Introduction to Metabolic Freedom

Welcome to the conquering Chronic Inflammation Summit. I'm your host, Doctor David Jacobs, and today we are talking about how metabolic freedom is the key for longevity and reducing chronic inflammation.

My guest is Ben Azadi from the top ranked Metabolic Freedom podcast, and he has a new book called Metabolic Freedom that is a bestselling book, and it's all about how to burn fat for fuel and reduce inflammation in your body.

So this is a great book to check out, guys. Check out Ben's Metabolic Freedom podcast as well. You can also check out his website Ben azadi.com. And he also has a popular YouTube channel with over 300,000 subscribers.

Just Ben Azadi on YouTube. You guys are in for a treat again. Check out his book Metabolic Freedom all about what we talk about in this interview. And if you know anybody that's dealing with, metabolic dysfunction, which is most people in our society, it's a great interview to share with them as well.

And without further ado, let's go into the interview. Well Ben, always great to connect and congratulations on this new book, Metabolic Freedom. I think that for you and I, that's, that's a really powerful term, metabolic freedom.

And it's something that most people in society never experience. Let's talk about that. We had a major issue with metabolic health in our society. And most people are constantly, you know, they're stuck in sugar burning mode.

They're dealing with fatigue. They're dealing with brain fog. They're they're dealing with weight loss resistance. All of these types of symptoms that are associated with metabolic dysfunction.

Why are we seeing this in our society? Yeah, you nailed it, David. And you've been preaching this message of metabolic flexibility, metabolic freedom for so many years.

Unfortunately, the majority of Americans and most people in first world countries are doing exactly what you said. They're they're stuck burning sugar.

The Metabolic Health Crisis

And there's nothing wrong with burning sugar as a fuel source, unless you're only burning sugar as a fuel source. It's just it's the opposite of metabolic freedom.

It's a metabolic prison where you are relying on snacking and grazing and food to give you a short term energy boost. But it's not sustainable. And at the same time, you're aging yourself faster, which leads to metabolic disorders like pre-diabetes, high blood pressure, full on diabetes, and a whole host of other conditions.

You know, when we look at the state of the United States in regards to the metabolic diseases out there, there were three key studies that I put in the book.

The first one was, 2016 study from the Mayo Clinic. They were set to determine how many Americans live, what they consider an active, healthy lifestyle.

And they base it off of four criteria, was the first criteria was that they don't smoke cigarets. Okay, easy. Second criteria was that if they were a male, they had a body fat percentage of less than 20% and female under 30%.

The third criteria was that they exercised for about 150 minutes per week. Total moderate to vigorous exercise. And the final criteria was that they ate what they considered a healthy diet was essentially a minimally processed diet.

At the conclusion of the study, David, it showed that only 2.7% of Americans fit that criteria. That's it. And of course, that was before Covid, before, you know, got worse along the, along the way since that point in 2018.

And this is a study you've spoken about before, the, University of North Carolina, Chapel Hill showed around 88% of Americans are what they consider metabolically unhealthy.

And then in 2022, which is a more of a recent study, showed it's closer to 93% of Americans being metabolically unhealthy. So we have a big problem. We spend $4.6 trillion every year on health care in the United States, which would be the fourth largest GDP in the world if it was a GDP.

And what's fascinating about that is that one out of every $4 spent on health care is spent on diabetes, predominantly type two, which we know it's a lifestyle condition.

And unfortunately, many of these lifestyle diseases and diagnosis, are treated with medication. Huge mismatch. So we have a problem. And that's the reason why, your work is so important.

And I've been so inspired to learn from you and work alongside with you. And that's why I wrote the book Metabolic Freedom. I'm really excited to put a dent in disease and show people the way to metabolic freedom.

Yeah, for sure. And those are alarming statistics. And, we need to take this really seriously. Sometimes we roll those statistics and we just think, oh, it's just the way it's always been, right?

You and I, you know, growing up 80s and 90s, it's like we've just kind of gradually seen people get more and more overweight, more sedentary, more processed foods being, you know, implemented into our society.

Most people just take for granted that, you know, people are happy and satisfied. Right? And, we just hear these statistics, but this is really bankrupting our country.

And so what's great about the Make America Healthy again? Approach is that we, we're realizing, are ringing, ringing the alarm on this. So this is a very, very serious issue.

Not only is it a lot of unnecessary suffering that's going on, but on top of that, it's hurting everybody. It's hurting our entire country. And, we got to do something about it now.

We talked about sugar burning. We we obviously we've got to burn sugar at certain times like mom are exercising. You know, what are the benefits of burning sugar and what are the benefits of burning fat for fuel and why should we kind of be going back and forth between those.

Yeah, great. Great question. And it's good to explore that a little bit. Chapter three of the book is all about being a sugar burner and why that's a problem when you're stuck burning sugar.

Essentially the first half of the book I'm holding up the book here is split up into the first half is about the problems where it has contributed to metabolic disease. Second half is the solution.

Sugar Burning vs Fat Burning

And then there's the 30 day plan with some recipes at the end of the book. But chapter three is all about this. And when we think about burning sugar, okay, carbohydrates from food essentially raise our blood sugar levels.

Protein can in a certain amount, but it's really the carbohydrates, especially processed carbs. But all carbohydrates will turn into sugar in the bloodstream, whether that is, ice cream, or oatmeal or wheat bread or a fruit, it all turns into sugar.

So the body is well equipped to deal with that from time to time if you have a healthy metabolism. We just established 93% of people do not have a healthy metabolism.

So what happens is this excess glucose pulls up in the bloodstream. And then our pancreas needs to process it. So it produces insulin to clear that excess glucose out of the bloodstream.

First it packs it into your liver and muscle cells. When that's for when your glycogen stores are full, then it goes to your body fat. And that's what increases our our weight and creates a weight gain.

When we think about insulin, it's a key. It's a key piece here because in the book I make the case and you talk a lot about this. Insulin is the first domino to fall that leads to many of these metabolic disorders.

As a matter of fact, there are studies that I referenced in the book that show you could have full blown insulin resistance. Hyperinsulinemia for on average 6 to 14 years, with your blood sugars looking perfect and your A1 c looking perfect because your pancreas is just shouting out insulin to clear that glucose out of the bloodstream until the receptor sites go deaf to the screams, and then all of a sudden you're diagnosed with prediabetes and diabetes.

So a fasting insulin test is one of the most important tests you could get done for your metabolism. You want to see that in the single digits. That shows you are insulin sensitive.

If it's above that, if it's ten plus, there's some work to do. Now when we talk about burning sugar versus burning fat, when you're constantly stuck burning sugar, one of the things that's an issue in terms of heart disease, which is the number one killer in the United States, high levels of glucose and constantly burning sugar strips nitric oxide from your body, which is this important gaseous molecule, nitric oxide.

Vaso dilates our blood vessels, opens up the blood vessels, allows for oxygen delivery, blood delivery, nutrient delivery. Prevents heart disease. Lowers blood pressure when you strip nitric oxide from being a sugar burner, it also constricts your blood vessels, which then narrows those blood vessels, which makes your heart pump harder, which is the leading cause to high blood pressure, not the salt.

It's the sugar, right? Because it strips your body away from doing that. But like you mentioned, David, when you're exercising, you're raising glucose, you're dumping those those glycogen storage.

You're you're burning sugar as a fuel source. The benefit for burning sugar, it's quick and easy to get to, like you could burn it, burn it quickly. The drawback is that it's not sustainable.

And if you're stuck burning sugar, it leads to a lot of problems. So we want a healthy, flexible metabolism. Metabolism that is free, that has the ability to burn sugar when it needs to and burn fat and the benefits of burning fat.

It's a cleaner energy source. Your liver starts using it and producing ketones. You wrote a whole book about keto. Ketones are incredible for inflammation, incredible for these metabolic conditions.

So that's the first step here, is to go from burning sugar to burning fat, revamped that metabolism, and then you could go back from burning sugar and burning fat in a consistent manner.

And that's the way I live my life currently. Yeah for sure. So we want to have that metabolic freedom and metabolic flexibility to burn sugar like when we're exercising.

That's going to be a great performance fuel that's going to allow us to think sharply, quickly, be able to, to perform whatever we're doing for exercise, whether it's resistance training or running intervals or whatever it is.

But then we want to be burning fat when we're relaxed, when we're sleeping at night, we want to burn fat for fuel. And that's so key. Now, insulin you mentioned is kind of one of the the important.

It's like the lock. It's it's it's the lock and key on fat burning. And we have to get insulin down below a certain threshold. And then this kind of magic happens where we start burning fat for fuel.

What are people doing that's causing elevations in insulin in our society? It's a great way to put it with the lock. You're correct. We need to lower that.

We need to lower the hormone insulin, to unlock fat burning. And what are people doing? They are eating high carbohydrates. The average American consumes around 200 to 250, total grams of carbs per day.

And it's predominantly from from processed carbohydrates. Huge glucose and insulin spike. But it's the snacking and the grazing as well. Every time we snack and graze, we raise glucose and insulin and it disrupts the metabolism.

It's like, you know, you work from home. I work from home. It's like getting into a flow state in our office. And we're so dialed into our work. And every 2 to 3 hours someone is banging on your door.

Maybe your kids do that. David, but somebody is banging on your door. Yeah, yeah. Interrupting your flow state. This is exactly what insulin is doing to your metabolism.

It interrupts its flow state. So, snacking and grazing, we're not designed to snack and graze. We're really not the first step. You know, if you identify that you're a sugar burner, the first step is to gradually lower your carbohydrate intake, replace that with healthy protein and fat, and eliminate the snacking.

Start with three meals a day breakfast, lunch, and dinner that allows you to lower insulin in between those meals. And then eventually you start to pair that with time restricted feeding, where you skip a meal or push the meals are close.

Condense it to a window where you allow insulin to drop even more. So the snacking and the grazing. The stress is also an issue there, but it's essentially the carbohydrate intake and the snacking and grazing that's really producing this extraordinary amount of glucose and insulin.

Yeah for sure.

Insulin, Snacking, and Carb Quality

And then when it comes to carbohydrates, they're they're not all necessarily the same. Although we will break them down into glucose net carbs. But some like from processed foods are more insulin genic than others which would be coming from Whole Foods.

Can you talk about that? Yeah, exactly. All right. So in the book there's a there's a graph, an illustration of blood insulin response from the three macronutrients.

And it breaks down carbohydrates, protein and fat and carbohydrates are at the top here when it comes to this blood insulin response protein very moderate response and fat barrel.

It's very minimal response for insulin. But to your point, it depends on the type of carbohydrate. If you're eating candy, Snickers bar ice cream, things that are quickly absorbed and digested, or even whey protein, by the way, which is very insulin genic if you're not doing it after like a strength training workout, just having whey protein, there's going to be huge glucose and insulin spike.

That's really rapid. And you could test that by looking at your postprandial blood sugars, your postprandial glucose. Now something like oatmeal or wheat bread, you won't get that immediate spike, but it will happen over time.

It might happen a couple hours later, maybe not as high as the candy bar, but it will spike as well. It will convert into sugar. And a lot of people think, oh, I don't need sugar.

Because I'm having whole wheat bread. I'm having oatmeal, I'm having oat milk, but it's turning into sugar in your body. And if you have a healthy metabolism and you do that from time to time, no big deal.

But 93% of people do not have a healthy metabolism, so it is a big deal for those people. Yeah, I think that's important consideration because, you know, there's a lot of people out there that will talk about, you know, all calories are the same.

You just have to hit your macros, keep your calories under control. But you know, the calories and the carbs that you're going to get from, you know, eating candy versus eating an apple are going to be different, right?

And the way that your body's going to respond to it are going to be different. And so there again, there's a lot of people out there that are like, okay, just calories in, calories out, weight loss all comes down to that.

And you know, there is a calories in, calories out approach. But, you know, I think the hormones, insulin and what we're doing with our hormones is a bigger factor.

I know you talk about that in your book as well. Yeah, you said it. And that's the old debate, right? It's like a constant debate. The calories in versus calories out model versus the hormone model.

And when I first started out my career in health space, I was all in with the calories in versus calories out model. I owned a CrossFit gym, and I used to teach my students to, you know, calculate their total daily energy expenditure, their, basal metabolic rate, put them in a deficit.

I thought I was so clever, and I thought the human body was this math equation that you could manipulate. And I realized, well, it works short term, but it fails long term.

And it's a huge distraction to what really matters, which is what you talk about hormones and inflammation. I do believe calories matter. I'm not a calorie denier, but it's not the most important thing to focus on.

It's a distraction. And in chapter one of the book, it's titled We Need a New Paradigm for Fat Loss. And we talk I talk about these these five fat loss failures.

One of them is this calories in versus calories out approach. We need to get away from this. It does so many people a huge disservice. It distracts them.

When we think about the model of calories in versus calories out the premise, the premise is that you need to lose weight in order to get healthy. But that is not how the body works.

We don't lose weight to get healthy. We get healthy to lose weight. Meaning when you focus on hormone health and inflammation, then the weight comes off as a side effect.

And the amazing thing about doing it this way is that you don't have to count a single calorie. You don't have to weigh your food, you don't have to rely on sheer willpower and deprive yourself.

It actually is really easy. You're just removing the interference, allowing your metabolism and intelligence to heal the body so it's health over calories in versus calories out.

And there's a study I put in the book, David, about. And I go deep into this calories in versus calories out thing. But I put a study on fecal microbial transplants and how they had two groups of participants who were overweight.

They simply, repopulated their gut bacteria with the fecal microbial, transplant with good bacteria didn't change, their calories remained the same, and they lost weight because their gut got healthier. Right.

There's so many examples of this. The Biggest Loser TV show that was a huge failure. When you when you constantly cut calories, your metabolism will match the energy coming in.

So short term it works. And that's where it fools a lot of people. They're going to start to lose weight. But then as you continue to cut the calories or keep it low, the metabolism slows down to match the energy demand the body

wants to survive is the number one priority.

Why would I continue to burn this amount when I'm not getting enough energy, and you could only cut it so much your calories until the point where now your metabolism is racked and your your ghrelin levels, your hunger hormone is through the roof and your leptin levels for satiety have plummeted.

So yeah, we need to detach from the calories in versus calories out model. And focus on hormones and inflammation. Yeah, it's really well put. And I know that you and I are both in agreement with this kind of ancestral model of feast and famine.

So, you know, our ancestors were at optimal, you know, if we're going back a thousand years or so, they're at optimal weight and they're they're in really good shape because they're doing a lot of work outside.

They eat when food is available and they eat well, right? They don't know, you know, they don't have refrigeration, they don't have pantries, they don't have processed food.

And so they're eating really well, when they're, when food is available. But there's a lot of times when food is not available. And so they're kind of cycling through this feast and famine period.

And in our society we're grazing all the time. And so we have to be more intentional with it. And you talk a lot about that in your book. Yeah, exactly. The feast famine approach.

And, you know, there's a huge difference between being in a calorie deficit through this approach versus being in a calorie deficit by grazing throughout the day.

Calories, Hormones, and Feast-Famine Cycling

A lot of people say the only reason why intermittent fasting works for weight loss is because you're in a calorie deficit. But there's a huge difference between intermittent fasting and being in a calorie deficit and grazing and being in a calorie deficit.

You don't get all the amazing, incredible benefits of fasting when you're grazing all day. Fasting, as you know, teach activates this cellular clean up process called autophagy.

You won't get that through grazing. Fasting also raises your counter regulatory hormones, which gives you energy, throughout that fast, which you will not get when you eat throughout the day because insulin blocks that.

So we are designed, like you said, to feast in fast. We doctor pump our mutual friend, feast famine, cycling. I talk a little bit about that in the book and his diet variation concept.

Like you said, when we think about our ancestors, when they got to kill, they didn't just, like, graze. They would feast, and then they would fast for a few days until they got their next meal.

And that's essentially how our cells are designed to, to thrive these days. We're hard wired for the old school. And you wrote a whole book about this.

So yeah, feast, famine. Cycling is the magic. It prevents weight loss, stalls. It prevents the metabolism from shutting down. You don't get all the, negative effects of long term caloric restriction, and you get all the benefits for longevity and anti-aging from it.

So it's it's it's magical. Yeah. It's so key. You know, the old model of, of calorie restriction where you would be like munching on rice cakes, you know, throughout the day you're constantly elevating your blood sugar and your insulin levels when you're doing that.

And that's blocking that cellular clean up process, that autophagy. And most people in our society today are

deficient in autophagy because we have food so available, and we're in the sugar burning mode.

Him when you're in sugar burning, you're constantly, constantly thinking about food you're craving all the time, right? Whereas when you're metabolically free, you really don't like I.

I tell people all the time, I get hungry when I start eating. It's not like, I'm hungry, so I need to eat. It's like, okay, this is when I've kind of set my meal plan and I start eating, and then all of a sudden my body can my my appetite wakes up. It's like, oh, yeah, now it's eating time.

Let's eat more. Let's make sure we get sufficient calories. Yeah, exactly. Me too. That's why partial fasting doesn't really work for me. I rather do a pure water fast, because once I start eating, I'm ready to.

I'm. I've trained my metabolism similar to you. So if I'm going to do a long, fast water fasting over a partial fast works so much better for me. Yeah, I'm in agreement.

I'm actually, well, I'm not doing a long, fast, but, about 24 hours into a fast right now, and I don't. I don't feel hungry at all right now. I'll. I'll end up working out.

I'll, I'll lift heavy weights. Right. And still not feel hungry and wait maybe an hour after that before I actually end up breaking my fast. And I feel great. So I'm not driven by hunger.

That's part of the freedom that you talk about. So many people are driven by hunger. And I know early in my life it was like when I was when I was in high school, you know, my mom would never get the breakfast that I wanted, which was, you know, Froot Loops or whatever I saw on TV.

But she would get what she thought was healthy, which was Cheerios. Right. Because that's marketed as healthy or cornflakes or, Wheaties, because Michael Jordan promoted Wheaties.

Yeah. You know, and we'd have skim milk because we want to avoid the fat. And of course, we put like a banana in there because that's fruit. And then, you know, and, we, you know, on a good day, we would have orange juice with it because that's got vitamin C, but like two hours later I was sleeping in my, you know, high school English class, right.

Because I could I could barely keep my head awake. I would be so thirsty because my blood sugar, I would just have this reactive hypoglycemia and I would be hungry all day and moody all day long.

And this is the way a lot of people are experiencing life. Yeah they are. If your parents would have given you, like steak and eggs or bacon and eggs, avocado and eggs, you would have had amazing energy levels.

You would have been in class focused because it's protein and fat and fiber versus the big carbohydrate glucose spike. Absolutely. So much better swap right there. Right.

And so but you know, the the the general nutrition recommendations would have been the steak and eggs that's going to cause heart disease. Right. Whereas the Cheerios are heart heart healthy.

And so we have to really rethink this. Yeah. Propaganda propaganda. You know, Doctor Kate Shanahan who, wrote dark calories and deep nutrition. She calls the American heart Association the biggest fake news organization in America.

They put their heart healthy stamp of approval on seed oils. And as you mentioned, Cheerios. And it's it's not the truth. And I'm glad we have this Maha movement because it's going to, it's going to show the truth to a lot of people.

I'm excited about this. Yeah, absolutely. Now, you mentioned seed oils. Let's talk about seed oils and how they impact our metabolism. Yeah. You know, it's really cool, David, because we have been preaching this message on

seed oil for so many years.

Right now it's becoming mainstream thanks to, RFK and the Maha movement. Chapter four is all about processed foods and how that contributes to metabolic disease.

And of course, seed oils are a part of that conversation. So these are seeds are processed fats that are really inflammatory inside of your body. There are other names for them.

They're also called linoleic acid vegetable oils. So seed oils and polyunsaturated fats, they're all classified as very the same thing. And they're in about 80% of our food supply in the United States.

And the reason they're so bad for us is because there's a couple reasons why. The first reason is the chemical structure of these fats. They contain a lot of double bonds.

That's why they're called polyunsaturated fatty acids. The word poly means many. So they contain many double bonds. And the reason why this is a problem, the more double bonds a fat contains and the closely they're located to other double bonds, the more reactive and unstable they are to pressure temperature.

So heat and oxygen and how they process them is with pressure, heat and oxygen. So you take this fat that might be healthy when it's cold pressed, organic and not heated and without chemicals.

And you process it, put it into a bottle, get that nice American Heart Association stamp of approval, and you fry with it over and over and over and over.

And what happens is that these fats oxidize in your body. Think of an apple that you bite into. Leave on the counter, come back five hours later. Look at the apple. It's starting to turn brown.

This is essentially what's happening at a cell level. Oxidation with these fats. And there's a study I put in the book, from a gentleman named Doctor Martin Crude Feld, where he looked at, these seed oils, vegetable oils, and he looked at French fries that were fried in vegetable oils.

And he was looking at the aldehyde contents produced after frying them. Aldehydes are carcinogenic. When you smoke tobacco cigarets, there's also an aldehyde content being produced.

Processed Foods and Seed Oils

That's how cigarets are linked to, cancer. And he showed that a five ounce serving of French fries cooked in vegetable oil produce the same amount of aldehyde content from smoking 25 tobacco cigarets.

So essentially one French fry cooked in vegetable oil is equivalent to one tobacco cigaret smoked. In terms of the aldehyde content, it's crazy. I mean, you think about it, that means you may have never smoked a cigaret in your life, but if you've eaten 10,000 French fries cooked in vegetable oil, which I have when I was younger, you've essentially smoked 10,000 cigarets.

Not only that, if you're giving your children a plate of 25 French fries, you're essentially giving them 25 tobacco cigarets, right? It's insane. These fats stay in the body for a very long time.

The half life for linoleic acid is 680 days, two years. So if you stopped eating them today, about two years later, half of them will still be in your body.

Fat cell membranes, mitochondrial membrane creating inflammation. So the list of the ones we want to remove are going to be canola oil, corn oil, cottonseed oil, soybean, safflower, sunflower oil, rice bran oil, and grapeseed oil.

These are all classified as vegetable oils polyunsaturated fats. We want to swap those with saturated fats, which have zero double bonds. Very stable.

The the boogeyman saturated fats, which is, butter, coconut oil, ghee, duck fat, beef tallow, lard from healthy sources and even mono unsaturated fats are safe, like avocado oil and olive oil.

So that's simple swap right? There goes a long way for your metabolism. Yeah, that's super important. And you find these seed oils in all kinds of different things.

Even a lot of things that are marketed as healthy, like a lot of condiments. You know, if you go into Whole Foods, right, go to Whole Foods. I mean, I used to think everything at Whole Foods is healthy.

You go in there and especially like their hot bar. It's canola oil and everything. And you know, with that canola oil when it gets cooked, it may have started out as just canola oil like you were talking about, but actually becomes a trans fat when we are breaking it down, which makes it even more reactive in the body and more pro-inflammatory.

It's there everywhere, even at nice, fancy healthy restaurants. That's why I was asked the server, you know, which oils do you cook your food in. I tell them I'm allergic actually use a seed oil allergy card that I created and I show it to the server.

Yeah. And it voids it avoids taking the hit. They give you different alternatives. It's worth it. I know it's uncomfortable to make these requests, and it takes due diligence, but it's so worth it.

You don't want to take that hit. Two years is the half life they stay in your body, so I don't want to take that hit. I am really diligent about vegetable oils.

Yeah for sure. Now I'm a believer that if your body is good at undergoing autophagy and you're allowing the environment where you can undergo autophagy, you mentioned that earlier.

It's where your body starts to break down all these old damaged proteins. And kind of the cellular cleanup model. I believe that you will remove those seed oils faster.

I think the research that's been done on that is done in environments where, you know, the the cultures, the cell cultures, and the individuals are not actually undergoing autophagy.

And so let's talk about the importance of autophagy for overall health. And I agree with you. Absolutely. That's why one of many reasons why autophagy is important.

And I've also looked at forceful title colon. Ironically it's an omega six fat. But it's a really good omega six. Fat is another way to get rid of these, that oils faster as well.

Big fat and find that in things like eggs. Right. For example fast eggs. And you could also get it like through supplementation form which I take, I just take like a couple teaspoons every morning of that.

Just as a good measure. Autophagy is great. I mean, you give masterclasses on autophagy. I mean, you have your book Fasting Transformation ready to talk about it right behind you.

But, Tawfiq, the analogy I give for autophagy is as a refrigerator, when we think about our refrigerator, refrigerator, we open up that refrigerator and we have all these groceries inside of the refrigerator that all have an expiration date.

And if you just let all those groceries expire way beyond the expiration date, and instead of throwing those into the trash, you just kind of just shove them towards the back of the fridge, put them in the drawers and buy new, fresh groceries and close that refrigerator door and come back later.

It's going to be a toxic environment. Disease will manifest in this environment. Human bodies very similar to this refrigerator. We have cells that have expiration dates on them.

And if we're not taking the time to activate autophagy, these expired cells build up in the body, leading to what's called senescent cells and immuno senescent cells aging us faster, creating autoimmune disease, creating inflammation and autophagy is the process of getting rid of these expired cells.

There's about 60 billion cells every day that need to go through this process of cleaning out the trash and the metabolism and the intelligence is so it's so brilliant because autophagy is one step.

But if a cell has no function, autophagy is trying to fix the cell and clean it up. If that cell is a senescent cell, there's no function. They're called zombie cells as well.

Then a signal is sent for what's called apoptosis, which is programed cell death, which gets rid of the cell. And then there's a new cell that's produced, which is a stem cell.

And all of this is happening during a fast, you know, fasting is my favorite way to achieve autophagy. But you could also achieve it through, exercise like strength training, burst training.

And as you mentioned, David, most people there are in a autophagy deficiency just like they're in a keto deficiency because they're not strength training, they're not breast training, they're not active, they're sedentary, and they're snacking all day long.

They're never practicing fasting. So I love fasting. You're 24 hours into a fast. You're you're getting some real good deep autophagy right now. And the question that I always get asked, when does this haffajee start?

During a fast I want to hear your thoughts on this after I just share my thoughts real quick. Autophagy is always going on to a certain degree, but when you fast, it really ramps up this process.

And for some people, for most people around 16, 17 hours of of a fast you start to ramp up this, this process. Now for David, who's very metabolically free and myself, we'll probably get that much faster into a fast.

But for most people, I'm going to say around 16 to 17 hours, you start to turn on this process. But I want to hear your thoughts and what you've seen with the research.

Yeah, I think it's all going to depend on where your insulin levels are. And we don't know that the there's not research on like what is the threshold where insulin needs to drop below this threshold, maybe like three units in your blood.

Autophagy, Fasting, and Hormetic Stress

You know, or whatever it is. We don't have that research. I would, I would hypothesize it's somewhere around 5 or 6 or something along those lines. But when insulin drops, your body now starts to burn fat.

And it will also need those amino acids and proteins. So that's where the autophagy really comes in because it's breaking down cellular proteins. And it needs those amino acids.

So it'll take down, you know, inferior proteins these senescent mitochondria and different things like that. Break those down and then create new proteins out of it.

So for somebody that's very metabolically healthy, like you and I, somebody that's doing this regularly, we're keeping our insulin levels down to begin with.

That threshold, it's going to be a lot easier to get to that threshold than somebody that's very metabolically inflexible. In fact, you take somebody that's like a type two diabetic and, you know, honestly, like we we almost need to wait like a week before they're going to really get into autophagy. Right?

Because we'll we would need to fast them for a period of time before that insulin is going to really drop to that level.

And that actually could be somewhat, you know, you know, it could be very uncomfortable for them to undergo that.

So we kind of have to get their blood sugar more stable with stop grazing. You know, a lot of the strategies really all the strategies you talk about in your book, your your book is priming people to get into that place where now they can undergo autophagy on a regular basis.

And so it just depends on, you know, as far as when it starts, it's going to depend on your baseline metabolic flexibility. And then the other variables that come in. How well do you sleep.

You know that night. What is your stress levels like. What's your light exposure. You know, are you getting a lot of blue light at night? Are you not getting enough sunshine during the day?

All of these factors play a role in what your baseline metabolic fitness is. You know, for that, for that particular day. Yeah. Well said. All of that needs to be considered.

And you're right, you don't want to take a pure sugar burner and put them into a fast. You want to prime them for that. And the reason why I wrote the book, well, one of the reasons is I put together that 30 day plan.

So at the end, the 30 day plan, the first seven days is first starting out. How do you go from burning sugar to burning fat in seven days? So I teach that process.

You're not doing much fasting. It's very simple. Lowering carbs, increasing protein and fat, eliminating this next week, too. We then start to experiment with 14 hour fast, and by week three you're bumping it up to 18 hours.

Eventually, you'll get to a 24 hour fast because we're priming that muscle and we use glucose and ketones as a gauge to see if the fast is working for you.

Are you getting autophagy or is it working against you? We want to see glucose blood glucose drop throughout a fasting, but ketones rise and we're seeing that trend.

That's great. But like you said if somebody is very unhealthy and they go and do a 24 hour fast, they won't see that trend. They'll see no ketones. Glucose will drop.

They will feel awful and hypoglycemic. So you want to prepare your body to do these fasting strategies for sure. Yeah. And that's the metabolic purgatory in a sense.

It's like you know, you're trying to do something healthy for your body, like by doing an intentional fast, but you're suffering as you're going through it.

I mean, it's kind of like taking somebody that is not fit and then saying, okay, you need to run this five K or you need to do this, you know, hour long, you know, CrossFit, high intense workout.

It's going to be catastrophic. I mean, it's going to be it's going to cause a lot of muscle damage for that individual. When they do that, they're going to be really sore for the next few days, and they may not ever want to do that again.

So I think your approach kind of gently moving people into that, you know, if I were to take somebody that's been sedentary, I would not get them, you know, doing an intense workout to begin with.

I get them walking right, and just go out and walk a half a mile or walk a mile and that alone, that will feel good. The individual will have a positive response.

So that's going to help their metabolic health in the next day, you know, add another half mile to their walk. Right. And you kind of gradually build them up.

What's the same with improving, you know, from a nutrition perspective, improving our metabolic health? It should be kind of this gradual approach, replace the bad foods, you know, with, with more insulin friendly foods, blood sugar, stabilize foods, stop grazing all the time and snacking, you know, kind of gradually build this, this process up.

That's exactly right. The exercise examples perfect. You don't want to go from the couch potato to doing CrossFit. You're going to hurt yourself. Same thing.

You don't want to go from burning sugar to do these crazy fast. You want to gradually build your way there. So that's the way the plans laid out. And if you're thinking, okay, but I'm already doing keto fasting carnivore, I've been following David.

Should I still do this plan? There's an advanced section. Advanced protocol. So there's a beginner protocol and an advanced protocol depending on where you're at.

When you get to that point of the book. But you're right. It all relates to her. Mrs.. Right. And I have a whole section in the book. Page 29 actually shows or misses, which essentially means you apply a stress to the body, you adapt to the stress.

Now you're healthier and stronger. But if you apply a stress to the body and it's too much to adapt to you, now you're inflamed and you're not healthy.

You're actually going in the opposite direction. So you want to continue to apply these stressors which fasting is exercise. All these biohackers are and adapt to them.

Then you're stronger and then you can apply more stress. And you want to build up this, this hermetic ceiling to be able to do these, these different stressors which are really, really important for your metabolism and for your health.

Yeah. And this is important conversation too, because a lot of people on the internet that will say, you know, fasting is not healthy because it elevates cortisol.

A cortisol is a stress hormone. It's a glucocorticoid that basically increases our blood sugar. And that's natural and normal. Glucose and cortisol is also our it's a high performance hormone.

It helps us have morning wakefulness. Right. Mental clarity, energy, things like that. Too much cortisol can be a problem. But there's a there's a thought that a lot of health influencers have where they will say fasting increases cortisol.

Therefore fasting can't be good. What would you say to that? Yeah. They don't understand promises. They they might say they do but they don't really get it.

That's like saying you should never exercise because it's raises cortisol. Right. Okay. That's like saying I should never do sauna because that raises cortisol.

Well that doesn't make sense. Right. So it's not about the cortisol or the stress. It's about are you adapting to the stress? They could be totally right.

You're stressed out and you have you're not sleeping well. You're inflamed. You got work stress, relationship stress. Like you have no business doing all these bio hacks and doing all these crazy fast.

Like that's too much for your body to adapt to. So they're right in the wrong. At the same time, they just don't understand promises. And it's funny, David, because you understand horror grimaces.

But a lot of people in our space and I've been to a lot of conferences, they talk about promises, but then when I hear them give recommendations from like different biohackers, I don't feel like they understand harnesses.

It's and if you understand Hermes, they say, really changes the way you view your health forever. It's one of the most important health principles I've learned over the years.

So I hope your audience starting to understand Hermes is a little bit in the book, goes a little bit deeper into Hermes. Yeah, it's a really important concept.

And I talk about the human growth hormone to cortisol ratio. So when you are stabilizing your blood sugar, when you're living a healthy lifestyle, you're sleeping well, things like that, when you fast your cortisol will elevate.

But also your human growth hormone will elevate. And cortisol is catabolic. But growth hormone balance is it doesn't allow for the negative effects of the the the catabolic effects on muscle tissue.

It'll preserve your lean body tissue. And it will also preserve the, natural rise in key sex hormones for example, testosterone, estrogen, progesterone that you need for a healthy menstrual cycle, healthy libido, muscle growth, all of those types of things.

And so HGH acts to help protect, you know, our our lean body tissue. So we don't get that negative catabolic effect. But like you were saying, if we're overloaded with stress, we're overwhelming our system.

We're not getting the positive hermetic effect. Our HGH is going to be low because maybe we stayed up so late. And so we had too, too much blue light exposure at night.

We're stressed out, whatever it is. And then the fasting could be, you know, overly catabolic for our body. And so it's all about this, this natural balance.

But that's what most people that are the these health influencers that are out there that will consistently hit this message of fasting is bad. It increases cortisol, throws off your hormones.

They're not taking into the into effect the actual rise and growth hormone. That's a really good point. Exactly. That's why you don't lose muscle mass when you're doing these fast because the the growth hormone.

And it makes sense right. Why would the body start to use stored muscle for energy when you have all this fat. It will be such a flaw in the system. It wouldn't make any sense.

Now there will be a certain point if you're very lean, like 6% body fat or less, you'll start tapping into muscle because there's no fat available. But if you are fat on your body, which we all do, if you have 10% body fat, you have about 100,000 calories in your body.

You have a lot of calories to use for energy. You're not going to tap into muscle. The growth hormone, to your point, will preserve that, preserve the muscle.

You could actually build muscle when you when you pair that fast with the feast and the protein and the amino, the essential amino acids.

Personal Fasting and Training Routines

So it's actually an incredible way to build muscle. And these health influencers, they just I don't think they understand it or if they have some sort of agenda or combination of both.

But if want to understand where this you understand if the fast, the biohacking, the exercise is working for you or against you. Yeah for sure. And I, I actually think the, the elevated HGH to cortisol ratio is really a high performance state because the HGH just gives you this extra level of, strength and performance along with the cortisol, which is great for mental clarity, thinking sharply and quickly and allowing you to perform well.

So, like me being 24 hours into this fast and going and working out back when I was metabolically unhealthy, when

I was younger, even though I was younger.

And so I would have I would have thought I would have been stronger and whatnot if I were to fast. Even doing a fasted workout in the morning, like let's say 12 hours overnight or 14 hours, it was like really hard at my I had very little energy.

You know, it's just hard to perform now. I'll be 24 hours into a fast and I'll get my best workout. I'll actually be extremely strong. I'll be I'll, you know, I won't tire down as quick as quickly because the ketones are elevated, my growth hormones elevated.

It's just a really high performance state when you're doing it properly and you're implementing kind of the proper amount of hormones. And that's really the key with your message is you need the right dose.

You don't want to overload your system. And in our biohacking, society, our society is more is better, right. And oftentimes, you know, when you're a high achiever, you're thinking, okay, I need to do all of these bio hacks and sometimes we're getting too much of a dose.

It's so true. It's we violate hormones all the time. I see it all the time, especially in the biohacking space. And you're right, I feel amazing when I work out in the fasted state.

99% of all my workouts are in the fasted state. Because I'm not using blood flow and energy to digest. I'm using it for the workout and I feel great. I am curious though, if you take, any essential amino acids or creatine during your fast, or do you take them at all?

I do take them, but not during the fast. So the way that I and this is kind of a great place to kind of end our conversation, we should talk about our, our normal routines.

So my, my optimal routine is on a on a typical day I'm doing a 16 to 18 hour fast. Most days I usually 2 to 3 meals high protein. And in all of my meals, I eat I don't really, I don't at this point in my life, I actually don't intentionally try to reduce carbs, but I don't eat like breads.

I don't you know, it's if I'm eating a carb, it's it's fruit or it's a root vegetable. Typically. And I feel great as long as I'm getting, you know, enough protein, healthy fats stay off the seed, oils, things like that.

And doing my daily intermittent fast. And then one day a week I do a 24 hour fast. Right? So yesterday I ate lunch and then I fast until lunch. Today, right after my workout, today.

And that's my typical routine. And during those fasts, I there's a couple things I like to do. Number one is, I don't put stevia or any sort of, like, even natural sweetener in anything because I actually want to dopamine.

I want to reset my dopamine pathways. And although, you know, stevia may not impact blood sugar and insulin a whole lot, although it may for some individuals, it does give you kind of this, this dopamine hit.

And so I want low dopamine right during this stage so I can reset my dopamine receptors and be real sensitive there. And then I don't use any essential amino acids because I want for I want as much autophagy as I can during that phase.

Now, let's say, you know, like I'll use essential amino acids at times if I know that if I work out and then I have a lunch and then let's say I'm going to eat a little bit later, like, like today, for example, I've got to take my boys to basketball practice.

And so my dinner is going to be like 630, 7:00. And so I might take some of essential amino acids at like 4:00, 5:00 or something along those lines because it helps provide satiety for me and keeps me in muscle protein synthesis, which during that eating phase, I want to be in muscle protein synthesis.

Right. So after my workout, I want to activate mTOR, which I know you talk a lot about for muscle protein synthesis. And so usually I want three in a sense like three elevations of mTOR.

Right? Right after, you know, usually within an hour or so, an hour and a half of my workout, and then maybe three hours later and then maybe, you know, 2 or 3 hours later, something along those lines to get the optimal muscle protein synthesis.

But then after that, I want to get my body back into a state of autophagy. So I'm kind of cycling back and forth like that. And I work out six days a week.

And I just spread out upper body and lower body. So today's an upper body day where I'll do push pull exercises for my upper body. And then one day a week, I don't, I'll walk, but and play with my kids, but I don't do intense exercise.

And that's, that was yesterday. Right. And so that allows me to have that kind of full 24 hour fast or full rest for my body so I can really focus on cellular healing and clean up.

And I usually try to get extra sleep Wednesday night into Thursday as well. I love the routine. Yeah. It's phenomenal. My routine is very, very similar in terms of the fasting schedule.

Typically most days, 16 to 18 hours, like you, throw in a 24 hour fast, especially when I'm traveling, which I have been doing a lot. I usually it's the fast day.

I rarely eat when I'm when I'm traveling. Carbohydrate wise lately I've been doing mostly carnivore Monday through Saturday, and Sunday is a day where I flex out, what I call a metabolic flex or keto flex where I'll have fruit, white rice, some root vegetables, as you mentioned.

But the other days I'm mostly carnivore, and that works really well for me, at least right now. I do have some essential amino acids in the morning. Right before my coffee, because I am trying to put on about 10 pounds of muscle this year.

So I want a little bit more mTOR. And but I'm still sprinkling in autophagy with some fasting, sauna and of course the strength training. So my schedule is very similar to yours.

I don't work out. You said five times, six times a week you train what you see, I do. Yeah, yeah, yeah. Fortunate enough, I have a home gym, so, Yeah.

Same. Yeah. Yeah, I do too, I so I'll do about 3 or 4 strength training and then 2 or 3 cardio. But I also also listen to my body and see, you know, maybe today should be a rest day.

I look at my, like, heart rate variability like I had planned to actually work out today. And when I woke up, my, HRV was below average and my resting heart rate was a little elevated.

I think yesterday was I had like seven interviews back to back. So I think it was a little stressful for me. So I decided today is just going to be like a long walk day, get like 14,000 steps and then tomorrow I'll strength train.

So yeah, me since. Right. I wanted to stay in the right medic zone. Yeah. So I like the routine. We have a very similar routine. Yeah absolutely. If you're looking to gain gain muscle weight, which is like something I've always been trying to do, I would recommend doing doing more strength training or at least, you know, reducing cardio and, you know, adding in another day or two of strength training.

I think that would actually be helpful. Lots of, compound exercises. And then I don't know if you're using peptides, but, but I'm not reading stack, so.

Yeah. BPC 157 and Tb4 frag I take a capsule that morning and night. And that really helps. Proteolytic enzymes

can really help as far as what I find is that I just feel like I recover better.

Book Launch and Free Bonus Offer

You know, I'm a 43 year old man now, you know, and I feel like I recover better than I did in my, my 20s and 30s for my workouts. That's awesome. What was the second peptide that you mentioned?

Yeah, BPC 157, which is probably the most common peptide. And then tb4 frag you before frag. And you're doing that orally. Yes. And they sell them like I know on my, my store often off to send you out one if you send me your your email I'd love to try it.

Yeah. There's a company that my friend created. And he sells them together. It's called the Wolverine Stack. And the idea of that is that, you know, Wolverine from X-Men, you know, had a remarkable recovery.

Recovery? Yeah, exactly. And I've noticed that, you know, physically, just, I feel like I recover better when I'm using that regularly. Wow. And of course, you know, of course, you know, it doesn't make up for a bad lifestyle, right?

And I live a healthy lifestyle. But I think it it for somebody like you and I that that. Hey, we really want optimal performance. It's it's a needle mover.

And so it's something that something worth trying. Yeah. I'm excited to try it. Yeah, it sounds amazing. I want this Wolverine stack. Let's do it. There you go. Absolutely.

Well, Ben, this has been a great interview and, really excited about your book, Metabolic Freedom. I know, you know, at the time we're putting this podcast out, it's just come it's just come out and, and I know that you're doing great with the preorders, and I'm really excited for people to get this.

I really encourage all my listeners to go out and purchase this metabolic Freedom book, and, it's a great book, not only to read and to start, applying these strategies, but also a great book to give to somebody that you know and that you care about.

Because, like Ben said, 93% of Americans are metabolically inflexible. And so they're literally suffering with, metabolic, you know, lack of freedom, right?

And literally metabolic prison. And so this, this book can really help inspire them and give them practical strategies to get out of that and experience the promised land of health and healing, which is metabolic freedom.

And so, Ben, thanks so much for the time. Any last words inspiration here for our audience? Yeah. Thank you. David. No, you're, you're amazing. I appreciate our friendship and your support over the years.

The book is out. It's metabolic freedom, as David just mentions. Got some great endorsements. David gave it a beautiful endorsement. Doctor Mindy Powells wrote the foreword to the book.

It's available on hardcover. Audible. I narrated the audible and also, Kindle. And we actually have a free, gift we give we're going to give away for anybody who orders the book.

Today, we have a free course on the metabolism, 12 lessons that I built myself, along with exclusive interviews that you cannot find anywhere else with, doctor Jason Fong, Gary Brack, Doctor Daniel Pompa, Megan Ramos and Cynthia Thurlow.

And that's all for free. If you go to Metabolic Freedom Bbc.com, you'll see several places to order the book. Once you order it, you just put your name, email an order number, and once you submit that form, you'll get that course and the interview sent to you automatically.

So I would I would love for y'all to do that. Metabolic Freedom book.com. Awesome. So go ahead go to that

metabolic Freedom books. Com and Ben thanks again so much for your time.

Everybody be blessed.