so when these inevitable things happen, there are proven ways to get better, faster. Your body knows what to do. Yeah. And it can, we have a capacity that is just, is dormant for so many of us. And you talk about how to successfully accelerate healing. And that's why it's called Wolverine.

BEN GREENFIELD: Of course.

SHAWN STEVENSON: Yeah. Let's talk a little bit about that.

BEN GREENFIELD: Yeah. Yeah. And by the way, it's also possible that the active and fit people are just more tuned to their bodies. So they're the people complaining about the back pain, whereas the, the unhealthy unactive people are just like, they're just like, oh, this is how I'm supposed to feel. It might be a little bit of that as well. I don't know. I haven't seen the, the research. But I think there's kind of two different ways to look at recovery. One is just basic recovery. Like, I've finished a workout and I need to do something that allows for metabolic waste to get flush out of my used cells, this would be like hot cold contrast, like sauna cold plunge or you know, hot cold water.

This would be, you know, from like a biohacking standpoint, like those recovery boots, you can wear that pump blood in and outta the legs if you really wanna get advanced. These can even be things like hyperbaric oxygen chamber, you know, any of these things that you see at a lot of, of biohacking or longevity facilities, things that allow the body to move stuff out of cells and and heal a little bit more rapidly from that standpoint. And in that same category would be the actual nutrients to help muscles to repair and recover. I think the primary ones to think about would be anything related to building blocks for muscle. So huge fan of collagen, huge fan of essential amino acids.

Huge fan of protein, especially when consumed along with digestive enzymes. Namely digestive enzymes with proteases that help to break down the protein more readily. One of the reasons that's important is a lot of active people are having their protein feeding within a couple hours after a workout and after you've worked out, you do a little less good of a job producing digestive enzymes, right? So taking a digestive enzyme with whatever your post-workout meal is can help with more of the amino acid bioavailability just because you're breaking down the protein more readily. So looking at your protein sources, looking at things like blood flow, oxygen, et cetera. You know, that, that chapter's pretty long, but I kind of detail some of the different hacks and some of the different nutrition principles for something like that.

Then the other piece, in addition to the basic recovery piece is the injury piece, which, which of course is, is a big issue for a lot of people when it comes to injuries. I think we could look at it from, again, like a technology standpoint and then also a nutrition slash supplementation

standpoint. So if, let, let's, let's use an example. I don't know, throw, throw a joint at me or an injury that you've dealt with or something that, that you think is kind of common.

SHAWN STEVENSON: I just mentioned Stu McGill and back injuries. Low back injury. So we'll say a low back.

BEN GREENFIELD: Okay. Yeah.

SHAWN STEVENSON: Herniation.

BEN GREENFIELD: Yeah. So let's say you have a disc herniation. One thing that is necessary is pain control. I'm not a huge fan, just based on some of the gastric and liver issues it causes in people of, you know, ibuprofen, non-oral, anti-inflammatories. There are compounds like curcumin, a one called pro resolving mediators, fish oil, any of these natural anti-inflammatories that can help from an inflammation standpoint. From a pain standpoint, if you look at anything that would be a tactile or a haptic cue, like, like a vibration touch or something that would, a photo cue that warms the tissue, and this would primarily be anything from like the red light, infrared light world.

Both of those can be really powerful. So, throw out my back dealing with disc herniation, I'm going to shift towards an anti-inflammatory diet. I'm gonna include a lot of curcumin, Omega-3 fatty acids, fish oil, maybe some of these fancier compounds like the resolving mediators. Some of these things will help to decrease inflammation naturally. And then I'm going to either get like a red light belt or a red light panel or get access to some kind of red light that I can get on there a couple of times a day for 15 to 20 minutes to start to increase blood flow and heat the area. From a tactile sensation standpoint, there are belts now that will like massage hyper ice thera body.

They, they produce belts that, yeah, it's basically like wearing a massage tool that will vibrate and it serves to both increased blood flow, but also just that haptic sensation helps to override the nociceptor, the pain receptor sensation of pain. Electrical muscle stimulation would be another example of this.

Like if you wander into Walgreens on the back pain shelf, you'll see like a transcutaneous electrical nerve stimulator, a tens unit that will stimulate nerves to override back pain. Those work pretty well, there are now units that will combine the option of using tens and also using electrical muscle stimulation.

So tens stimulate the nerves. And then EMS stimulates the muscles. So companies like Mark Pro, for example, MARC pro, they have a unit with little electrodes that you can attach that can either override the nerves or override the muscles. You can kind of go back and forth and the nerves are useful if it's just like pain and you can't sleep. The muscles are useful if you wanna start to retrain that area. And I would say one of the last things to think about, and this is just kinda like a cool, this is something I do pretty often with injuries, and it's kind of a cool trick to have up your sleeve, is if you put something on the injured area that's transdermally absorbed.

An example of this would be, let's say like a magnesium lotion or a magnesium oil, or a CBD lotion or a CBD oil, like magnesium can kind of relax the muscles. The CBD can act as an anti-inflammatory. Arnica would be another example, like get a lot of CVS Walgreens. You can get something called traumeel, T-R-A-U-M-E-E-L and that's got things like arnica and these topical anti-inflammatories. You put that on the muscle and you rub it in. But now you want to drive it more deeply into tissue. And I learned this trick from a physician who worked with Tor de front cyclist who just said like, get back into the race, you know, the next day after having been injured the previous day. So then you want something that will drive the transdermal topical deeper into the tissue.

That's where you can actually use something like red light or electrical muscle stimulation to drive it more deeply in. So you would put your topical on the tissue or on the low back. Then you put on a red light belt or a vibrating belt. I actually have a belt back in my hotel room here 'cause I just travel with it everywhere, just in case I hurt my back. 'Cause you don't wanna know how many times I've mildly thrown up my back while traveling and just wished I had something like this. So I have a belt, I got off Amazon in my backpack. Well, it's back to my hotel room now. It does massage, it does red light, and so I can put like a transdermal on there, wrap it around.

It's doing it all at the same time. And then the last step is if you're able to put something cold on so you're able to turn up the stimulation a little bit higher and then finish with heat. If you do that like a couple times a day, that's fast track to recovery. Hmm. Last thing is, I'd be remiss not to mention, you know, back to peptides. There are other peptides beyond GLP. There's two, and these are actually called the Wolverine stack. One peptide called BPC 1 57 and another one called TB 500. These are injectable peptides that rapidly speed up muscle repair, tend repair, ligament repair. You gotta be a little bit careful peptides where you get 'em. A lot of 'em are just like cheap, contaminated, Chinese imported peptides. But if you can get like a good source of peptides and work with a doctor who's got access to a compounding pharmacist, peptides can be really good for healing also.

SHAWN STEVENSON: Ben Greenfield, where can people pick up a copy of the new revised edition of Boundless.

BEN GREENFIELD: Wherever books are had anywhere. Amazon, Barnes and Noble, boundless book.com, wherever.

SHAWN STEVENSON: Got it. Got it. And also, where can people find you, connect, follow you, all that good stuff.

BEN GREENFIELD: On the internet.

SHAWN STEVENSON: On the inter, we're in it, we're in it right now.

BEN GREENFIELD: Ben greenfield life.com.

SHAWN STEVENSON: Awesome. Yeah, man, I love talking with you man. I appreciate you so much for the work that you do and how you do it. And you know, we've actually, you know, ended up staying at the same place back in the day we stayed at a house in Austin.

BEN GREENFIELD: That's right.

SHAWN STEVENSON: You're about that life you got there. You didn't get a Uber. You was like, you, you tweeted out to your community Who's got a bike? I'm about to bike all over the place. You everywhere.

BEN GREENFIELD: I almost rode my bike here today, but it, it's a little far from Santa Monica. I was like, I don't want to get there all sweaty and you know.

SHAWN STEVENSON: Well, well thank I appreciate that man. I appreciate that. But you know truly, man, it is an honor to know you and thank you so much for coming to hang out with us.

BEN GREENFIELD: Thanks, man.

SHAWN STEVENSON: The one and only Ben Greenfield. Thank you so much for tuning into this episode today. I hope that you got a lot of value out of this. If you did, you know what to do. Sharing is caring. Share this information and more powerfully is demonstrating some of the stuff that you've learned today. Putting those three action steps to support fat loss into your routine, strike stroll and shiver. Test it out. See what it do. Inspire others either with your results or just like, what are you doing? And they can start to participate and engage. There's many different ways to share, but it's sharing our voice, sharing resources, but also sharing by being the model.

I appreciate you so much for tuning into this episode. We've got some amazing masterclasses. And world-class guests coming your way very, very soon. So make sure to stay tuned. Take care, have an amazing day and I'll talk with you soon. And for more after the show, make sure to head over to the model health show.com. That's where you can find all of the show notes. You can find transcriptions videos for each episode. And if you've got a comment, you can leave me a comment there as well. And please make sure to head over to iTunes and leave us a rating to let everybody know that the show is awesome and I appreciate that so much and take care, I promise, to keep giving you more powerful, empowering, great content to help you transform your life. Thanks for tuning in.