Introduction to metabolic freedom

the model of calories in versus calories out, 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 way to to getting healthy, we get to healthy to losing weight. Meaning when you focus on hormone health and inflammation, your 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 do not have weigh your food, rely on sheer willpower and deprive yourself.

It actually is really easy. You're just removing the interference, allowing your metabolism and innate intelligence to heal the body. This is Dr. Talks.

Welcome to the Conquering Chronic Inflammation Summit. I'm your host, Dr. David Jockers. 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. He has a new book called Metabolic Freedom that is a best-selling book. 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, checkout Ben's Metabolic Freedom podcast as well. You can also check his website, benazati.com.

And he also has a popular YouTube channel with over 300,000 subscribers, just Benazate on YouTube. If you guys are in for a treat, again, checkout his book, Metabolic Freedom, all about what we talk about in this interview.

Metabolic dysfunction, which is most people in our society, is 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 a really powerful term, metabolic freedom.

Let's talk about that. We got 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 are dealing brain fog, their dealing weight loss resistance, all of these types of symptoms that are associated with Metabolic dysfunction.

Why are we seeing this in 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 stuck burning sugar. And there's nothing wrong with burning sugar as a fuel source, unless you're only burning, sugar, as, a, fuel, source.

It's, it's just, the opposite of metabolic for you. And it is a metabolic prison where you are relying on snacking and grazing and food to give you a short-term energy boost, but it, is not sustainable.

and at the same time, you, are 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, at 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 a 2016 study from the Mayo Clinic. We're set to determine how many Americans live what they consider an active, healthy lifestyle. And they based it off of four criteria.

So the first criteria was that they don't smoke cigarettes. Okay, easy. Second criteria is that if they were a male, they had a body fat percentage of less than 20% and female under 30%.

Why most people are metabolically unhealthy

The third criteria was that they exercised for about 150 minutes per week total, moderate to vigorous exercise. And the final criteria, was they ate what they considered a healthy diet, which 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, it got worse 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.

Then in 2022, which is more of a recent study showed it's closer to 93% Of Americans being metabolical unhealthy, so We have a big problem. We spend $4.6 trillion every year on healthcare in the United States, which would be the fourth largest GDP in world if it was a GDP.

And what's fascinating about that is that one out of every $40 spent on health care is spent in 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.

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. We need to take this really seriously. Sometimes we roll those statistics and we just think, oh, it's just the way it has always been, right?

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

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

So what's great about the Make America Healthy Again approach is that we're realizing, we are ringing the alarm on this, that this 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 hurt our entire country, And we got to do something about it.

Now, we talked about sugar burning. Obviously, We've got a burn sugar at certain times like when we're exercising, you know, what are the benefits of burning sugar?

And what the benefit of Burning fat for fuel and why should we kind of be going back and forth between those? Yeah, great. Great question. 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 books here, is split up into, first, half is about the problems, what has contributed to metabolic disease, second half as a solution, and then there's the 30 day plan with some recipes at the end of 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 healthy metabolisms.

What happens is this excess glucose pulls up in the bloodstream.

Sugar burning vs fat burning

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 full, when your glycogen stores are full.

Then it goes to your body fat and that what increases our weight and creates a weight gain. When we think about insulin, 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 a book that show you could have full-blown insulin resistance, hyperinsulinemia, For on average six to 14 years with your blood sugars looking perfect and your A1C 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 pre-diabetes and diabetes. So a fasting insulin test is one of 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 is 10 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, this important gaseous molecule. Nitric oxide vasodilates our blood vessels, opens up the blood vessel, allows for oxygen delivery, blood delivery and nutrient delivery.

Prevents heart disease, lowers blood pressure. When you strip nitric oxides from being a sugar burner, it vasoconstricts your bloodvassals which then narrows those blood vassal which makes your heart pump harder which is the leading cause to high bloodpressure, not the salt.

the sugar, right, because it strips your body away from doing that. But like you mentioned, David, when you're exercising, you are raising glucose, your dumping those, those glycogen storage, or your burning sugar as a fuel source, the benefit for burning.

It's quick and easy to get to. Like you could burn it, burn quickly. The drawback is that it's not sustainable. And if you've stuck burning, sugar 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 revamp that metabolism. And then you could go back from, burning sugars, and burning fats in a consistent manner.

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 gonna allow us to think sharply, quickly, be able to perform whatever we are 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 are sleeping at night, we wanna burn fat for fuel and that's so key. Now, insulin you mentioned is kind of one of the important, it's like the lock.

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

What are people doing that is causing elevations in insulin in our society? It is a great way to put it with the locks, 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.

It's predominantly 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 getting into a flow state in our office. And we're so dialed into our work and every two to three hours, somebody's banging on your door.

Maybe your kids do that, David, but somebody is banging at your. Yeah. Interrupting your flow state, this is exactly what insulin is doing to your metabolism.

It interrupts its flow of 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 up 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 or close condense it to a window where 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 snaking and grazing that's really producing this extraordinary amount of glucose and insulin.

Yeah, for sure. And then when it comes to carbohydrates, 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 insulogenic 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 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 fats barely, 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 insulinogenic.

If you're not doing it after like a strength training workout, just having whee protein. There's going to be huge glucose and insulin spike. That's really rapid.

And you could test that by looking at your post-prandial blood sugars, your postprandia glucose.

Insulin, snacking, and carb overload

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 of hours later, maybe not as high as the candy bar, But it'll 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, having oatmeal, and having oat milk, it's turning into a sugar in your body.

If you have a healthy metabolism and you do that from time to time, no big deal. But 93% of the people do not have healthy metabolisms. So it is a big, big for those people.

Yeah, I think that's an important consideration because, you know, there's a lot of people out there that will talk about, all calories are the same. You just have to hit your macros, keep your calories under control.

But the calories and the carbs that you're gonna get from eating candy versus eating an apple are gonna be different. And the way that your body is gonna respond to it are going to be difference.

So again, a there are a lotta people that are like, okay, just calories in, calories out, weight loss all comes down to that. There is a calories-in, calorie-out approach, but 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.

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.

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

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 is titled, We Need a New Paradigm for Fat Loss. and I talk about 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. 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 way to, get health, we get healthier to loose weight. Meaning when you focus on hormone health and inflammation, The weight comes off as a side effect.

The amazing thing about doing it this way is that you don't have to count a single calorie, you do not have weigh your food, 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.

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 feco-microbial transplant with good bacteria. Didn't change their calories, remained the same and they lost weight because their 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. It's the number one priority. Why would I continue 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 wrecked and your ghrelin levels, you're hunger hormone is through the roof and you leptin level for satiety have plummeted.

Yeah, we need to detach from the calories in versus calories out model and focus on hormones and inflammation. Yeah. That'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, if we're going back a thousand years or so, They're at optimal weight and they're in really good shape because they are doing a lot of work outside.

They eat when food is available and the eat well, right? They don't know, you know they don' have refrigeration, they dont have pantries. And they do not process food and so they eating really well.

When food available but there's a lotta times when the food not available. So they kinda cycling through this feast and famine period and in our society we're grazing all the time.

We have to be more intentional with it. You talk a little 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 at a calories deficit by grazing throughout the day.

A lot of people say the only reason why intermittent fasting works for weight loss is because you're in calorie deficits. But there is a big difference in intermittent and fasting and being on a calory deficit and grazing and in being a Calorie deficit.

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

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

So we are designed, like you said, to feast and fast. We, Dr. Pompa, 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 a kill, they didn't just like graze on them. They would feast. And then they would fast for a few days until they get their next meal.

That's essentially how our cells are design to thrive these days. Were hardwired for the old school and you wrote a whole book about this. Yeah. Feast, fame and cycling is the magic.

It prevents weight loss stalls. That prevents the metabolism from shutting down. You don't get all the negative effects of long-term colorectal restriction and you get the benefits for longevity and anti-aging from it.

Why calories in calories out falls short

So it's magical. Yeah, it's so key, you know, the old model of calorie restriction where you would be like munching on rice cakes, 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 cleanup process, that autophagy.

Most people in our society today are deficient in autofagie because we have food so available and we're in the sugar burning mode. When you are in sugar-burning, You're constantly thinking about food you're craving all the time, right?

Whereas when you are metabolically free, you really don't. I tell people all time I get hungry when I start eating. It's not like I'm hungry so I need to eat.

Okay, this is when kind of set my meal plan and I started eating and then all of a sudden my body, my appetite wakes up and it's like, oh yeah, now it is eating time.

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

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

I actually, well, not doing a long fast, but about 24 hours into a fast right now and I don't feel hungry at all, right? And I'll end up working out, all lift heavy weights, and still not feel hunger and wait maybe an hour after that before I end breaking my fast.

And feel great, so I am not driven by hunger. That's part of the freedom that you talk about. So many people are driven my hunger, early in my life, it was like when I was in high school, You know, my mom would never get the breakfast that I wanted, which was, you know fruit 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 Wheats. 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 fruit and then, on a good day, We would have orange juice with it because it's got vitamin C.

But like two hours later, I was sleeping in my high school English class, right? Cause I could barely keep my head awake. I would be so thirsty. Cause my blood sugar, would just have this reactive hypoglycemia and I will be hungry all day and moody all along.

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 egg, avocado and an egg.

So you would've had amazing energy levels. You would be 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? But the general nutrition recommendations would have been the steak and eggs, that's gonna cause heart disease, whereas the Cheerios are heart healthy.

And so we have to really rethink this. Yeah. Propaganda, propaganda. You know, Dr. 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 not the truth. And I'm glad we have this MAHA movement because it is going to show the true to a lot of people.

I am excited about this. Yeah, absolutely. Now you mention seed oil. 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 oils for so many years, right?

Now it is 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 oil are part of that conversation. So these are, seeds oils 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 the same thing. And they are in about 80% of our food supply in the United States. The reason they were so bad for us is because there's a couple of reasons why.

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 bond a fat contains and the closely they are located to other doublebond, The more reactive and unstable they to pressure, temperature.

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 your fry with it 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 Dr. Martin Grudfeld, where he looked at these seed oils, vegetable oils. He looked that French fries that were fried in vegetable oil and he was looking at the aldehyde contents produced after frying them.

Aldehydes are carcinogenic. When you smoke tobacco cigarettes, there is also an aldehide content being produced. That's how cigarettes are linked to cancer.

And he showed that a five ounce serving of French fries cooked in vegetable oil produced the same amount of aldehyde content from smoking 25 tobacco cigarettes.

So essentially one French fry cooked and vegetable. Oil is equivalent to one tobacco cigarette smoked in terms of the aldehide content. It's crazy. I mean, you think about it.

That means. You may have never smoked a cigarette in your life, but if you've eaten 10,000 French fries cooked in vegetable oil, which I have when I was younger, you essentially smoked 10 thousand cigarettes.

Feast-famine cycling and intermittent fasting

Not only that, if your giving your children a plate of 25 french fries, your essentially giving them 25 tobacco cigarettes, 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.

are going to be canola oil, corn oil cotton seed oil. Soybeans, safflower, sunflower oil rice bran oil and grape seed. 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 boogeyman saturated fat, butter, coconut oil ghee, duck fat beef tallow, lard from healthy sources.

And even monounsaturated fats are safe like avocado oil and olive oil. So that 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 lotta condiments. You know, if you go into Whole Foods, right?

Go to Whole Food, I mean, everything at Whole foods is healthy. If you in there, and especially like their hot bar, it's canola oil in everything. and you know that canole 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.

They're everywhere, even at nice, fancy, healthy restaurants. That's why I always ask the server, you know, Which oils do you cook your food in? I tell them I'm allergic.

I actually use a seed oil allergy card that I created and I show it to the sever and 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 is so worth. You don't want to take that hit. Two years is the half life.

They stay in your body. So I don' want take the 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 autopathy, you mentioned that earlier, it's where your bodies are so 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, the cultures, cell cultures and the individuals are not actually undergoing Autophage.

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

And, I've also looked at phosphatidylcholine. Ironically, it's an omega-6 fat, but it a really good omega 6 fat as another way to get rid of these bad oils faster as well.

Big fan of PCO. You find that in things like eggs, right? For example, phospho. Yeah, 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 master classes on autophage. You have your book, Fasting Transformation, where you talk about it right behind you.

The analogy I give for autofagie is as the refrigerator. When we think about our refrigerator, we open up that refrigerator and we have all these groceries inside of the fridge 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 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 body is 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 leading to what's called senescent cells and amino senesen cells, aging us faster, creating autoimmune disease, and 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.

The metabolism and innate intelligence is so brilliant because autrophagies is one step, but if a cell has no function, autofagie 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 programmed cell death, gets rid of the cell.

And then there is new cell that's produced, a stem cell and all of this is happening during a fast. Fasting is my favorite way to achieve autophagy, but you could also achieve it through exercise like strength training, burst training.

As you mentioned, David, most people. they're in an autophagy deficiency, just like they are in a keto deficiency because they aren't strength training.

They're not breast training, they not active, their sedentary and they snacking all day long. There never practicing fasting. So I love fasting, you're 24 hours into the fast.

You're getting some real good deep autofaggy right now. And the question that I always get asked, when does autohagsy start during a fast? I want to hear your thoughts on this after I just share my thoughts real quick.

Autophage 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 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 started 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?

Insulin needs to drop below this threshold, maybe like three units in your blood, you know, or whatever it is. We don' have that research. I would, hypothesize it somewhere around five, six 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.

Seed oils and processed food inflammation

It'll take down inferior proteins, these senescent mitochondria and different things like that, break those down and then create new proteins out of it.

For somebody that is 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 who's very metabolically inflexible. In fact, you take somebody like a type 2 diabetic and You know, honestly, like we almost need to wait like

a week before they're gonna really get into autophagy, right?

Because we would need fast them for a period of time before that insulin is gonna to really drop to that level. And that actually could be somewhat, you know it could 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 strategy you talk about in your book, 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 did you sleep that night?

What is your stress levels? Like what's your light exposure? Are you, are you getting a lot of blue light at night, or are not getting enough sunshine during the day?

All of these factors play a role in what your base line metabolic fitness is 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. Do you want prime them for that? And the reason why I wrote the book, one of the reasons is I put together that 30 day plan.

So at the end, this 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 you that process.

You're not doing much fasting. It's very simple. Lowering carbs, increasing protein and fat, eliminating the snacks. Week two, 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 pass 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 say glucose, blood glucose drop throughout a fast and But ketones rise and from 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 train. They'll see no ketone, 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're trying to do something healthy for your body, like by doing an intentional fast, but you are suffering as you 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 5K or you to need do this hour long, cross fit, high intense workout.

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

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

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

It's going to help their metabolic health. And then the next day, you know, add another half mile to their walk, right? And you kind of gradually build them up.

Well, it's the same with improving, from a nutrition perspective, improving our metabolic, health, It should be kind this gradual approach. Replace the bad foods, with more insulin friendly foods.

Blood sugar stabilizing foods stop grazing all the time and snacking. We'll kind of gradually build this process up. That's exactly right. The exercise example is perfect.

You don't want to go, me and Couch Potato are doing CrossFit, you're going to hurt yourself. Same thing, You want go from burning sugar to do these crazy fast.

Do you want a gradually built your way there? So that's the way the plan's laid out. And if you 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 advance protocol, depending on where you are at when you get to that point in the book.

But you're right, it all relates to hormesis, right? And I have a whole section in the book, page 29 actually shows hormosis, which essentially means you apply a stress to the body, you adapt to this stress, now you are healthier and stronger.

But if you applied stress on the stress and it's too much to adapt you, and now your inflamed and you aren't healthy, your actually going in opposite direction.

So you want to continue to apply these stressors which fasting is, exercise, all these biohacks are. and adapt to them, then you're stronger and then, you could apply more stress and you want to build up this hermetic ceiling to be able to do these different stressors which are really, really important for your metabolism and for you health.

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

Cortisol is a stress hormone. It's glucocorticoid that basically increases our blood sugar and that's natural and normal. And cortisol is also our, it's 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 there a thought that a 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 hormesis. They might say they do, but they really get it. That's like saying you should never exercise because it raises cortisol.

Okay. That's like saying like should never do a 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. They could be totally right. You're stressed out and you have, you're not sleeping well, your inflamed, You got work stress, relationship stress like you, have no business doing all these biohacks and doing always crazy fast.

Like that's too much for your body to adapt to. So they're right and they wrong at the same time. They just don't understand hormesis. And it's funny, David, because you understand hermesis, but a lot of people in our space, and I've been to a lotta conferences, they talk about a hermesis.

But then when I hear them giving recommendations from like different bio hacks, I don' feel like they understand Hermesis it. It's and if you understanding her meses, it really changes the way you view your health It's one of the most important health principles I've learned over the years.

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

And I talk about the HGH, or human growth hormone, to cortisol ratio. So when you are stabilizing your blood sugar, when your 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 alleviate.

Cortisol is catabolic, the growth-hormone balances it. It doesn't allow for the negative effects of the catabolic effects on muscle tissue. Preserve your lean body tissue, And it will also preserve the natural rise in key sex hormones.

Autophagy and cellular cleanup

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 are overwhelming our system.

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

or stressed out, whatever it is, and then the fasting could be overly catabolic for our body. And so it's all about this natural balance. But that's what most people that 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 effect the actual rise in growth hormone.

That's a really good point. Exactly. That why you don't lose muscle mass when you're doing these fast because of 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 would 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, if fat on your body, which we all do, If you 10% percent bodyfat, You have about a hundred thousand calories in your, body.

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

You could actually build muscle when you pair that fast with the feast and the protein, the essential amino acid. So it's actually an incredible way to build muscles.

And these health influencers, they just, I don't think they understand it or they have some sort of agenda or combination of both, but once you understand hormesis, you'll understand if the fast, biohack, exercise is working for you or against you.

Yeah, for sure. And I actually think that the HGH, the elevated HTH 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 was younger, even though I as younger and so I would have thought I had 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 of my, I had very little energy. You know, it was just hard to perform. Now I'll be 24 hours into a Fast and I will get my best workout.

I actually be extremely strong. We all, 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 are implementing kind of the proper amount of hormesis.

And that's really the key with hormosis is you need the right dose. You don't want to overload your system. In our biohacking society, our society is more is better, right?

And oftentimes when your a high achiever your 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.

We violate hormesis all the time. I see it all time, especially in the biohacking space. And you're right, I feel amazing when I work out in a fasted state.

99% of all my workouts are in that fast state because I'm not using blood flow and energy to digest. So I am using it for the workout and I felt great.

Do you take any essential amino acids or creatine during your fast or do you do 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 end our conversation, we should talk about our normal routines.

My optimal routine is on a typical day, I'm doing a 16 to 18 hour fast most days. I usually eat two to three meals, high protein in all of my meals. At this point in my life, actually don't intentionally try to reduce carbs.

but I don't eat like breads. If I'm eating a carb, it's fruit or it a root vegetable typically. And I feel great as long as I am getting enough protein, healthy fats, stay off the seed oils, things like that, and doing my daily intermittent fast.

Then one day a week I do a 24 hour fast, right? So yesterday I ate lunch and then I fast until lunch today, after my workout today. That's my typical routine and during those fasts, There's a couple of 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 a dopamine. I want to reset my dopamine pathways.

And although, you know, Stebia may not impact blood sugar and insulin a whole lot, although it may for some individuals. It does give you kind of this dopamine hit.

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

Hormesis, cortisol, and fasting adaptation

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 gonna 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 gonna be like 6.30, seven o'clock.

And, so I might take some essential amino acids at like four o clock, five oclock or something along those lines. Cause it helps provide satiety for me and keeps me in muscle protein synthesis, which during that eating phase, I wanna 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 Proteins 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 hours and a half of my workout. And then maybe three hours later, and then, maybe, two or three hour later.

Something along those lines to get the optimal muscle protein synthesis. But then after that, I wanna 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 upperbody.

And then one day a, week I don't, I walk and play with my kids, but I do intense exercise. That was yesterday, right? And so that allows me to have that kind of full 24 hour fast, a full rest.

for my body so I can really focus on cellular healing and cleanup. 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.

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

But the other days I'm mostly carnivore. 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, but I'll still sprinkle in autophagy with some fasting, sauna, and of course the strength training. My schedule is very similar to yours.

You said five times, six times a week you train? I do. Yeah. Fortunately enough, I have a home gym. I'll do about three or four strength training and then two or three cardio.

But I also listen to my body and see maybe today should be a rest day. 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 was think it was little stressful for me. So I decided today's just going to be like a long walk day, get like 14,000 steps and then tomorrow I'll strength train.

Yeah, amnesis, right? I wanted to stay in the medic zone. That's right. We have a very similar routine. Yeah, absolutely. If you're looking to gain muscle weight, which is like something I've always been trying to do, I would recommend doing more strength training or at least, you know, reducing cardio and, 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 were using peptides, but I use a green stack. So yeah, BPC 157 and TB4 FRAG.

And that really helps, proteolytic enzymes can really help as far as, what I find is that I just feel like I recover better. You know, I'm a 43 year old man now, you know and I feel I recovered better than I did in my 20s and 30s from my workouts.

Daily routines, supplements, and book promotion

That's awesome. What was the second peptide that you mentioned? Yeah, BPC157, which is probably the most common peptides and then TB4FRAG. TB 4Frag and you're doing that orally?

Yes. And they sell them, like I know on my store, I'll have to send you out one if you send me 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. The idea of that is that Wolverines from X-Men had a remarkable recovery. Exactly.

and I've noticed that. Physically, just I feel like recover better when I'm using that regularly.

Wow. Of course, you know, it doesn't make up for a bad lifestyle, right? And I live a healthy lifestyle. But I think for somebody like you and I that, hey, we really want optimal performance.

It's a needle mover. And so it's something worth trying. Yeah, I'm excited to try 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 at the time we're putting this podcast out, it's just come out.

And I that you're doing great with the pre-orders and I'm really for people to get this. Really encourage all my listeners to go out and purchase this Metabolic Freedom book.

It's a book not only to read and to start applying these strategies, but also a good book to give to somebody that know and that care about Because like Ben said, 93% of Americans are metabolically inflexible.

And so they're literally suffering with metabolic, lack of freedom, right? And literally metabolic prison. So 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.

Ben, thanks so much for the time. Any last words of inspiration here for our audience? Yeah. Thank you, David. You're amazing. I appreciate our friendship and your support over the years.

The book is out. It's Metablock Freedom. As David just mentioned, it's got some great endorsements. David gave it a beautiful endorsement. Dr. Mindy Pals wrote the forward to the book.

it is 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 free course on the metabolism, 12 lessons that I built myself along with exclusive interviews that you cannot find anywhere else with Dr. Jason Fung, Gary Brekka, Dr Daniel Pampa, Megan Ramos and Cynthia Thurlow.

And that's all for free. If you go to metabolicfreedombook.com, you'll see several places to order the books. Once you order it, you just put your name, email and order number.

And once you submit that form, You'll get that course and the interview sent to you automatically. So I would love for you all to do that. It's metabolicfreedombook.com.

Awesome. Go to that metabolic freedom book. com. Ben, thanks again so much for your time, everybody. Be blessed. Thank you for tuning in to Doctor Talks.

We hope today's episode has enlightened and inspired you on your path to optimal health. Each day is a new opportunity to make choices that empower your well-being.

For more insights and strategies, subscribe to our podcast and visit our website, www.doctortalks dot com. Stay connected, stay healthy, and join us next time on DoctorTalks, real talks from real doctors on the issues that matter to you most.