THE MODEL HEALTH SHOW

EPISODE 451

7 Major Factors That Control What Calories Do In Your Body

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Shawn Stevenson: Welcome to The Model Health Show, this is fitness and nutrition expert Shawn Stevenson, and I'm so grateful for you tuning in with me today, I am so pumped about this episode, 2021 is offering us an opportunity to help shift the culture of health and wellness in our society, and it's up to us. And one of the things that needs to take place is a shift into what really creates overall health and vitality, and also making a shift in the awareness of what controls our metabolism. Right now, as it stands, a recent study published in the peer reviewed journal, Metabolic Syndrome and Related Disorders determined that only 12% of American adults are metabolically healthy. Only 12%, and what does that look like? What is the outcome? What is the out-picturing of that? Well, right now, here in the United States, over 200 million Americans are overweight or obese. It's an absolute epidemic. And we're on pace at... Right now at this point, we currently have 43% of our citizens are clinically obese, and we're on pace within the next couple of years to have 50% of our citizens clinically obese.

We can do something about this, but we need to have a shift in our awareness, we need to have a shift in our consciousness on how our metabolism actually works. And when I was in college, in my nutritional science class, I was taught that what's controlling our ability to lose weight was the management of the calorie, alright, the calorie is the boss, it's the Tony Danza of nutrition. But the reality is very, very different, and this year we are going to work to impress upon our culture this term, "epi-caloric control", alright? Epi-caloric control. There are seven things that I highlight in my new book, Eat Smarter that are controlling what calories actually do in our bodies. These are above caloric control, calories are not the king. These seven things dramatically determine what calories actually do in our bodies, and today we're going to dive into each of these and provide real world tangible solutions that can help to reboot our metabolism and get everything in an optimal rate of performance.

And listen, I really do mean this, it's up to us, we have the power to help to shift the tide of health and wellness in our communities, and with the release of Eat Smarter, I've got something very, very exciting to announce right here, right

now. We are kicking off a national campaign with Target stores. Eat Smarter is going to be available at almost every Target store in America, as part of a 2021 wellness initiative, it is going to have a nice little display in most of the Target stores, and you can go and check it out, but we have to demand that companies like this are aware that this is the type of information that we want. We demand that they even carry higher quality foods, we demand a shift in the conversation of health and wellness. This stuff just doesn't happen. A book of this caliber to be at Target stores in middle America, just giving people exposure, there's a virility to books that goes beyond even what's happening on the interweb sometimes, and so folks having access to this kind of information, to understand that calories aren't the king of the nutritional conversation, that there are these seven factors we're going to cover today, and people can get access to this information.

But again, in a way that makes sense, in a way that's empowering, in a way that's fun. So definitely head out to your local Target store and get your copy of Eat Smarter. Of course, in addition, if you've already gotten your copy from Amazon, Barnes & Noble, all that good stuff, get another copy, at least a copy for a friend or a family member and get it as a gift, but get a copy from Target to demand, let Target know we want more information on nutrition and wellness, we want these types of books, we want this type of information for our customers, this is how we shift the tide of things. Again, I used to... This is so crazy for me, I worked at Target. When I was in high school I worked at Target, I was a floater, I was pushing the carts, I was in electronic department, had my walkie-talkie. The thing I remember most though, is my Target lunch, alright? We got a little stipend for our lunch, got the chicken tenders, the chicky nuggies, and also they had that dog. They had that hotdog there, and probably the worst nachos ever.

But hey, you get it on your little stipend, so you get the nachos and the hotdog. Come on. We can help to change the food that's available for our communities. We already got in the door, we're at Target store right now, now we have to show them what we're about. So again, this is very, very exciting for me, and I'm so grateful to everyone listening, thank you so much for being a part of this mission. None of this would be possible if all of us weren't stepping up and standing up and demanding, showing everybody, being the model of what's possible. Alright so I think you're going to absolutely love this episode, and this is coming directly from the content that's in Eat Smarter, so if you have not got your copy, get your copy today. So let's dive in here. Again, today we're going to

be talking about the seven things that control what calories do in your body, epi-caloric control. In a recent episode, we went through the history of the calorie and where the whole paradigm, the idea, of the calorie came from and how it became such an integral part of our culture, and that story in and of itself is in Eat Smarter.

But we went through it here on the show, and it is absolutely mind-blowing, but today we're going to dive deeper, we're going to dive deeper, and we're going to talk about what are some of the actionable things that we can do to help to optimize these systems, these things that control what calories do in our bodies. And the acronym that we're going to use in understanding the things that control what calories do in our bodies is related to an analogy that I share in Eat Smarter, big player in our overall metabolism is our hormones, alright our hormones are these really powerful chemical messengers that communicate information throughout all the cells in our bodies. Our cells are working together as a community, but there can be civil unrest in that community, things can get... It can be like a glorified game of telephone where the wrong message is getting passed along and it can throw off so many different things in our bodies, and it's up to the performance of our hormones.

I liken our hormones as being the equivalent of metabolic DMs. It's sending emails and texts to the various cells to make sure everybody is on the same page, but if, for example, one type of hormone is overactive and just flooding your system with this one particular hormone, it can start going to spam effectively, and creating resistance. So maybe it's insulin flooding the system constantly, and it can create insulin resistance because that signal is getting driven too much, and that will then create downstream effects of your liver, for example, getting over-burdened trying to handle all of that insulin and literally printing out fat, your liver can do a process called lipogenesis, which is literally the creation of fat, just on demand, it's on demand fat, like we got on-demand movies, your liver is doing that. Your liver is your body's Netflix, I guess.

So with that analogy in mind, I wanted to break down and share this acronym so that you can remember what is actually controlling what calories do in your body. Again, this is epi-caloric control. We're going to impress that upon culture this year, it's going to become a part of our lexicon, epi-caloric control. And so the acronym to remember, these seven factors that control what calories actually do in our bodies, the acronym is, INTHEDM, it goes down INTHEDM, it goes down INTHEDM, alright. INTHEDM, this is our acronym that we're going to

go through today. Alright, we're going to start off with the I, so it's IN THE DM, I-N-T-H-E-D-M, each one of these is one of the factors that controls what calories do in the body. First up, the I, inflammation. Inflammation controls what calories actually do in your body. Now, the word inflammation is derived from the Latin word meaning "to set on fire", alright? To set on fire, we're going to get some poop and we're going to light it on fire.

The word inflammation can seem a little bit vague, it can seem a little bit like it's not even real, it's mysterious, it's like a ghost in the machine. But inflammation is one of the biggest drivers of chronic disease in our world today. Now, what I want you to understand is that inflammation is not bad, inherently in and of itself, inflammation is not the bad guy, but this is the way that it's framed in the media, when things... Different processes that the human body naturally does. We start to get into this, "This is good, this is bad." When everything is in balance, that's really the key, inflammation is a powerful part of your body's immune system response, for example, in response to infection, in response to injury, we need inflammation, it's a signal to the cells that come and work on repair, it's a signal to the immune cells to come and do their jobs. Inflammation is incredibly important. The issue is, when we get into this state of chronic inflammation, where the inflammation is sticking around too long because of the environmental signals that we're giving it, or it's in such a surplus that it can truly harm us and create some serious issues.

So, how is inflammation controlling what calories are doing in our bodies? Well, inflammation, we go through the different systems that it can target in Eat Smarter, but one of them I really want you to know about today is that inflammation in the gut can lead to abnormal function involving your vagus nerve, alright, your vagus nerve is the super highway in that gut-brain connection, the gut-brain connection. And your brain, as we're going to talk about more, has a major role in determining what calories do in your body. Your vagus nerve is a primary pathway in the gut-brain connection, so again, researchers at Yale University School of Medicine have found that the vagus nerve, that connection, that super highway connecting the brain and the gut, this gut-brain axis directly makes decisions about whether or, not you are going to absorb the calories that you're taking in. Alright, this is above caloric control, this is epi-caloric. So we want to make sure that we are taking care to reduce the inflammation in the gut, so that this information is cleared up, that there's not a lot of static on the line, and your brain and your gut is making good decisions on how it's absorbing the nutrients that you're taking in.

So to reduce the inflammation in the gut, again, this is one of the big targets, one of the things that we... It's just an undercurrent throughout Eat Smarter, but one of the things specifically that I want to share with you today has to do with supporting SCFAs, alright? SCFAs. And it might sound like you're building a building or something, right? SCFAs, that's short for short-chain fatty acids, your SCFAs. And largely you can get some SCFAs from your diet directly, however, this is something that is predominantly made in you, for you, by your microbes. Your friendly flora are making short-chain fatty acids in you, for you, to reduce inflammation and to help to manage the integrity of your gut lining, incredibly important, and one of the SCFAs is called butyrate, and butyrate is proven to help reduce inflammation and provide energy for gut cells in the large intestine, alright, so what can we do to encourage the production and utilization of butyrate? Again, this is just one of the SCFAs. Data published in the peer reviewed journal BMC Microbiology stated that pectin is an excellent pre-biotic fiber that enables your gut bacteria to produce the critically important SCFA butyrate, pectin.

Making sure we're getting some dietary sources consistently of pectin can help to reduce inflammation in the gut, so what are some natural sources of pectin? Well, there's pectin in just about all whole natural fruits and veggies, but it's particularly found in high concentration in apples and pears, of these different categories of whole fruits and veggies, apples and pears are really great sources of pectin, most notably. And recently I put out a post on... I tweeted it out, then I re-posted it on Instagram as well, and I said that if people had the choice between literally any other fruit and eating a pear, nobody's going to pick that damn pear, and people went nuts. A lot of people, most people were like, "Of course, who's eating pears? Forget the pears. You're absolutely right," but then the pear people came out the woodworks, aPEARarently people love their pears, the people... But they had all these conditions with comparison, "But you haven't had a perfectly ripe pear, Shawn, there's one hour of ripeness every Equinox," or "You haven't had a Korean pear. You haven't had a Kenyan pear. Pears are great."

And the thing was, I don't mind pears. For me, psychologically, it's just that fruit cocktail. When I'm in the Free Lunch Program and that little piece of pear, nobody ate the pear, it was kind of gross. But of course, I've had delicious types of pears as an adult, and there are such an incredible variety of course of pears, but man, it was like the pears were more popping than anything to do with

SARS-CoV-2, it was all about the pears, people came out and shared their pear-pinion, alright, opearion, a pear opinion?

Yeah. So here is the thing, this is speaking to the variety, again, of all the different foods that we have access to and increase the variety to look to different foods, specifically being a little bit more mindful of getting in some pectin to support the production of butyrate. This can help to reduce inflammation in the gut, and we also need to be mindful that different foods are going to work for different people, and that's what I continue to direct folks back to in Eat Smarter, is your unique metabolism, your unique metabolic fingerprint, because for some folks, different types of foods that might be high in pectin, might not be great for their system or might not be great for their system right now, it might be in the future, or maybe it was back in the day, but it's not the best thing for them, just to keep in mind that there's a ton of different options, and most importantly, we have to listen to our bodies, and so that's one of the things to look at in this epi-caloric control, number one, is reducing inflammation, specifically targeted towards the gut. Another point of emphasis that we look at in Eat Smarter that is controlling what calories are doing in our bodies, specifically, looking at the point of inflammation. Is inflammation targeting our liver? Poor liver function is a major causative factor in increased body fat storage and rates of liver dysfunction are skyrocketing.

This is one of the biggest issues, but you're not hearing about this on the local news report, you're not hearing about this in major media, but this is a serious issue, growing issues like non-alcoholic fatty liver disease, which is characterized by an excess build-up of fat in the liver carries a huge inflammatory component, all of which include dysfunctional management of calories in our bodies. In Eat Smarter we uncover the aspects of metabolism that largely go unnoticed. This is what we do, we remove the curtains, we pull back the veil so everybody gets a chance to see what's actually happening behind the scenes in controlling their metabolism. For example, the latest evidence reveals that inflammation in the liver can have a huge impact on your thyroid function, your thyroid is largely regarded as the master regulator of your endocrine system, yet this is not talked about, how damage to your liver can really create massive problems with your thyroid function.

Your liver is critical in the transport, metabolism, storage and excretion of thyroid hormones and many other hormones as well, and if your liver does not manage thyroid hormones properly, it can slow your metabolism by hundreds

of calories a day. Again, people are trying to manage their calories, not knowing that inflammation of their liver, because they're doing their point system, they've cut their calories, but they're still eating foods that contribute to an inflamed liver is reducing their metabolic rate by hundreds of calories a day, and wonder why they're not getting the results. These are not things that are commonly talked about on the typical diet frameworks: Healing your liver, helping to reduce inflammation so that your metabolism can actually work to its full potential.

And so what are some of the things that we can do here? One of the most pervasive issues causing our elevated rates of liver dysfunction are the pesticides used in our food supply. According to researchers at the University of Louisville, more than 300 environmental chemicals, mostly pesticides, have been linked to fatty liver disease. Your liver is largely responsible for handling the weight of the toxicants, most of these things are newly invented that we are exposed to in our world today, and millions of people are being harmed by this every year, yet it's perfectly legal for companies to do this, thanks to their deceitful partnerships with our own government bodies that are supposed to be protecting us. And I will not stand for this any longer, again, I'm going to make sure this information gets out to the public at large. But again, it's up to us collectively, and food manufacturers are promoting and feeding our citizens poisonous foods every day, and the data on this is overwhelmingly clear. So the question is, "What are we going to do about this?"

But again, from a personal, what we can do ourselves, is to be more proactive at avoiding foods that are grown with pesticides, herbicides, rodenticides, all of these things that are designed to destroy and disrupt the reproductive cycle or the nervous system of these small organisms, which we are made of small organisms, they are inherently causing damage to us, specifically, we know very clearly now that this is damaging our liver, which can reduce our rate of calorie burn hundreds of calories a day. So this is number one, and keep in mind, even if we're eating the very best organic amazing soil, like the soil people, they'd come and do yoga on the soil, they bless that soil, even still, because of the nature of the earth bubble that we live in, you're still going to have pesticides that are making their way onto your food.

Even somebody who's eating a very "clean diet," if we go and get some panels done, and we go and have urine samples done, we still are finding trace amounts of pesticides. Because in reality, if you want to look at it, we live in a

snow globe. When we're talking about living here on planet Earth, we're in a snow globe together and everything is affecting everything, but again, we have to change the system itself and do our best, even if we are of course making a step to eat organic or just being in touch with where our food is coming from and they're not using these nefarious products, it's going to be a step in the right direction. But we also want to make sure that it's more available for everybody.

So epi-caloric control, INTHEDM, it goes down INTHEDM. The I is inflammation. Now, we're going to go to the N, and the N is neuroinflammation. Specifically, a study published in the Annals of the New York Academy of Science has reported that hypothalamic inflammation, inflammation to our hypothalamus, is a double-edged sword to nutritional diseases. The study authors reported that systemic inflammation from things like metabolic dysfunction and excess body fat lead to brain inflammation, and brain inflammation itself leads to metabolic dysfunction and excess storage of fat. The best way to look at it is that your metabolic rate is like a thermostat. It's like a thermostat, and your hypothalamus is the integration of your nervous system and your endocrine system. Your nervous system is really reading your environment, the external and internal environment, and providing data on the actions your cells should take. And your endocrine system is your system of hormone production and utilization. And so your hypothalamus is really often called the master gland of the body because it's on that axis, the HPA axis, the hypothalamus is really determining so much about what's happening with your metabolism.

So when we're looking at the seat of where the control center of what is actually controlling your metabolic rate, look no further than your hypothalamus, and hypothalamic inflammation is, again, an epidemic that's not being discussed. And looking at it from the perspective of your metabolic rate being like a thermostat, if you set the thermostat a little higher, you'll intrinsically be burning more calories automatically. But if you set the thermostat too low, your metabolic rate will be turned down and you will find it difficult to burn fat, no matter how many methods of calorie restrictions that you try. Again, epi-caloric control. Your hypothalamus is sort of like the person who regulates your body's thermostat, and it tells your pituitary and the rest of your endocrine organs where they should be set. How many calories should you be burning? How many calories should you be absorbing? Your hypothalamus is at the command center. And again, which diet programs are talking about this? This is what Eat Smarter means. This is what it means. We understand the

things that are controlling what our metabolism is actually doing.

And I think about the hypothalamus and that thermostat being sort of like the stereotypical dad, like it doesn't... I get a little offended, I don't like it when other people, my family members, when they tinker with the thermostat, because I just kind of expect... I just know what the temperature's going to be. It's a little thing, it is a thing. And the remote as well. It's so crazy that we have... It's the remote control. We need that control, the same thing with the thermostat. But what we really need to understand is that what are the things that are creating dysfunction with that regulation? Creating dysfunction with that regulation. The major contributing factor with hypothalamic inflammation, neuroinflammation, is the abnormal foods that we're consuming. It's directly creating this inflammation. Specifically, is the abnormal and just insane amounts of sugar that we're consuming today, because with the blood-brain barrier you have express pathways into your brain that allow in sugar. Your brain will gladly consume half of the glucose that comes into your system.

So just say you bring in 200 grams of sugar, which is not that difficult to do, especially the way that I grew up. You get yourself a double Big Gulp, but you bring in, we'll say, 100, 150, 200 grams of sugar, your brain will gladly just sop up those express pathways right into the brain. Your brain is very ravenous. Again, it's about 2% of your body's mass but it consumes about 25% of your body's calories. It's a hungry, hungry brain, and many processes run on sugar. We've evolved to look for these things, but we've never had access to such high concentrations of heavily refined sugar. So obviously one of the big steps is helping our culture to make a shift away from these absurdly high sugar-content foods. That's going to be one of the steps, but we can't just say to do that without having something better, and of course, we dive in deeper on what we can do there, but I want to provide you today with what are some of the foods that we can add in that can help to reduce this neuro-inflammation. And one of these foods is highlighted in groundbreaking new research published in ACS Chemical Neuroscience, asserting that oleocanthal-rich extra virgin olive oil is able to restore the function of the blood-brain barrier that itself gets damaged through inflammation.

And one of the most impressive aspects is these Auburn University researchers found that extra virgin olive oil effectively reduces neuroinflammation, it directly is able to reduce neuro-inflammation and also improves the process of autophagy in the brain, helping to eliminate toxicity and metabolic waste in the

brain as well. All of these benefits from including a little bit more extra virgin olive oil. And we dive in deep into the details, the different types of olive oil, because it's not the same. Every olive oil is not the same. Of course we' want to avoid pesticides, herbicides, things that can come along with your olive oil, an olive oil should be bottled in dark glass, because it is sensitive to light, and we talk about that more. But being that said and understood, even heating the olive oil to a certain point, we can lose some of these benefits, so olive oil is great to add in more of its undenatured form, so making salad dressings, adding it as a "finisher" on top of foods that's already been cooked. And/or some folks have taken olive oil shots. They're doing the shot, shot, shot, shot. I didn't say you have to do it, but it's an interesting way to get in, because the target is just over a tablespoon a day, it can really help with these benefits. One to two tablespoons.

So again, that's just one of the incredible foods that are proven to help to reduce inflammation in the brain, another food to add into the mix here, to help to reduce inflammation in the brain is highlighted in a study published in PLOS ONE, Public Library of Science ONE revealed that spirulina has a potential to, one, improve neurogenesis in the brain and two reduce inflammation in the brain. These are two very remarkable attributes coming from one food source, and just on top of that, I want to make a little pivot here and reach back to something we talked about earlier, when we talked about the liver, a fascinating recent study highlighted in the Annals of Gastroenterology, demonstrated that patients with non-alcoholic fatty liver disease, okay, again, chronic inflammation taking place in the liver, including spirulina in their diet each day for six months had substantial improvements in their metabolic performance, their overall metabolic performance, and improved overall liver function, helping to reduce inflammation of the liver and, again, our liver is tied to the performance of our thyroid gland and so much more. All from including spirulina, which is this super dense green algae. And this can be foods that are complicated to get in, you can mix up a little spirulina into some guacamole, but for a lot of folks the on-ramp, that transition to going from Taco Bell to spirulina, that's a big gap.

So we want to make this stuff easier and make it an easy on-ramp and that's why I'm such a huge fan of adding in green superfood blends, I think everybody should have one. And the one that I use has a combination of spirulina, chlorella, and also adds in some adaptogens like ashwagandha, and this is from the Green Juice formula at Organifi. So again, if you're not utilizing Organifi at this point, definitely check it out. Spirulina is one of the highlighted things, this literally

helps to support your liver function and reduce inflammation in your brain. There are not many foods that are proven to do that. So this is why it's just another call to action to add these things in. Go to organifi.com/model. That's O-R-G-A-N-I-F-I.com/model, and you get 20% off. Alright, use the code "MODEL" and you get 20% off their Green Juice formula. This is something my family has just about everyday. Alright, so again, it goes down INTHEDM, it goes down INTHEDM. We've hit the I, we've hit the N, epi-caloric control, reducing neuroinflammation. This is going to help your body to better manage the calories that you consume.

Now, let's move on to the T. Now we're going to move on to the T. The T, and some of these, again, these are recaps from the history of the calorie, we're going to dive in on some actionable things. The type of food. The T is for the type of food controls what calories do in your body, and this is highlighted in one of my most... These are the moments, I'm by myself for months on end writing this book and I'm by myself in my office flipping out, I'm like dancing around just like, "I can't believe people don't know this." And now I get to share it. And this was highlighted in a study from Food & Nutrition Research, and the scientists wanted to find out whether or not a meal of whole foods versus a meal of processed foods, does it have a different impact on the body's expenditure of calories? So in this study, they had some folks that consumed a meal of whole foods, which they deemed to be a whole food sandwich, which was multi-grain bread and cheddar cheese. That's the whole food sandwich. Then they had other test participants to eat a processed food sandwich, which was white bread and cheese product, okay, cheese product. And I know some folks still right now, this might be your first time hearing this. "What is cheese product? Who eats that?" That's Kraft, that's the most popular cheese-like substance in America, but they can't legally call it cheese because there's not enough cheese in the cheese. It's called Kraft Singles. It's not Kraft cheese.

Very, very crazy stuff, but they had folks either consume this whole food sandwich or processed food sandwich, recorded their data tracking the pathway of calorie burn in their system, and here's what happened. After compiling the data, even though the sandwiches were the exact same amount of calories, the same amount of proteins, fats and carbohydrates, they're the same on paper, the folks who consumed the processed food sandwich had a 50% reduction in calorie burn after eating that sandwich versus the folks who ate the whole food sandwich. What happened? 50% reduction in calorie burn? The consumption of these heavily processed foods created what can best be referred to as hormonal

clogs in their system. It disrupted the overall function of their metabolism, making their body more stingy at holding on to the calories that were consumed. It disrupted the ability for their body to actually utilize those calories. It created hormonal confusion. And this needs to be understood.

The type of food matters. It's not just calories in, calories out. This is what I was taught. This is what I was taught in an expensive private university. I paid for that. I paid to get educated. The Miseducation of Shawn Stevenson, shout out to Miseducation of Lauren Hill. I paid to be miseducated and to miseducate others. Now, I want you to think about how many tens of millions of healthcare professionals, well-meaning, big hearts, are miseducated and told the wrong thing to tell their patients. It's not okay. We have to change this. There are things that control what calories do. It's not just calories in, calories out. The quality of the food matters, the type of food you eat matters.

What can we do about this? The action step here is a simple one. We simply shift the ratio to more whole real foods. We shift the ratio a little bit. This doesn't mean we totally abandon the consumption of processed foods. It's going to be there, and that's okay. This is not to be dogmatic, this is not to be good/bad. Let's just shift the ratio, because we know that it matters. So that's the step here. It goes down INTHEDM, it goes down INTHEDM. I-N-T, what's next is the H. How the food is prepared determines what the calories do in your body. Most experts will assert that it was the advent of cooking that helped us to evolve the most highly sophisticated brain on planet Earth. Cooking was a quantum leap in the development of the human brain. And cooking changes the bio-availability of calories in the food. We tend to be able to extract more caloric energy from foods once they're cooked. Does this mean that we should eat a raw food diet so we're not absorbing as many calories? No, it's just understanding that this is above caloric control. This is not accounted for on food labels. The cooking of the food literally changes whether or not your body is absorbing energy from it.

And so what is the action step here? Personally, just after examining all of this data, it would be a good idea for folks to be a little bit more educated on including a variety of cooked and uncooked foods, and seeing the different impacts that it has on satiety, and that it has on overall hormone function, and that it has on our metabolic rate. Because it matters, and there's going to be a different ratio for different people, but we have to do what's best for us. Not based on a diet framework, a diet dogma, but based on what's best for us. So this is another thing above caloric control: How the food is prepared determines

what calories do in your body.

Next up, and this one has a deeper dive for us here in this episode, something more actionable for us to look to. So it goes down INTHEDM. I-N-T-H, and now we're at the E. E is energy exchange. Energy exchange. This is something that is above caloric control and it's the thermic effect of food. I was taught this in my conventional university class. However, not in a way that really sticks, not in a way that really created a relevance in my own life, and so I could take it and like, "Oh wow, this really makes sense. This is something I want to put into play for myself." And this is the fact that different macronutrients have a radically different impact on caloric expenditure. It costs calories to absorb calories. It costs calories to absorb calories, and the macro nutrient that reigns supreme in this category is protein. It costs about 25% to 30% of the calories you consume from protein to digest that protein.

So just say you consume 100 calories of protein, you're going to use about 30 of those calories of protein just to digest the protein. So you're getting a net caloric profit of 70 calories, even though you consumed 100 calories. It's pretty cool. Now, why does this matter? Well, it's taking those highly complex protein structures from your food and breaking it down into usable amino acids, and your body is serious about getting those amino acids. It is one of the most potent and powerful things. When we're talking about hormones, neurotransmitters, when we're talking about our endocrine system and related organs, they're largely made of amino acids, they're made of protein. This is why it's so important, but these are not the things that you hear about. It's very granular like, or it's very meta, "You get your protein in, make sure you eat your protein." Why? What is it doing? It's literally creating, it's the building blocks for all the cool stuff to happen. This is why it's so important.

Now, how does this play out? How do we utilize this? Well, just to summarize, you use about 25% to 30% of the calories you consume from protein to digest the protein. You use about 10 to 15% of the calories you're consuming from carbohydrates to digest the carbohydrates. You use about zero to 5% of the calories you consume from fats to digest the fats. The human body is very good, it's very good at digesting dietary fats. And that shouldn't tell you that fats are bad. This should tell you we've evolved. We created evolutionary adaptations to be incredibly good at absorbing fats because they must be important, and this is true, this is true. But proteins, if we're talking about regulating our metabolism, giving us that optimal metabolic function, giving us some more

leverage here, protein is the one to look to.

Now, how does this play out in the data? A study published in the American Journal of Clinical Nutrition set out to uncover the impact that increasing one's protein ratio would have on levels of satiety and metabolic rate. That rate of calorie burn. The researchers put subjects on either an "adequate protein diet," this is towards the minimum of what would prevent degenerative illness. So a lot of these recommendations, this is just to prevent protein deficiencies, but a lot of folks unknowingly can be hovering around this ratio. So this was a ratio of 10% protein, 60% carbohydrate and 30% dietary fat. Or they put the test subjects on a higher protein diet, not necessarily a high protein diet, just higher. Just a shift in the ratio of 30% protein, 40% carbohydrates, 30% dietary fat.

Even though the caloric intake was exactly the same, the results found that test subjects with a higher protein ratio had higher levels of satiety, higher resting metabolic rate, meaning they automatically burned more calories without doing anything differently, epi-caloric, and they had higher levels of fat oxidation, their body was actually burning more fat, simply by shifting their protein ratio. We got to talk about this. We have to talk about this. There's misconceptions about our protein intake as a culture, and we dive in and break down all of the different pieces of this in Eat Smarter because what is the popular narrative is not what's actually true in the data, so you're really going to be fascinated by that, but I wanted to leverage this and look into one more, share one more study of the many that we talk about in Eat Smarter. Again, what if we just do this for breakfast? Well, what if we simply shift our protein ratio for breakfast, that's it, what impact could it have?

Oh, it's a big impact, and this is coming from researchers at a university in my hometown, St. Louis, Missouri. So this was at St. Louis University, this was published in the International Journal of Obesity, sought to discover what happens with fat loss when you eat a high carbohydrate breakfast versus a high protein/fat breakfast. And so in this study for the carbohydrate source it's a bagel. And again, from my university education I was taught that a whole wheat bagel, you're killing it. There's no fat, a couple of grams of protein, you're killing it. Whole grain? Come on. So the carbohydrate source was a bagel, the high fat/protein source was eggs.

Now, the calorie content of the meals was the same for all the test subjects, calorie content the same, it's just for the first meal of the day some folks had a

bagel, other folks had eggs. The researchers did have the study participants to go into a reduced calorie intake, so they reduced their intake of calories, but they had them on the same calorie intake, just different macronutrient ratios for their first meal, and here's what they found after an eight-week study period. The study participants who simply ate higher protein meal for their first meal lost 61% more of their body mass index, they had a 65% greater weight loss, 34% greater reduction in waist circumference and a 16% greater reduction in body fat percentage.

The calorie is the same, they just did this for their first meal of the day, increased their protein intake, reduced their carbohydrate intake, just for the first meal of the day, calorie is the same, epi-caloric control, this is controlling what calories do in our bodies. So again, but also there's some fat there too, fats have a good vibe as far as these metabolic processes, even though your body is so good at absorbing fats, it helps things to work better if they're the right high quality types of fats. And we dive in deep into the misconceptions around protein and various protein sources in the book. So whatever diet framework you subscribe to, you're still going to be invited. This is inclusive, you're just going to get the data to support you no matter what diet you subscribe to. All of us, we debate about minutia when we should be focused on these overarching things that control what the nutrients are doing in our bodies. So look forward to that, but also of course, the other two macronutrients we dive in, it's not that carbohydrates are bad, no, it's simply looking at the ratio and our own personal unique carbohydrate tipping point. That's what we dive into and we look at different carbohydrate-source foods and the value there too.

But I want to touch on one more thing really quickly in the macro universe, since I did mention the fats being a part of that breakfast. There are specific types of fats that have remarkable impacts on our metabolism, and one is highlighted in a randomized double-blind study, this is the gold standard, published in the International Journal of Obesity and related metabolic disorders, placed participants on a reduced calorie diet, so they did that but they included either supplemental MCTs, Medium Chain Triglycerides, or supplemental LCTs, Long Chain Triglycerides. Now, after all the data was compiled, it was revealed that the group who included MCT oil lost more weight, eliminated more body fat and experienced higher levels of satiety, again, even though the calories were the same. Including this type of fat versus another changed what their metabolism was doing. And we have access to these things now, we can get them in whole food sources.

Absolutely, I'm a big fan of MCT oil. I had it today. I love the emulsified MCT oil that Onnit carries, because it's like a coffee creamer, it just tastes really good. But we're getting those benefits. There's neurological benefits we talk about, but also the benefits direct for your metabolism. Alright, so again, definitely check it out, they have the original version of MCT oil, but also emulsified MCT oil, that's onnit.com/model, that's O-N-N-I-T.com/model, and you get 10% off everything they carry, but definitely check out the MCT oils, they just make your metabolism work better.

So it goes down INTHEDM. It goes down INTHEDM. So we've hit the I, N, T, H, E. Now we're at the DM, the D, it's about that D. Digestive efficiency determines what calories actually do in your body. Your digestive efficiency. Your digestion is unique to you, there's nobody like you, your unique metabolic fingerprint, your metabolism that you have right now is unlike anybody who's ever existed in the history of humanity, and it's unlike anybody who will ever come after you. All the generations in the future, nobody will have a metabolism like yours, and the craziest part is you won't even have a metabolism like you have right now, next week. It is continuously changing. It's always in flux. It's so fluid, and this is not taken into consideration in diet equations on how dynamic and complex and ever-changing our metabolism really is. So we need to be provided the tools so we can make decisions based on the fluidity and the changing nature of our metabolisms.

So what are some of those components? Your digestive secretions. So your production of stomach acid, your enzyme production, so many different factors, your bile production influences your ability to absorb and manage calories, but again, most diet frameworks are not accounting for these factors. Even the length of your digestive tract determines how many calories you're going to be absorbing. There are some people, they might be the same height, same weight, but their tract is a little longer. They got that long tract. They're laying out that long tract. They might have an extra foot. And they're just by nature absorbing, it's more time and opportunity to absorb nutrients. Some folks can have literally the span of difference with our digestive tract can be feet. It's absolutely nuts, but this is the case, and it's not accounted for, and all of these different factors go on to say, again, these are controlling what calories are doing to our body, we want to have optimal digestive efficiency, and one of the... There are several natural ways to improve the robustness of your digestion, because that's the key too.

It's not a good thing if you're not digesting your food properly and not absorbing as many calories, because that can mess up the overall rate of calorie burn, by disrupting, creating inflammation in your gut and your brain. So we want to have efficient, healthy digestion. One of them is ginger. Data published in the journal Metabolism, and highlighted in Eat Smarter, we go through a whole plethora of different foods specifically in looking at their impact on metabolism, data published in the journal Metabolism demonstrated that participants consuming a hot ginger beverage with their breakfast were able to boost the thermic effect of their food. They burned more calories digesting their meal, and they had reduced feelings of hunger throughout the day, by getting some of that ginger in, ginger. Now, do you have to include ginger? No, but this is just one of the things that helps to create more robustness of the digestive function. Again, there are so many ways, but just want to share a couple right here, tangible, actionable things that we can do as a society to help manage these things. Also, looking at digestive enzymes, some folks are not producing adequate amounts of digestive enzymes just because of wear and tear on their system, trying different diets, abnormal food intake.

I know this was an issue for me early on. I had so much craziness in my diet, the digestion just isn't on point. And so maybe supplementing with some digestive enzymes can be helpful in just encouraging your body to start to do these processes better itself. So looking into digestive enzymes, also bile, right? I mentioned that earlier too. Some folks have had their gallbladder removed, for example, and this can create all manner of issues, but in our conventional perspective the gallbladder is not that important. Somebody's having a gallbladder problem, "You don't need it. Just take it out. Your original design was a mistake, you don't need that. Tonsils? Get rid of them. They're not necessary." Many of us have had our tonsils removed, gallbladders removed, various organs, "Just take out the whole female reproductive system. She doesn't need it," and not looking at, because again, often we do this because we're experiencing symptoms, we're experiencing problems, sometimes it could be life-threatening, and not looking at what's the underlying root cause of the disruption, what's the root cause of the dysfunction, because the body is trying to tell us something is wrong.

When the gallbladder's having these issues, our body is giving us feedback, something is wrong, there's something we're doing in our day-to-day lives, because we weren't born with a faulty gallbladder, we did something.

Environmental factors and dietary factors have a massive impact. Your gallbladder is like your liver's right hand man, we talked about how important the liver is. Live-er, live. Can't live without it. Your liver is Batman, gallbladder, Robin. Liver, Aquaman. Gallbladder, Aqualad. Probably, I'd say the worst comic book name, Aqualad, but it's the supporter, and when it's gone... It's a container, it's like a bank for bile, the livers can produce bile but it still has to do it itself. So these folks have to have even more intention on supporting healthy liver function, and also even including some dietary enzyme supplementation for lipase, specifically. A lipase supplement can be game-changing for absorption and health and overall digestion and metabolic rate for folks who don't have a gallbladder. So these are all part and process looking at epi-caloric control.

It goes down INTHEDM, it goes down INTHEDM. Final one here. We're at the M in the DM, we're at the M. Determining what calories actually do in our bodies, the M is our microbiome makeup, the makeup of our microbiome itself. And this is highlighted in the journal Cell, and these researchers discovered that there's a specific bacteria in mice that they found that blocked their intestines from absorbing as many calories from their food. It was a revelation. Mind-blowing, absolutely powerful discovery. Now, the issue is through allopathic lens, folks will look at that like, "Okay, we found this bacteria that blocks the intestines from absorbing as many calories from the food, how do we bottle this up and sell it? How do we bottle it up and sell it?" And not looking at, "Is it a good thing that this bacteria is blocking the absorption of calories?" What if it's also blocking the production of B12 by our gut microbes?

What if it's blocking the ability from particular bacterial communities to produce the SCFAs that protect the integrity of our gastrointestinal trap? The problem with conventional allopathic thinking is that it thinks the human body is operating in a vacuum, we can just target this one thing and there's no downstream side effects, but there is, they're called side effects, but it's not a side effect, these are direct effects because nothing's happening in a vacuum. Instead of taking that data and understanding this is giving us valuable feedback as to the importance of our microbes, and this is highlighted in human studies, coupled with what was published in Cell, and this was from researchers at the Weizmann Institute. And they discovered that, and I could do this, I could send a client that I'm working with when I was doing my clinical practice, I can send them to get a stool sample and take a look at their bacteria make up, the make-up of their microbiome, and basically a stool sample you can do at home, you poop into a little... You remember when I talked about Target and I had the

nachos, it's the package, it was the basket that you put the nachos in. Ironically, you put the doo-doo in the same thing and you put it into an envelope, but the nachos was doo-doo but... Never mind.

So you send in the stool sample without me ever even seeing the person. Once I get their report back, I can look at the make-up of their microbiome, I can see their bacteria diversity and know whether or not they're obese, without even seeing them. And this is what the researchers discovered at the Weizmann Institute, that they can take this bacteria cascade that's associated with obesity and insulin resistance, we know now that there's this connection between this makeup and obesity in the real world, and folks who are obese and insulin resistant, they have a specific array of microbes that is associated with that. And so what they did was they took fecal samples from these "fat" bacteria samples from obese test subjects and implanted that into mice, lean mice. And they took fecal samples from healthy human subjects and implanted that into lean mice. The lean mice who received the fecal implant from the lean human subjects didn't change. The mice didn't gain weight, they stayed lean. But the mice who received the "fat" bacteria from obese test subjects, the mice became insulin-resistant. They gained weight and they gained body fat. Nothing else changed but their microbes.

This is how important this is. Our microbes, this incredibly dynamic, powerful array of microbes that exist in our bodies determine what our bodies do with the calories we consume. Epi-caloric control. And if we're not talking about this, if a diet framework isn't talking about this, they're missing the point. This is truly remarkable, and now we've got the data on this, and we need more than ever... Gastrointestinal issues are sky-rocketing, but sometimes people don't have like, we have a tummy ache, it used to be called just a tummy ache. When I was a kid, tummy ache. Now it's got all these different names, clinical diagnosis, but sometimes you don't have gastrointestinal stress directly, that's not where you feel it, but you might have autoimmune issues, you might have issues with your thyroid or issues with your joints related to what's happening with your gastrointestinal tract and your microbes.

So what do we need to do? What is a action step that we can take today to help to fortify and support this microbiome community? Number one, we need to avoid the things that damage our microbes. We need to avoid the things that damage and create disruptions to our microbes. What we know is that as the diversity of our microbes goes down, our rates of obesity goes up. As the

diversity of our microbes go down, our rates of diabetes goes up. As the diversity of our microbes go down, our rates of heart disease goes up. The list goes on and on.

The problem is, when researchers took samples from folks eating more of a natural, indigenous diet, hunter-gatherers, they saw that the average person had over four times more diversity in their gut microbes than the average person here in the United States. We're losing so much of our diversity. If you want to make the analogy of our microbiome being like a rainforest, we have a lot of endangered species and a lot of things that have gone extinct that are protecting our health, that have been preventing, over time, folks from becoming obese and insulin resistance and all manner of things that have continued to get worse. We've just been destroying the integrity of what's happening inside of our bodies as if it's not a thing, and it is a thing, and that's what the data that we're pushing in the culture now with Eat Smarter, so we know for certain that these things are controlling what calories are doing. We've got to get ourselves healthier from the inside out. So number one, what's been destroying and killing off so many species of our microbes? The advent and it's become so inundated in our culture, it's become so proliferated, and just such an integral part of how we exist today, we've come to accept it as normal.

A big part of this is the pesticides that we talked about earlier. Pesticides, herbicides, rodenticides, fungicides, they are designed to kill small organisms. Your gut is made of small organisms. These things don't care, they don't care what jersey the microbes are wearing. It's killing. That's what they're designed to do. And it was as if it didn't have an impact. We know it has an impact, we have to stop it, we have to demand that it is done, that we stop growing food that is treated with all these insane chemicals. But number one, step one for us today is to avoid that stuff, we do our best to avoid it if we can. Number two, avoiding haphazard use of antibiotics. It's gone on long enough, myself included, I was prescribed antibiotics for viral infections, I was prescribed antibiotics for other than, and it's not appropriate. We have to be very conscientious about our use of antibiotics. We've created these "super bugs," antibiotic-resistant bacteria, and just imagine, we don't want to create a world where we have all of these incredibly powerful and destructive bacteria that we can't do anything about. And it's rooted in our haphazard use of these drugs.

Another thing is to, again, shift the ratio, be more conscientious. The average person can consume somewhere upwards of a 130 pounds of sugar in a year.

Added sugar. Added sugar, let me be clear, this is even including the naturally occurring sugar in the food. What is that doing to our microbes? Sugar is feeding pathogenic bacteria, disrupting that bacteria cascade where our friendly flora is getting dominated by pathogenic bacteria. We have all of it, what we call opportunistic or pathogenic, we evolve with these things, they could be doing important roles for us. Maybe they're helping to produce some of those SCFAs that we talked about earlier, for example.

But when they get out of balance and they get too overbearing, maybe it can really create some major problems, so avoid the things that are creating the problem. And also we want to be more adamant about including more of the things that help to increase the ratio of friendly helpful bacteria and get things back in balance. So one of the biggest tenets in Eat Smarter is improving our intake of prebiotic foods. Prebiotics, you could take all the probiotics you want and you can eat all the probiotic foods and beverages you want, but they're not going to proliferate and actually help your system if they don't have their preferred food source. This is the prebiotics, we have prebiotics, probiotics, and post-biotics. And the post-biotics are the things that your microbes create in you, for you. The probiotics are the friendly flora cascade, prebiotics are the food that they need to eat.

A recent study published in the International Journal of Obesity revealed that a higher diversity of gut bacteria is directly correlated with less weight gain and improved energy metabolism, independent of calorie intake. Independent of calorie intake. Again, this is epi-caloric control, and this is the term that we're going to impress upon culture here in 2021. The number one way to increase the diversity of your microbes is to increase the diversity of the foods that you eat, essentially every real whole food is a prebiotic source. Essentially every whole real food is a prebiotic source. They're feeding some various different strains of microbes, and if you completely strip away a source of prebiotics because a diet framework does not allow you to have it, and your ethnicity, your lineage, your ancestors had this strain, feeding this strain of bacteria that for centuries that may have been protecting you from obesity, protecting you from insulin resistance, we have to be more careful about what we're taking out and what we're adding in, what we're taking out and we're adding in, and this is what we focus on in Eat Smarter, giving us the tools so we can make the right decisions for ourselves.

When we eat different foods, when we eat a berry we're eating the microbiome

of that berry, when we eat different foods we're eating the microbiome of that food and creating more microbiome diversity for ourselves. So even if we're eating a "healthy diet," we can still get into meal prep gone awry and eat the same couple of dozen foods over and over and over again, and we could be killing it, but over time we might not see the results that we wanted. And it's because we have to feed our microbes and keep them happy by creating a diversity of nutrient intake and various foods, so I hope that this was valuable to you today. This is such an important conversation to have, because our culture has been inundated with the belief that if they simply manage their calories they can get healthy, if they simply manage their calories they're going to be able to lose weight, and that is so far from the whole story. Again, here in America over 200 million people are overweight or are obese, we're on track within the next couple of years to have half of the US population being clinically obese. We can change this, we can change this, because coupled with that, a 135 million Americans right now have Type 2 diabetes or pre-diabetes. 60% of our citizens have some degree of heart disease and hardening of the arteries right now. Ticking time bombs.

We can change this, we can get our communities healthier, this is our time to do it. We have to step up, use our voice, but most importantly, we need to get educated, we need to get this information in ourselves, and so I'm so grateful for Eat Smarter being a viable tool and available for everybody right now. So please head out right now, get your copy, Barnes & Noble, Amazon, all that good stuff, but definitely let Target stores know that this is the type of information we demand. Head out to your local Target store and get a copy today, order from Target online. I appreciate you immensely, this is all a part of the movement, I'm so grateful for you. This means so much to me, you have no idea. Please get your copy today and be the model, be the model. Be the walking, talking example of what's possible. We need you now more than ever. Alright, I appreciate you so much. We've got some epic, epic shows coming your way very soon, so make sure to stay tuned. Take care. Have an amazing day, and I'll talk with you soon.

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powerful, empowering, great content to help you transform your life. Thanks for tuning in.