
# #603 How to Use Fasting to Fix Inflammation, Burn Fat, and Restore Energy Naturally With Dr. David Jockers

**Dr. Wendy Myers**

Hello, welcome to the Myers Detox Podcast. I'm Dr. Wendy Myers, and today we've got a great show for you on intermittent fasting, autophagy, chronic inflammation, and such good information on the show today with my guest, Dr. David Jockers. He's such an expert on this topic, and he's hosting the Chronic Inflammation Summit in a couple of weeks. I highly recommend you tune into that to get more in-depth information on what we're gonna touch on today in the podcast. On the show today, we're gonna be discussing how fasting activates autophagy, which is a cellular self-cleaning process that breaks down damaged mitochondria and cellular components, and how intermittent fasting and time-restricted eating can increase gut microbiome diversity and support beneficial bacteria.

We'll talk about how fasting improves longevity by clearing senescent cell like zombie cells and creating stress-resilient mitochondria and creating more of them. We'll talk about how you wanna gradually build up your fasting muscle through intermittent fasting and how that will prepare you for a longer fast, like three to five days. We'll also talk about the benefits of fasting, how it activates autophagy to break down all these cellular components and dead cells, especially your mitochondria, how it lowers your insulin, which allows fat burning and weight loss, how it increases ketone

production, providing alternative brain fuel and reducing inflammation, and how it promotes gut health by increasing microbiome diversity.

We'll discuss strategies like how to start fasting. You wanna begin with some nutrition changes, that is three high protein meals a day and removing ultra-processed foods and seed oils. We also talk about compressing that eating window gradually to eight hours a day, listening to your body, adjusting to your fasting schedule as needed, and building up to 24-hour fast before attempting a three to five-day fast. Also, fasting increases the release of toxins from fat cells. So, it's best to start using binders when fasting to help escort these toxins out of the body.

Dr. Jockers is a doctor of natural medicine and runs one of the most popular natural health websites in drjockers.com, which has gotten over 1 million monthly visitors. His work has been seen on popular media such as the Dr. Oz Show and the Hallmark Home and Family. Dr. Jockers is also the author of many bestselling books, such as Keto Metabolic Breakthrough by Victory Belt Publishing and The Fasting Transformation. He's a world renowned expert in the area of metabolic health, fasting, brain health, inflammation, and functional nutrition.

He's also the host of the popular Dr. Jockers Functional Nutrition Podcast, which has been consistently ranked among the top 50 health and fitness podcasts and has been number one in the world in nutrition podcasts. Dr. Jockers lives in Canton, Georgia, with his wife, Angel and his twin boys, David and Joshua and his daughters Joyful and Shine. So cute. Such cute names. If you wanna learn more about what we'll talk about on this show and get Dr. Jocker's books and incredible free content on his website, just go to drjockers.com. David, thank you so much for coming on the show.

**David Jockers**

Well, thanks so much, Wendy. Thanks for having me.

**Dr. Wendy Myers**

You wanna talk about autophagy and fasting. Why don't you tell us a little bit about that and why you're so passionate about it?

**David Jockers**

I always say fasting is the most ancient, inexpensive and powerful healing strategy known to mankind. It's ancient because all of our ancestors did it. They didn't have refrigerators and pantries, so their food supply was dependent upon a good hunt or a good harvest, and that was not predictable. There were a lot of times where they had good hunts and a lot of times where they didn't, same with the harvest. They had to undergo sometimes days without food. And the way our body is designed, our genetic blueprint is actually really good at handling times of famine. In fact, it's actually better at handling times of famine than prolonged times of feasting. In our society today, we have an abundance of food, which is a blessing. It's a great thing that you and I have pantries we can walk into. If something happened right, we probably have at least a week's supply of food. We can go and eat anytime we want. We actually have to be intentional about saying no in a sense to eating.

Most people in our society are eating all throughout the day and the way that food manufacturers are making food, it's actually making it to where we wanna constantly have cravings. It's overstimulating our dopamine receptors and creating addiction cycles to constantly eating and shutting down our natural satiety mechanisms. So, we've gotta get back to this ancient blueprint of undergoing times of feast and famine. Our ancestors, when food was abundant, they ate well, but then they would also undergo these natural seasonal famines. When we do that, it actually activates a self-cleaning process in our body. We call that autophagy, where our body actually starts to break down old damaged cellular organelles. In particular, the main one we look at is the mitochondria.

The mitochondria produce all the energy within all the cells of our body, but they do more than that. They're actually like the brain and nervous system of the cell. They're actually a sensory system or they're sensing what's happening in our environment. What kind of toxic load are we under? What's our stress levels? What level of pathogens and endotoxins are we exposed to at all times? They're sensing the environment and they're turning up or down energy production, turning up or down oxidative stress and inflammation based on what they're sensing in the environment. When they're producing energy as a byproduct, they produce oxidative stress, which is like rusting.

This is normal and natural. It's healthy. However, those mitochondria start to break down over time because of the oxidative stress. Our body needs to break down and recycle the raw materials and produce new, healthy, stress-resilient mitochondria. So, we need this seasonal cleansing and recycling process, and that's what happens when we are in a time of famine. When we're fasting, our insulin levels go down. Insulin is this amazing hormone and we can come back to all the great things that insulin does. But if we overstimulate insulin, it basically blocks autophagy. It doesn't allow us to break down these damaged mitochondria. It also doesn't allow us to burn fat for fuel when insulin is elevated.

Our ancestors would have times where insulin would be elevated, but then it would go back down below this certain threshold and then we would undergo this autophagy process in our society today because food is hyper palatable. It tastes great. We've got all these different sugars, carbs and processed elements, chemicals and things like that. All these things are designed to be very inogenic. They overstimulate insulin, which can cause more cravings, so we eat more. But also, it blocks our ability to undergo this seasonal repair, the seasonal internal cellular cleansing. And because of that, most people are deficient in this process of autophagy.

Just like we talk about a vitamin D deficiency or a vitamin C, zinc deficiency, autophagy is like an essential nutrient. You have to undergo this to be healthy. Most people are not undergoing enough autophagy throughout the course of a year, a decade, or a lifetime. It ends up leading to a whole wide range of what we call aged or senescent mitochondria that are not functioning well, that are metabolically inflexible, which can result in cognitive decline, chronic inflammation in the body, hormonal issues, trouble burning fat for fuel leading to weight gain, weight loss, resistance, fatigue, and a whole wide range of autoimmune conditions, cancer, you name it.

**Dr. Wendy Myers**

Who was this person that came up with eating three meals a day? Where did that come from? I cannot eat three meals a day. I'd be as big as a house.  I find that a lot of people that I know are doing really well. They're a healthy weight. They function

highly well. They are eating one meal a day and they're older. These are people that are a little bit older, but a lot of people function just fine on one meal a day doing intermittent fasting. But we'll get into that in a second. Talk to us about how there are so many benefits you talked about to fasting and in going into this autophagy state. How does one start doing that? I know when a lot of people start to try fasting, maybe it's best to start with intermittent fasting because it's hard to make that metabolite shift from burning carbohydrates to burning fat and people don't feel good. They don't like it and they abandon it. What are some tips around that?

**David Jockers**

I look at fasting like exercise. So, let's say a five-day fast would be equivalent to running a marathon. You don't just wake up one day and run a marathon. You train for it. If you have not been doing any sort of exercise, you don't wanna do a super intense workout. Instead, you want to do something, get out and get moving. Well, it's the same with fasting. The first thing I recommend is, the average individual they say is eating six to nine times a day. They're consuming some level of calories, and getting an insulin response six to nine times a day. So, the first thing we can do is knock that down to three times a day.  Eat three high quality meals with 30 to 50 plus grams of protein in each meal. Now, for some people it's really easy. Like for me, I can eat 70 grams of protein, 80 grams, 100 grams in a meal and feel great.

For other people, it's like, wow, that's a lot. 30 grams. That's a good spot to shoot for as a minimum. What happens is that protein helps provide satiety. We need to reactivate the satiety centers. We've gotta get rid of the ultra processed foods. Those things overstimulate our system. They create insulin and leptin resistance. Leptin is this hormone that's released from fat cells that circulates, goes into the hypothalamus in our brain and tells our brain that we're satisfied. And so, if we are eating a lot of these ultra processed foods, if we have high levels of toxicity, which I know you talk about, we develop insulin or leptin resistance, and we don't respond to that.

So, the first thing from a nutritional perspective is getting rid of the ultra processed foods, reducing overall sugar and starch intake in general, getting rid of seed oils, so all your corn, soybean, sunflower, cotton, seed oil, peanut oil, all those highly

processed vegetable oils. They just poison the mitochondria and shut down your ability to burn fat for fuel and you need to burn fat for fuel to have satiety. You have to become a good fat burner. So, we gotta get rid of those seed oils. Instead, we eat healthy fats at high polyphenol, extra virgin olive oil, coconut oil, grass-fed butter. Grass-fed meats in general are gonna have really good, healthy fats. Avocados, all those are really good fat sources. We're gonna replace that with that.

And then, as much as possible, we're trying to go as organic as possible. I know you talk a lot about toxicity, and that's a huge issue in this entire conversation. The more that we can reduce our exposure to chemicals, herbicides, pesticides, glyphosate, heavy metals, things like that, the better. If we go organic, we're gonna have more nutrients and less toxins. With our nutrition, we should be thinking about how can I get the most nutrients and the least amount of toxins per calorie I consume in a sense. Going as organic as possible is a really good idea. I know you probably talked about the dirty dozen and the clean fifteen, a really good approach when it comes to our produce. I always recommend, when you're looking at your meals, start with protein first. Think about it, okay, I need 30 to 50 grams of protein. What does that look like?

It could look like five ounces or more of beef or chicken or fish or something along those lines. It would be four to five eggs to get that amount. Start with protein, fat can vary. Some people can consume high amounts, of course we're talking about healthy fats, and feel great. I can eat a large amount. I can eat 60 grams of healthy fat in a meal and not have any issues and feel great. Other people, 20 grams will cause problems because they have very congested bile ducts. Maybe they don't have a gallbladder. So, the fat can vary. Focus on the protein, get the amount of fat that you can digest wel. I've never seen somebody struggle with 15 grams of good, healthy fat in a meal. That's a good starting point and then increase it to where you notice, okay, I don't feel like I digest that quite as well. Maybe it's 20 or 25 or 30 grams. Find your threshold and stick there and then fill the rest of your plate with colorful fruits and vegetables, as organic as possible.

That's a great way to start with your nutrition. Three good quality meals like that and what you'll notice is that you just start to feel satiated. You do that for a week or two and you'll notice, you know what? I don't really feel like I'm hungry for lunch. All of a

sudden it'll start to condense down to two meals unless you're very active, unless you're an athlete. I lift weights six days a week. So there are a lot of times when two meals are great. I eat one meal one day a week when I don't work out. But there are workout days where I feel like I need three meals. Your activity level is gonna break that down

Also, the amount of food you can consume in one sitting. For some people, especially if you don't have a gallbladder, you might need smaller meals. So if you eat two to three meals in, let's say an eight hour window, that's fine. You're still gonna get a lot of these benefits if you're following nutrition principles that I talked about for other people. Like you said, for many people out there, one, maybe two meals a day and they feel great doing that. That's phenomenal. That's awesome. That's telling me that their insulin levels are going down and their body's good at actually burning fat for fuel. We want to create metabolic flexibility. That means your body is really good at burning fat when insulin is down, but when insulin goes up, or if you're exercising, you're good at burning sugar, you can switch right into sugar burning.

You wanna be good at burning sugar when you're exercising or when you're doing something at a high intensity. You shot plenty of energy, plenty of endurance for that exercise performance. That tells me you're good at burning sugar, but then you shouldn't have a lot of cravings throughout the day. If you're having a lot of cravings, a lot of energy drops throughout the day and then you eat and your energy goes back up, that's telling me that you're not good at burning fat for fuel. If you're waking up a lot at night, it could be an issue with burning fat for fuel effectively and blood sugar stability. We wanna have the best of both worlds, great fat burner, great sugar burner, and then you're gonna have all day energy, great mental clarity, great performance, great sleep, and all the great benefits that we want from our quality of life.

Intermittent fasting is a great tool to help us get there. But again, you gotta start somewhere. I recommend starting with diet changes, nutrition changes, take out the snacking, take out those processed foods, get that blood sugar dialed in, and then you'll start to notice you're naturally satiated and you can start compressing your eating window right by eating window, that is the time you start eating to the time you finish eating that day. A real popular approach is what we call a 16-8, where

you're fasting for 16 hours. Let's say you finished dinner at seven o'clock, or eight o'clock, and then you don't eat until 11 or 12 o'clock the next day. That would be a 16 hour fast.

And then an eight hour eating window is where you're eating between 11 and seven or 12 and eight. That's really popular. A lot of people do that, and they notice that they have better energy, better mental clarity, burn fat more effectively for fuel, less pain in their body, and their hormones are functioning better. It is a very popular and realistic approach for most people.

**Ads 16:28**

This show is brought to you by Bon Charge, and I wanna take a minute to tell you about one of their amazing products that I'm absolutely in love with. There's something I've been doing for about 10 minutes a day, and it's wearing a face mask, but it's not just any face mask. It's this Bon Charge red light face mask, and it's essential to my nightly skincare routine now. Believe me, red light therapy really works. It's well established in the research to improve the appearance of your skin. How it does that is it penetrates deep into the skin to boost collagen production. It reduces the size of your pores, reduces inflammation, and eases the signs of aging.

Bon Charge's red light face mask makes it so easy to take care of your skin. It's like a mini spa session every night that I'm doing. It can be used easily at home. There's no cord, so you can wear it while you're doing other tasks. Plus, the mask is totally painless and it doesn't heat up. Unlike some other beauty, anti-aging treatments, Bon Charge's red light face mask has been a game changer. It's part of my everyday skincare routine now, and I'm seeing such great results already from using this mask. My skin is more clear, it seems more plump, fresh, juicy, and my redness and dark blemishes are fading.

There's a very special offer for all of my listeners right now. My listeners get 15% off when you order from boncharge.com and use my promo code, Wendy at checkout. This discount applies sitewide, and you'll also get free shipping and a 12-month warranty. Go now to get this exclusive offer. That's boncharge.com and with promo code, Wendy, you get. 15% off. This is one of my secrets to super healthy

young-looking skin. I'm trying to reverse the clock. I'm trying to do everything I can to anti-age and this is one of the secrets in my toolkit

**Dr. Wendy Myers**

As you start practicing that, you're going from eating maybe three meals a day or compressing those within that eight hour window and you really start listening to your body. I found I could go from three meals a day to two meals a day. And now I'm finding, well, wait a second now, I think I can do the one meal a day, but some days I need two, depending on my activity level, but I really just started listening to my body. I'm really not hungry right now. I don't need to eat this big gigantic meal. I'm finding that

**David Jockers**

You're doing it the right way there, Wendy. It is in a sense an intuitive approach. It doesn't have to fit into the same box every day. It doesn't have to be rigid. It doesn't have to be, okay, I'm only gonna do the OMAD one meal a day because I saw all these YouTubers getting great results. Or, I'm just gonna do 16-8. But instead, it is an intuitive approach where you're listening to your body and you're saying, you know what? I'm really not hungry. I'll just go longer. I'll fast longer today. Or, you know what? I am hungry. I'm going to eat. I'm gonna get two good meals today. I'm not gonna do the OMAD today. Maybe I had more activity or I didn't sleep as well or something along those lines. One of those variables could cause you to feel a little bit more hungry.

**Dr. Wendy Myers**

I find that if I take spirulina every day, I have much less hunger because I'm just getting this huge amount of nutrition from that. Spirulina is great. So I just don't eat as much food.

**David Jockers**

That's great.

**Dr. Wendy Myers**

My body's not crying out for that food. That nutritional density is so key in controlling your cravings. When someone starts doing intermittent fasting and they start closing that window and they start feeling like they're getting more metabolically flexible, what does a fast look like? Where should people start? Should they do just water or bone broth or what are your thoughts on that for fasting?

**David Jockers**

Well, I recommend before you get into an extended fast, ideally there's two ways of doing it. You could do it the really uncomfortable way or the more comfortable way. I recommend getting it to where you're able to do a 24-hour fast. This is something I do every week, roughly a 20 to 24 hour fast, ramping up autophagy at that point. When you get to that point, you're very metabolically flexible and now you can advance it. You might want to do a three or five day water fast, for example. There's some amazing research and benefits that can come from that. There's also an approach where you do what we call a fasting mimicking diet. There's a company ProLon that's doing lots of research on this.

You don't really get a lot of incentive in doing research on fasting because there's not something that's gonna be sold with it. Now, the fasting mimicking diet, they actually give you a box of foods. So, you're actually eating right, but you're getting a lot of these same benefits of fasting because you're not activating the key nutrient sensing pathways. You're not getting insulin above a certain threshold. You're not getting some of the other nutrient sensing pathways like IGF one above a certain threshold where it blocks autophagy. And that's the science of it. You're still eating. For people that are on medications, things like that, they need to take medications with food, for example. It's a great approach because you're still able to do that, and still get a lot of the great benefits of fasting with that as well.

But, for a popular approach out there is a three or five day water fast. Again, I recommend once you get to the point where you can do 24 hours without food, just hydrating your body and you feel fine at that point, that tells me you're metabolically flexible to go the next step. You can do a three or five day fast. Try that out. Typically day two and day three usually are the hardest. And then by the end of day three, and

for many people by the middle of day three, hunger goes away. You're not really hungry. You're resetting your dopamine pathways as well. Every time we eat, we get a hit of dopamine, which makes us feel good. That's a beautiful thing about eating. It's a wonderful thing that we can feel good while we're eating food, but we get addicted to that.

And for many of us, we're eating emotionally. We're eating for that dopamine hit, that sense of pleasure because other things in our life are not giving us pleasure. We're trying to fill that with food. For a lot of people, as they're going through that, they're dealing with a dopamine withdrawal, which can make it difficult. You just have to prepare yourself for that and prepare your mind that you may have swings of energy. You may have almost an emotional crisis, or an emotional issue because you're so used to quenching certain feelings, loneliness or whatever it is with food.

All of us have probably done that throughout the course of our life, at least at some point. I know I have. You just have to be prepared for that. But it's one of the healthiest things you can do for your mind, body, and spirit. That said, just be prepared for that. Hydrate your body. I recommend taking some salt. You're gonna lose sodium when insulin goes down. I keep talking about thresholds. It's like this line. You never really get rid of insulin, unless you're a type one diabetic and you can't produce it, in which case that's a different conversation.

But for everybody else, insulin is gonna go up and down in our bloodstream based on our stressors, toxins that we're exposed to, and food. The main trigger is the food that we're consuming. With that said, once insulin goes down below this certain threshold, that's when we start burning fat. That's when we start undergoing autophagy and things like that. Now, when insulin goes down below that threshold, we excrete sodium and water. So when they say, for example, people with hypertension, high blood pressure, they'll say, be on a low salt diet. Well, most of those people are on a high carb diet and they have insulin resistance, so they have to be on a low salt diet.

What they should do is actually just stabilize their blood sugar and insulin levels. Then they don't have to really worry about the salt because they'll start to excrete it naturally. And if you're not consuming it in the food, because you're fasting, you need to just take it on the side. Just taking some extra salts will help you with your energy

levels, will help you with your mental clarity and reduce cravings. You could even just take a good quality salt, like Redmond's real salt or Celtic sea salt or something like that, and just put it on your tongue. Whenever you're feeling like your energy's down, just put a little bit of salt on your tongue and drink some water.

A lot of times you'll notice that that just makes you feel a lot better. That will help you sleep as well, and that's super helpful as you undergo this process. Usually by day four, you feel amazing. Most people feel amazing. In some circumstances, some people, because their body starts healing deep damaged areas, a smaller percentage of people actually start to notice pain in their knees or L5 disc or whatever it is, because the body starts to actually say, wow, there's all this scar tissue built up in this area. And the innate intelligence of our body knows we're always looking for resources.

When we don't have the food coming in, we need proteins to make new white blood cells that carry out all the major functions of our body. So, we need to get the protein from somewhere. We'll start to break down old damaged scar tissue. We need fuel. So we'll start to break down visceral fat in particular first before subcutaneous fat. Visceral fat's not essential whereas subcutaneous fat is essential. We'll start to break down these old damaged mitochondria like I was talking about. So we're getting the protein, we're getting the fuel from somewhere, and for many people we've got scar tissue from old injuries and our body will start to metabolize and break that down.

And in some cases, that will trigger more inflammation and will actually feel more pain. But we're undergoing a deep healing process. Now that's a smaller percentage of people. My experience is you're roughly 75 to 80% feel really good by the time they get to day four or day five. They feel really good. And again, these are people that have already done like a one day fast before they got started. By that point, they're super fat adapted. Their ketones are really elevated. Ketones are a breakdown product to fat. The difference is that so most of our cells can produce energy from fatty acids, but we can't get fatty acids across the blood brain barrier because they're too large.

Our liver breaks fatty acids down into these smaller water soluble molecules we call ketones. Listeners have probably heard of a ketogenic diet. Well, you can produce

ketones naturally the way our ancestors did. It wasn't by eating tubs of butter. It was by fasting. It's just a natural mechanism of our body. We start to create these ketones. The ketones elevate in our bloodstream. They cross the blood brain barrier. They're a fuel source for the brain, but they're also an epigenetic modulator, and that's a big term, meaning that they actually help tell the genetics in our body how to express themselves in different ways. In particular, they reduce these vicious inflammatory cycles in our body. We call it inflammasome. They reduce overall inflammation in the body and in the brain. They have some incredible benefits. For example, they help balance out different types of neurotransmitters like the glutamate GABA ratio. Glutamate is like the gas pedal on the brain, GABA's the brakes.

When we have brain inflammation, we get too much excitatory activity, which is glutamate and not enough breaks in the brain, GABA. Ketones help balance that ratio. They are a really great stimulator for what we call mitochondrial biogenesis formation of new, healthy stress resilient mitochondria and mitophagy as well, where we break down the old damaged mitochondria and turn them into new healthy mitochondria. They increase the amount of mitochondria and the quality of our life ultimately is gonna come down to the amount of high functioning, stress resilient mitochondria, and in particular in our brain. Our brain is the most dense area by far for mitochondria outside of reproductive organs, testes, and ovaries.

The brain is extremely dense in mitochondria. As we start to create new healthy mitochondria, we notice it. We might feel more creative. We have better mental clarity, better clairvoyance, and better intuition. We're able to think sharper and quicker. All of those great benefits. A lot of people fast. I'm a Christian, and so in my walk, I've heard of a lot of people that said, Hey, I did this quote unquote fast.  I did this seven-day fast, this five-day fast, and I felt like God spoke to me, and such and such happened. I think that we're just more attuned.

We're more attuned to the Holy Spirit, more attuned to your intuition, whatever it is that you would want to call it. People of all different faiths have noticed pretty amazing breakthroughs when they fasted. And I would credit it from a physiological perspective. I believe in the supernatural, of course, but from a physiological perspective, I would credit it to this increase in ketones, the increase in the

mitochondria in the brain, the balance of the glutamate-GABA ratio, and decrease in inflammation in the brain. It really allows us to be at our full potential. And so it's more exciting. You're pretty present

**Dr. Wendy Myers**

I think people are more present, more still and they're able to get those messages and get closer to God in that way. Are you a big fan of taking ketone supplements?

I know this is really popular and being pushed a lot. It doesn't really seem to make a ton of sense to me, but what are your thoughts on those kinds of supplements?

**David Jockers**

I think they can be a helpful tool. They don't replace our body creating its own ketones, but can be a very helpful tool, particularly, we talked about using fasting like exercise, gradually building up your, what we call your fasting muscle. You start by three meals stabilizing your blood sugar, then you start to stretch and kind of push into a tighter eating window. And for some individuals, those ketones will notice that, and they've been clinically shown to reduce cravings and provide this alternative fuel source for the brain. So, there's a level of metabolic adaptation that has to take place for our body to be able to use ketones as an energy source. For a lot of people when they first go on like a low carb diet or they start fasting, they don't have the metabolic machinery to use the ketones as energy source.

They just pee them out and if they're testing their urine strips, a lot of times they're like, wow, this is amazing. I got so many ketones in my urine, but I feel terrible. Their body's not using them. Sometimes increasing the ketone levels spurts them across into the blood or into the brain, and you start to get better energy from that, or training your body as a training mechanism that can be really helpful for improving energy levels and also athletes as well.

Athletes have noticed significant improvements utilizing the exogenous ketones, and even like people for example. It was actually a study, I think it was like a 2007 pilot study where they took MCT oil and they went into a nursing home. If you're in a nursing home, there's a good chance you got cognitive decline. And so they had like

a whole wide range of people that had cognitive decline. They were doing a certain questionnaire with them to track where they were with their cognitive decline. The food they give these people is terrible. All they did was add MCT oil, which basically is almost like a ketone. It turns quickly into ketones in the bloodstream. So they added MCT oil for I think it was like a 60-day study. And then they retested a certain group. They had a placebo, they had a control group, and then a non-control group. The control group continued to decline and the non-control group actually showed improvement, and all they did was add in the MCTs.

For people that are at a later stage with cognitive decline, people that don't wanna make diet changes, getting MCT oil or exogenous ketones can actually be really great for reducing cognitive decline. We've had family members who think they're too old to change their diet. Well add in maybe some C8. Now we've got the science to show that a C8 only MCT oil turns into ketones, the quickest caprylic acid and it goes right into the ketones that feed fuel right into the brain. It's tasteless. So it's easy for somebody to just add it right into anything.

You can cook with it. Cooking doesn't damage it. You can do that, or you could take one of these exogenous ketone salts or esters or something like that and see improvement. So for people like you and I there is less of a need for them because we can just get the ketones elevated in our body because we're motivated for it. But for individuals that have less motivation or just starting out or high level athletes, I think there's a lot of clinical use.

**Ads 33:23**

I want to take a minute to talk about the health benefits of olive oil and thank one of the sponsors of the Myers Detox Podcast called Fresh Press to Olive Oils. Like many of you, I'm always trying to eat healthier, and that's why I love really good olive oil. I eat olive oil every single day for its many antioxidants and longevity benefits. Olive oil is the cornerstone of the Mediterranean diet, proven to be among the healthiest in the world. Sicilians from Italy and some islands in Greece have some of the longest-lived people in the world because they're eating olive oil every single day.

Check out this article from Life Extension Magazine: Olive Oil Markedly Extends Human Lifespan. In a long-term clinical study, those who ingested the most olive oil derived

polyphenols live 9.5 years longer if they're over the age of 65. The Harvard School of Public Health has announced the results of a 28-year study showing that just over a half a teaspoon of olive oil per day is associated with a lower risk of dying from cardiovascular disease, cancer, neurodegenerative disease like Alzheimer's, and respiratory disease. It's been shown in the research to reduce high LDL cholesterol. It helps prevent type two diabetes, high blood pressure and obesity, and it may also help to prevent arthritis and osteoporosis. There are so many health benefits. So, whenever you buy olive oil, the four most important words to remember are the fresher, the better.

Olive oil packs the most flavor and the most nutrients when it's fresh from the farm, and that's the problem with supermarket olive oils. They're not fresh. They can be sitting on the shelf for months transported over sea on ships, losing the polyphenols and antioxidants with the healthy fats even going rancid, the longer they sit in the bottle and that defeats the whole purpose. Not only that, but most olive oils sold in the US are not actually olive oil. They're mixed with canola and other unhealthy industrial GMO seed oils that you're trying to avoid by choosing olive oil in the first place. It's really shocking that this has been allowed to happen, but there just isn't much oversight in the industry. That's why I stopped buying olive oil from the grocery store years ago because you just have no idea what you're getting.

That's why I love getting my olive oil direct from someone that I trust, that is from TJ Robinson, who's known as the olive oil hunter. He has found all these artisanal small farms producing olive oil like they've done for thousands of years. I look forward to my quarterly shipment of olive oil from Spain, Italy, Australia, and other countries. This one is from Portugal, and depending on the country, the olive oils are ripe and in season. They press the olive oil and they bottle it and they send it to you right away. So, it's the freshest that you can get. And so when I tasted TJ's farm fresh oils, I fell in love with them. They're so fresh, they're so pungent. This is how olive oil is supposed to taste, and they're incredibly delicious on salad, veggies, pasta, meat, fish, you name it. Olive oil also has zero carbs, so it's ideal for low carb ketogenic and paleo lifestyles.

As an introduction to his fresh pressed olive oil club, TJ's willing to send you a full size $39 bottle of one of the world's finest artisanal olive oils, fresh from the New Harvest

for just $1 to help them cover shipping. You can go take advantage of that at getfreshwendy.com. You get a $39 bottle for only one dollar at getfreshwendy.com.

**Dr. Wendy Myers**

Okay, fantastic. And what do you think about, you said doing water fasting. Can people add juice to that? Can they add bone broth? Do you think those are helpful? Or those maybe are just for the beginners that maybe want to give themselves some satiation or nutrition?

**David Jockers**

It really depends on your goals. You certainly can do that. Lots of people have gotten great results doing green juice fasts. You're familiar with that. You've been in the natural health world for a long time. That was a huge thing for a long time. It was like, okay, do three days and only and drink these six green juices and carrot juices. A lot of natural cancer clinics do this. This would fall into this category of partial fast. You're consuming calories, but it's extremely protein restricted. In general it's not spiking your insulin and it's overall a lot less calories than you would normally consume and you're getting nutrients in. Is it going to disrupt autophagy? You're not gonna get as much autophagy fat burning as you would on a straight water fast, but it may be a more enjoyable experience for you. And you're also gonna get crossover benefits of some of these. You get some of these phytonutrients into your system, and you're still gonna get a high amount of autophagy compared to a normal eating period.

Here are a couple things that break autophagy. A certain amount of calories is gonna break autophagy, and then also in general, anything that increases your insulin levels above a certain threshold and any branch chain amino acids, where we find in all of our muscle meats and all this stuff. Now, there are not many branch chain amino acids. In fact, I think there is no leucine actually in bone broth, or collagen peptides, for example. Leucine is this amazing branch amino acid that stimulates muscle protein synthesis. So if we wanna build muscle, leucine is what we need.

But if we're not trying to go through an autophagy period, we actually want periods of time without leucine. If we're trying to get the benefits of deep autophagy for three to

five days, we don't want the leucine. Doing something like a green juice fast or a bone broth or something like that, we're gonna get minimal to no leucine. We're still gonna be undergoing autophagy as we're going through that process. I was talking about that fasting mimicking diet. They've really done the research on, nobody's actually taken somebody, at least I haven't seen any research on somebody doing a three or five day juice fast and figured out this is the exact formula to maximize, like drink these juices and that's it.

You'll get these stem cells released on day four, this amount of autophagy, whereas ProLon has this standard box food. It's a plant-based low carbohydrate plan, that's non GMO and all this stuff, gluten-free. And so you eat these foods and they've been able to take all these people and then test them. These people undergo testing to where they know when autophagy's elevating, when they know when the stem cells are being released. So it's more clinically proven, but I would say that the same types of things are happening for people that are doing a juice fast or a bone broth fast.

Of course, you could consume 5,000 calories worth of carrot juice, I guess, if you're consuming enough of it to where you're gonna negate a lot of those benefits. But, if you're doing it the way that I'm sure Gerson, and a lot of these natural cancer clinics are having people do it. The reason why they're getting results is they must be stimulating autophagy, getting a stem cell release, deep cleansing, and all of that kind of stuff.

**Dr. Wendy Myers**

Do you have any tips as far as maybe taking binders when people are fasting? When you're releasing all of these fats and you're breaking down fat cells, you're also releasing a lot of these fat soluble toxins like the PFAS, forever chemicals, pesticides and the others. That can contribute to not feeling well.  I think a lot of people think the low carb flu or not feeling well via fasting is because a lot of these toxins are circulating, causing problems. Do you have any tips for that?

**David Jockers**

Yeah, I think binders are really, really helpful. A couple things can be helpful. Extra magnesium to keep the bowels moving can be helpful. Ultimately we gotta pee and

poop our toxins out or sweat them out or breathe them out or a combination of all of those things. Most of our toxins actually release a high amount of toxicity through breathing, through respiration. So breathing and even going out, taking walks, things like that and really trying to breathe out toxins is helpful. You can get in a sauna or get out in the sun and sweat. That can be really helpful. You gotta hydrate well. You're peeing and pooping out those toxins. Even if you're doing a fast, you wanna move those things through your system like a river rather than stay stagnant like a pond.

You're actually producing a number of different types of toxins. All the things you talked about, the forever chemicals, metals, things like that, we tend to store those into fat of our body. Fat is the safest spot for our body to store these toxins where they're gonna have the least amount of physiological impact, but they're still causing low grade inflammation in the system. And so when we release them, as we start to burn through fat, those toxins will release into our bloodstream, ideally filtered out through the liver and then out through the kidneys or the feces. This is the ideal approach, or sweating them out or something like that.

If we're not keeping things moving well, they're gonna recirculate find some other place to lodge and cause more oxidative stress and inflammation. So, a binder can really help. It helps escort grab and escort those things out.  I know you have a lot of experience with binders of a number of different ones., zeolite, fulvic acids, charcoal, and spirulina. Chlorella is a little bit more of a binder than spirulina. There's a wide range of these things. There's even bovine serum albumin, colostrum, that acts more as pathogen binders than toxin binders. But there's all different types of binders that are out there that can be helpful.

I highly recommend taking a binder, taking perhaps a little magnesium, especially if you're noticing you're not moving your bowels as well, which is not uncommon, and taking the electrolytes, I think is really helpful. Another thing I think is helpful would be molecular hydrogen or hydrogen water. I have a hydrogen water system, so I'm drinking that all the time. Molecular hydrogen helps to buffer oxidative stress in the mitochondria. And then also getting exposure to infrared. So get out in the sun, ideally, if you're able to. I know you used to live in Mexico, a lot of good sun exposure there. The sun naturally has the infrared. Infrared stimulates mitochondrial melatonin and that melatonin in the mitochondria is this powerful free radical sponge. It

actually slips into the mitochondria, helps set the circadian rhythm, but also protects the mitochondria from oxidative stress and in particular supports the superoxide dismutase pathway, which tends to be the major intracellular antioxidant. It's kinda like the rate limiting one, that we're not able to keep up with the demands of superoxide production.

Mitochondrial melatonin's huge. So, if you can't get good sun exposure, infrared sauna would be the second best thing or do both. You're getting the heat that way with an infrared sauna. You're also getting the infrared to stimulate that mitochondrial melatonin also stimulates nitric oxide. It increases blood flow into the area, which will help pull toxins outta the regions. I think that's really helpful.

When you're fasting, you're also gonna be releasing endotoxins. You have exotoxins, which are the forever chemicals, phthalates, heavy metals, and things that are coming from the environment into us. But then you have endotoxins, which are gut bacteria that are dying. They're not being fed. So there's a lot of gut microbes that are dying, and their cell membranes are breaking down. In particular, there is one that's been really well studied. It's called lipopolysaccharides or LPS and that can release into the bloodstream and trigger a lot of inflammation in our body as well. Moving the bowels really helps with flushing that out. That can be helpful and binders also can help with binding LPS and helping pull that through the system. So, definitely I would highly recommend it. I think that's a great, great suggestion.

**Dr. Wendy Myers**

It definitely can help mitigate any uncomfortable symptoms. Maybe not the hunger, but the detox symptoms for sure. Can you talk about how fasting can really help with the gut microbiome? I know so many people's guts and gut dysbiosis, so many people are dealing with a lot of gut issues because there's so much working against our gut for sure.

**David Jockers**

Most people in natural health realize microbiome plays a critical role in our overall health. More and more research comes out about this. When we look at what microbiome researchers, the top experts are saying now, they're saying that when we

look at the microbiome, the overall diversity of the various species is a critical factor with overall metabolic health. Meaning that the more diverse your microbiome, the higher number of overall different types of species in your gut, the healthier your microbiome is. Most researchers say the number one way to increase the diversity of the microbiome is to eat a whole bunch of prebiotic plant foods.

That is one way to do it. But what they've also found is that actually intermittent fasting is an incredibly powerful way to increase the diversity of the microbiome. It's kind of counterintuitive. You think, well, they eat the fibers. So we need all these different fibers to keep them all fed in a sense.  But the interesting thing is that when we look at the microbiome, there are really two major classifications, primary feeders, and secondary feeders. There's a couple classifications we could talk about. We can also talk about anaerobic bacteria, and I'll come back to that shortly. But to start, we will talk about primary feeders that live above the gu mucosa and secondary feeders that live in the gut mucosa.

The mucosa is this mucus layer that's right above, and we're talking about the intestines. It's in all of our epithelial linings. We have mucus layer in our sinuses, respiratory pathways, but in our gut, it's right above, particularly in the small intestine one. There's one cell layer in the small intestine, and then we had the mucosa right above that. The mucosa is actually where our immune system is. People always ask, where is the immune system? What organ? Well, 80% of it is in that mucosa. We also have a thymus gland, spleen, and bone marrow that helped produce white blood cells. But the predominant area where our immune system is, is in that mucosa, in particular, in the gut because it's so big.

That's where our primary interface between our external environment and our internal environment is, and it's very sensitive. The gut lining is only one cell wall. Whereas our skin is obviously another interface between the external environment and the internal environment, but we have many layers of skin to help protect us. Our small intestine is designed for nutrient absorption because our ancestors were exposed to so many times of famine. And today we don't have that. Instead, we have a higher amount by far of toxin exposure than ever before. We're consuming all these microbes as well, whenever we're consuming food.

All of that's putting stress on that one cell wall and the mucosa. What happens is when we're constantly eating, we're overfeeding the primary feeders that live right above the mucosa and that drowns out the ability for the secondary feeders to thrive. In that deep mucosa, those secondary feeders. Some of them are pretty well studied and one of them is called riman eosinophilia. Eosinophilia means mucus loving. It can survive on the gut mucosa itself, but it loves polyphenols. And when it's able to consume polyphenols from fruit, herbs, olive oil, and things like that, then it actually breaks those polyphenols down into something called urolithin A, which stimulates Mitophagy in the intestinal cells, right in the enterocytes.

Mitophagy creates new, strong, more stress-resilient mitochondria in the small intestine. That's what we need to have a healthy gut lining to keep inflammation under control. The issue is that when we're constantly feeding, we drowned out Akkermansia's ability to get the polyphenols. We don't produce that urolithic, we don't get the proper amount of mitochondrial autophagy occurring. The intestinal lining will start to break down because of that. And so when we fast, we actually kill off a lot of these primary feeders. They don't have enough fuel, so they die off, which opens up more room for the Akkermansia.

The best way to understand this is this analogy. In my yard here, I've got an apple tree and I've got a blueberry bush. The apple tree grows tall and the branches grow quickly and it will drown out. We have to prune it every year. We have to cut down a lot of the branches so that the blueberry bush gets sun exposure. Otherwise we don't get blueberries. We have a choice. We can either have this huge abundance of apples and no blueberries or a little bit less apples and blueberries. Every year we prune it, we trim back the hedges and a lot of the branches on the apple tree, which now allows for the blueberry bush to be able to have its proper harvest. Now we're able to enjoy the benefits of both the apples and the blueberries. It's like that in the microbiome. We need space for these secondary feeders.

Now, another way of also understanding this is that the primary feeders tend to be what we call, well, they're aerobic or facultative anaerobes. That means that they can survive in an oxygen based environment. The facultative anaerobes like a low oxygen environment, but they can survive in an oxygen environment. Aerobic bacteria survive in an oxygen based environment. The ones that are in the deep in the

mucosa, like akkerman eosinophilia. There are a couple of other ones like fecal bacterium Prezi, that have been pretty well studied for their metabolic benefits across the board. People with higher amounts of these are called obligate anaerobes and they're short chain fatty acid producers. They produce a lot of butyric acid and ULI and all these things that help strengthen the mitochondria and the intestines.

These bacteria have been shown to have higher, when you have good amounts of them, you have a lower overall risk of all different types of inflammatory and metabolic diseases. They can only survive in an anaerobic environment. This is really important. The mitochondria, when it's healthy, it sucks oxygen out of the environment in order to produce energy. It's called aerobic respiration. That's how it produces energy. When it's not healthy and metabolically inflexible, it relies on glycolysis. It can't burn fatty acids, and it starts burning energy by just burning down, breaking down sugar as an energy source and not taking the oxygen outta the environment.

So when you have an abundance of intestinal cells with unhealthy mitochondria, you can't pull the oxygen outta the environment. Therefore you're gonna have a high amounts of aerobic bacteria. You're not gonna have the obligate anaerobic bacteria, which are so critical for your overall health, and then you're gonna have the facultative anaerobics. We look at what types of bacteria are facultative, anaerobics, and aerobic bacteria. It's a lot of these bacteria that show up as pathogens or histamine producers, Klebsiella, ciob, backer, and a bunch of the ecoli strains. A lot of these will associate with a lot of different autoimmune diseases and histamine intolerance issues and things like that. The key is we need healthy mitochondria in those intestinal cells to pull that oxygen out and create the right environment for these obligate anaerobic bacteria.

They produce the short chain fatty acids, the ULI and things like that, that support the mitochondria. Hopefully that makes sense. It was a lot of jargon there, but it's really interesting what's happening in our body when we're doing that intermittent fast.

**Ads 54:20**

For anyone listening who really wants to detox their body, go to heavymetalsquiz.com. I created a quiz for you. It only takes a couple of seconds and it's based on some lifestyle questions. You can get your toxicity score and get a free video series that answers all of your frequently asked questions about how to detox your body. Check it out at heavymetalsquiz.com.

**Dr. Wendy Myers**

Now that's great. That's a very thorough understanding for people that want a little bit more elaboration on how their gut is working and their gut immune system is working. What about fasting in regards to longevity and anti-aging? That's one of the reasons that we wanna do fasting. It's not just to improve our health short term but long term as well. What are some of the research associating fasting more and doing inter intermittent fasting with longevity?

**David Jockers**

All these great benefits that I've already talked about. The quality of your life is gonna come down to the amount of high functioning, stress resilient mitochondria in your body and as you age. One of the things that breaks down mitochondria, or one of the factors, I guess you could say for an overabundance of senescent mitochondria and what we call zombie cells, which are these cells that are not doing what they're supposed to be doing and they're sput out inflammatory molecules, and they're actually poisoning all the cells around them. The research says that aging causes an increase in mitochondrial dysfunction and zombie cell formation. I say that's not actually true. It's not aging. It's just when we're not aging properly, we're not following these kinds of principles to clear out these senescent cells. That's really the key.

If we're able to clear out these senescent cells, the senescent mitochondria, these zombie cells on a regular basis through a feast-famine cycling done properly, then that's gonna give us the most stress resilient mitochondria, which is gonna allow us to age with grace. We all know people who are in their seventies and eighties. Just look at President Biden and President Trump, not too far in age difference. One is a lot more mentally active and a lot more life in him than the other, right?

We all have seen this with maybe family members or other people. Some people just aren't aging well, and other people are, and it's really gonna come down to one has better high functioning, stress resilient mitochondria than the other. What we wanna do is everything that we can to stack the odds in in our favor to have the most stress resilient mitochondria possible, to have that healthy gut microbiome, and gut mucosa, like we talked about. Intermittent fasting should be one of the key tools. It's only a tool, not a panacea. It is a healing tool, but I always say it's the most ancient, inexpensive, doesn't cost anything, and perhaps the most powerful healing tool that we have.

**Dr. Wendy Myers**

And it's free, like you said.

**David Jockers**

Yeah, it's totally free.

**Dr. Wendy Myers**

It's not some complex protocol or expensive supplement. It's totally free. It's challenging though, but you gave us a lot of tips on how to gradually work our way up increasing intermittent fasting, and then graduating to longer and longer fast. You're hosting a summit coming up all about fasting, autophagy and other topics. Can you tell us about that?

**David Jockers**

We're gonna do the chronic inflammation summit. We know chronic inflammation is at the root of all chronic disease. So, if you hear something like diabetes, heart disease, cancer, autoimmune disease, Hashimoto's, or thyroid issues, all of its chronic inflammation. And certainly we're talking about fasting and autophagy in there, but we're gonna talk about a wide range of different topics associated with chronic inflammation and the best strategies to heal naturally and to really thrive in life. I would invite you to join us.

We've got some of the top experts, including you, Wendy, speaking on a wide range of different topics. This is something I've been putting on every year now for the last several years, and we've just seen so many people be able to take back control of their health through this information.

**Dr. Wendy Myers**

What is the website people can go to to sign up?

**David Jockers**

I don't remember the website, but if you look up Conquering Chronic Inflammation Summit and we can give you a link as well for that and it will get you all the information there. If you look up my name, chronic Inflammation on Google, I'm sure it will pop up.

**Dr. Wendy Myers**

Okay, fantastic. You have a book also on fasting and autophagy and your website's amazing resource for anyone that wants to dive more into this topic.

**David Jockers**

Yeah, for sure. I've got a bestselling book called The Fasting Transformation that really goes into the science of all the things that I was talking about. So if you want more depth about that, I also go through best fasting strategies and really try to make it as practical as possible. It's got a lot of five star reviews on it. A lot of people are using that book as their inspiration to undergo a fast. Fasting is not something necessarily that simple, especially if you're in a three or five day fast, for most people it can be uncomfortable at first. It takes a level of motivation to do it right. But when you really realize the physiological impact of what's happening in your body, it's just amazing what's taking place. A lot of people so good as they're going through it, just remembering what's happening inside their body and how they're refreshing and rejuvenating the cells of their body.

**Dr. Wendy Myers**

You have a podcast too. It's number one on the alternative health category, which is fantastic. What's the name of your podcast?

**David Jockers**

Dr. Jocker's Functional Nutrition Podcast. I do a lot of short trainings on a number of topics, a lot of them associated with fasting and chronic inflammation. I also interview experts like you, Wendy. You've been on there several times.

**Dr. Wendy Myers**

I highly recommend that. Go check that out. Again, I recommend that anyone join your Chronic Inflammation Summit. It is super important. Just search for Dr. David Jockers and chronic inflammation, those links will pop up to join that. Dr. Jockers, thank you so much for joining the show today. Do you want to tell us what your website is and where we can find you?

**David Jockers**

Well, thanks so much, Wendy. It's always an honor, and I always enjoy our conversations. My website is drjockers.com. That's the best way to find me.

**Dr. Wendy Myers**

Everyone, thank you so much for joining in every week and listening to the podcast. It's such a joy every week to bring all these experts from around the world to give you one or two tips to help you upgrade your health. This is why I'm doing this, and it is a pleasure. I love interviewing all these people every week. So thanks for tuning in.

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