Why Muscle, Mitochondria, and Metabolism Matter More Than Calories Transcript

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Introduction to Metabolism and Longevity

Understanding your metabolism, how your mitochondria works, how cellular health works, is so, so pivotal in becoming the best longevity, the best patient you can possibly be.

It starts with BMR, basal metabolic rate, 60 to 70% of your overall metabolism. Also, the more muscle you have, the more metabolic you are. Get out there, move around, you don't care if you're just walking, at least you're moving, you're getting your body moving, you're getting that metabolism up.

That's somewhere from 10 to 15% of your overall metabolism. The one everybody forgets about, the thermic effect of food, and remember that one, because when you look at the type of food you eat, When you eat and how you eat is extremely important to maximize that extra 10 to 15 percent of your metabolism.

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Welcome to the Lifestyle Medicine Podcast. I'm Dr. Ivan Rosilko, your host, and we are powered by Access Medical Labs. If your doctor's not checking your labs, they're not a doctor.

And today, I'm coming into you by myself solo to talk about one of my most favorite things, which is your metabolic rate. In medical school, I went out and I found out very quickly that medicine doesn't really teach you too awful much about the most important things in life, which again, I think your metabolism is probably the most important thing, especially for the longevity space.

So I went out while I was in medical school and actually got my certified nutritionist degree. Also with my history as the Mr. USAs and all other stuff that I've done before, I kind of put everything together.

So, you know, every one of my patients who comes to me also gets a metabolic consult. I think that's the most important thing. So today I'm going to kind of hit on the kind of the most important parts of it.

Basal Metabolic Rate and Muscle Mass

How can we check our metabolism? And how can we amplify? Because I think there's a lot of cool things out there hormonally, peptide wise, IV, all sorts of things, but most importantly lifestyle, which we're going to kind of get into.

So first and foremost, what is your metabolism? Your metabolism is basically how your body utilizes energy to kind of do different functions in life, whether it's just being alive or whether it's hitting a baseball or to do whatever it could be.

This is how your body produces energy to help you basically manage life. And there's three major parts to it. So the overall total energy expenditure, the first and foremost and most important part is your basal metabolic rate.

So this is about 60 to 70% of your overall metabolism. This is the energy you need to kind of just be alive. So personally, I always like to get my BMR checked.

Mine ranges from 2,700 to 3,500 calories depending on what kind of shape I'm in. Currently it's probably about 3,000, probably in the middle of where I should be.

And what this is, if I were to wake up and just lay in bed all day, how many calories would my body burn just to sit there and provide the actual basic life functions to make me, me?

And this is greatly, greatly influenced by the amount of muscle you have on your system. The more, you know, people understand muscle is metabolic. So you see all these different fad diets and triseptide and red on all this other kind of stuff.

You're burning through a lot of the muscle, which we, which actually is one of the most important parts when it comes to staying fit, staying energetic, all the kind of good stuff that makes you you.

So one of the biggest things is, you know, I try to maintain a specific, you know, muscle mass, just not only for aesthetics and fitness and all that kind of good stuff, but also because it keeps my metabolism moving.

So your BMR is one of the biggest aspects of that. Coupled with that, then you have something called the thermic effect of food. A lot of people don't really understand the thermic effect of food.

It's kind of unique. The thermic effect of food is the amount of calories that you actually burn eating something. And each different type of macronutrient, whether it's a carbohydrate, a fat or a protein, have a different type of thermic effect to it.

So the major aspects of what make up the thermo effective food are first and foremost, the act of eating. So, you know, your jaw is actually moving, the enzymes that are produced to actually break down the food, the actual motility for your stomach, your esophagus, your intestines, your colon, all those different things take energy.

So as you eat something, the more dense it is or something like fiber or broccoli or steak, the more energy is actually produced to go through and break these types of different nutrients down.

The most cheap and easy thing to do is obviously fat.

Thermic Effect of Food

It's almost zero. I think it's 1%. So if you take 100 calories of fat, you're going to retain about 99% of that. So only 1% of the calories that you get from fat are actually utilized in its actual processing.

Next up is carbohydrates. Carbohydrates can range anywhere from 3-5%. So if you're having 100 calories of cake, then you're going to burn about 5 calories, maybe 3-5 calories of that cake to process it.

uh but you know that's kind of situation was like that doesn't give you a free range to go eat a bunch of cake because it's not that big of um uh athermic effect whereas protein protein is a big one that's about 20 so about 200 calories of steak or about 20 calories of that steak just processing it and there's there's a lot of things that protein does in your system protein is probably the most essential macronutrient we have out there the amount of processes and things that protein does in your system is just astronomical from enzymatic things to structural things to immune function to to how your liver works.

I mean, hormone, I mean, everything that your body does relies on proteins in some some way. What happens is there's other specific things, especially nitrogen.

So the aspect of when you intake protein, you have to take the nitrogen off and kind of package it up. So that also is extremely expensive. So that's why the thermic effect of protein is so much higher than all the other types of macronutrients.

So it's just always very important to understand that when it comes to the different types of thermic effects of basically living, of food, and also our next one, which is exercise, a lot of people don't understand that it actually, it takes a lot of calories and your body relies on you eating frequently to kind of keep that metabolism high.

So I tell people if you get hungry, you're already about two hours late when it comes to the food you should have been eating. And the last is your thermic effect of exercise.

And again, that's pretty much a straightforward one. I think everybody realizes that one. How many calories do you burn when you're actually exercising?

That can vary across all kinds of different spectrums. Obviously the shape that you come in with first and foremost is the most important. If you're coming in, you know, more muscle on your system, less fat, you're going to burn in different ways.

If you're an overweight individual, an underweight individual, your body processes, you know, the thermic effect of exercise much differently as well.

But it's always unique to sit there and see it. It's not always so much exercise through the thermic effect of non-exercise. So me getting up and down from my chair, me walking around, doing things that I don't really associate with just exercise is also extremely important.

This is why being mobile, moving around is super important. Not having a desk job where you sit there and just type all day. I mean, you aren't really maximizing your thermic effects.

And just to go back, the thermic effect of exercise that are from 10 to 15% and the thermic effect of food is about the same. So just remember that the thermic effect of food and exercise is almost the same, equally important.

But when it comes back to the actual exercise, this is where you can kind of manipulate how your body kind of processes, you know, and what kind of body you want to be.

When it comes to exercise, you have a high intensity and low intensity type of exercises. High intensity exercises rely more on an anaerobic type burst.

This is where you burn sugar. And this is where you're bench pressing three reps or you're sprinting. This is where you get out of breath because your body has gone past the ability to use oxygen to help create that energy that it uses sugar, immediate energy for that.

So this is your anaerobic type of exercise. Then you have your aerobic, this is your more Lance Armstrong, long-distance running, light intensity, things like that.

Exercise, Movement, and Metabolic Output

This is where you burn specifically fat and that's through a process called oxidative phosphorylation. The reason that's so important because everybody right now, NAD is the best thing since sliced bread for the last two years.

That's because oxidative phosphorylation takes place in the mitochondria. Things like NADH, FADH2, all these different things help your body process fat to basically create ATP, adenosine triphosphate, which is our cellular currency, our gold bullion of the cell.

So being able to maximize how the mitochondria works, utilizing low intensity exercise, you're able to burn twice as many, three times as many. And if you're starting throwing peptides in there like AOD, anything that maximizes how the actual body burns fat, you're going to increase how much fat you burn at any given time.

This is why I'm a huge proponent when it comes to mitochondrial health. I love NAD. I love NR and nicotinamide riboside. That's a precursor to it. I like that a lot more than NMN.

Just from the studies I've seen, I think NR is far superior to NMN. Then we use things like methylene blue. Methylene blue is how the actual mitochondria is able to go through and figure out, okay, so obviously everything takes oxygen.

Oxygen is how you burn fat. This is oxidative phosphorylation, which is one of the most unique things with various redox reactions with the hemoglobin on red blood cells.

cells but it also helps with your body because when it comes in this whole electron transport chain produces electrons attached to the oxygen creating water again a whole lot of biochem i'm sure that you're not in the mood for then you have other things like SLUPP332 which is a new kind of fun peptide it's an estrogen type receptor modulator what this does is it tricks your body through very unique genetic ways to kind of think that you're actually engaging in cardiovascular exercise Make sure you have food in your stomach because this peptide can really wear you out if you don't have anything in your system.

Those are some of the main ways to kind of augment how your actual mitochondria works. But how can we maximize everything? And again, it comes to hormone.

This is why diagnostic testing is pivotal for it. Things like testosterone, DHEA, cortisol, thyroid, IGF-1, estrogen, progesterone, all these different hormones kind of monkey with how your body's able to burn fat, how your body is able to kind of go through and actually process the various forms of energy in your system.

This is why it's so important to diagnostic tests. If you have low testosterone, low adrenal function, low thyroid, your body's not going to be able to really burn and kind of, you know, create the body that you want.

You need to maximize these things. IGF is off. Again, IGF is one that a lot of physicians forget to test for. This stands for insulin-like growth factor.

This hormone is directly responsible for the anabolic potential of your muscles to grow bigger and stronger. It also stops fat building as well, which is kind of a unique property to it.

And it's produced mostly, it's kind of unique. This is why sleep is so important. You could use growth hormone in the Delta stages of sleep. About 96% comes from deep sleep.

Not many people get deep sleep anymore. They're on some type of sleep aid that prevents them from getting there. There's TVs in the room, they're sleeping with dogs and kids and the partners that just kind of wakes them up.

But it's so important to get the delta sleep because getting delta sleep increases your growth hormone. Growth hormone then turns into IGF-1 once it hits your liver.

Mitochondrial Health and Energy Production

IGF-1 is the master anabolic hormone in your body, not only for muscle, hair, skin, nails, bone, everything, sexual function, mental function, your mood, everything like that.

So it's super, super important and it plays a major role in your metabolism. And same thing with progesterone esteride, having correct levels of that kind of maximizes your body's ability to get blood flow to certain areas.

It's great for bone health, great for cardiovascular health. So diagnosing these different things is super, super important to increase your metabolism.

Then when you find something like a heavy metal toxicity or a hidden pathogen, Anything that causes stress in the system takes away from your body's ability to burn fat and create ATP, or burn sugar, or basically diminish your actual metabolism.

So this is why it's so important to go through and try to find these things. If you're trying to optimize yourself, and again, we're all in the business of looking good and feeling good.

I don't care if you're in healthcare, if you're out of healthcare, that should be your main focus to be the best version of yourself. And I think the most important part is not only figuring out who you are, but figuring how to manipulate how your body actually works.

And this is the beautiful thing when it comes to the longevity medicine aspect. This is how we can sit there and see what hormones are where they should be.

If we have toxic metals, autoimmune disorders, all these different things play on our body's ability to not only produce ATP, but actually manage how it works.

And understanding metabolism, I think is one of the most important things physicians don't do. And again, I spent probably, let's call it a day on nutrition in med school and probably three weeks on cholesterol medication.

So physicians are unfortunately not trained to understand how metabolisms work. We get very, very small snippets of it throughout our training. So finding somebody who actually understands that, who lives it, who lives and breathes that is one of the most important parts when you're coming to a position and looking for these specific types of goals.

Whether it's better mental function, physical function, sexual function, just function in general, metabolism is probably the most important part of that.

And that's why I always stress that, you know, I think a physician needs to be a student of life. You know, I'm always learning. I try to, anytime I consult or I speak or I lecture, it's always unique because I go through and kind of refurbish what my mentality is or kind of what my goals are when it comes to optimizing whatever I might be speaking on.

And metabolism is the root of it. Cellular health is so, so important when it comes to being the best healthcare practitioner, or even the best patient you can be.

Because lifestyle modalities are just as important as any peptide, hormone, IV, or any other kind of unique thing from stem cells to hyperbaric, to ketamine, you name it.

You need to make sure that your body's ability to produce the correct form of, or actually have the best metabolism out there is probably the most important part of it.

And that's why I think metabolic medicine is something that I think you're going to see a lot in 2026. NAD is kind of the, I guess, the foot of the door, if you will, but there's so much more to actually pay attention to.

Things like FADH2, you know, you have NADH, which produces three ATP molecules, which is great. Everybody pays attention to NAD. Nobody pays attention to FADH2.

FADH produces two. It's the little brother. Maximize that.

Hormones, Sleep, and Diagnostic Testing

do you maximize that riboflavin that's the precursor for that super easy to do very very straightforward process and a lot of physicians just don't want to go that extra step and do that that biochem you know right pull from the from the depths of your mind to kind of relearn it and I think that's one of the most important things I did in in in medicine was you know I went through medical school I kind of got through it fast and effectively but when I got through it at the end of it I was just kind of like I walked out into this whole longevity where I was like, nothing that I'd learned made sense.

I had to re-re-teach myself everything, but from a different angle. I mean, I learned what a mitochondria was. I didn't know all the fun stuff that it could do.

I learned what testosterone was. I didn't know what the fun stuff is that it could do. And so my, my like the one of the most important things I try to console physicians and patients too, because patients need to be informed.

One of the most important things, or one of the best things I should say, is an informed patient. It keeps me on my

toes, and it also keeps physicians who really are in this business for nefarious reasons on their toes, which I think is the most important part.

So it's a situation where understanding your metabolism, how your mitochondria works, how cellular health works, is so, so pivotal in becoming the best longevity, the best patient you can possibly be.

It starts with BMR, basal metabolic rate, 60 to 70% of your overall metabolism, extremely important. muscle muscle muscle the more muscle you have the more metabolic you are your thermic effective exercise obvious one you know get out there move around you don't care if you're if you're just walking at least you're you're you're moving you're you know you're getting your body moving you get that metabolism up that's somewhere from 10 to 15 percent of your overall metabolism and the one everybody forgets about the thermic effective food and remember that one because when you look at how the type of food you eat When you eat and how you eat is extremely important to maximize that extra 10 to 15 percent of your metabolism.

And 10 to 15 percent is nothing to shake a stick at. So understanding these things both as a patient and as a physician are some of the most important things I think when it comes to overall medicine.

And also understanding that there's so many influences out there on it. Lifestyle is extremely important. Hydration, hydration, hydration. The more water you have in your system, the more your body can burn fat, create energy, the better mentality you have.

Your body is 60, 70 percent water. Your brain is 80 to 90 percent water. So whenever you're dehydrated or not working correctly, then your body's kind of off.

Your brain's not working right, your metabolism is not working right, and you just aren't working right as a whole. Nutrition, nutrition, nutrition. So, so, so, so important because what you eat dictates who you are.

Exercise, obviously, that's a straightforward one. How you exercise dictates the kind of body and the kind of, and the type of feel that you will have.

Stress reduction. Find ways to sit there and learn. I mean, I think breathing exercises are fantastic. Breathing in. Box breathing. 478 breathing, depending on what your goals are, is pivotal.

I mean, the more oxygen you get in your system and the more relaxed your cortisol and everything like that is, also enhances how your metabolism works.

So that's super important. Things like sexual health. Don't discount it because it seems taboo. Sexual health is one of the most important things. Orgasms feel good for a reason.

They are so metabolically friendly that people don't understand that. So it's not just about having an orgasm and feeling good. Yeah, it's it's literally about you know, your body relaxes itself improving how it actually blood flows with things like oxytocin and everything else being released.

And that in a tertiary way affects how your actual metabolism is.

Lifestyle Factors and Practical Optimization

So all these different lifestyle modalities coupled with diagnostic testing coupled with the actual different treatment possibilities are what can kind of take your metabolism to the next level.

It's just understanding that you know, metabolism is not just what you put in your mouth, there is a lot of things that go into it. And understand the basics, I think is part of the most important part.

So if I could give, I always like to ask, you know, come and ask myself both questions. Uh, you know, number one, if I'm a patient coming to this industry, how to figure that out, find a position, eat, sleeps and breeze this, this type of

medicine, they should look the part.

If you can't take weight loss advice from a fat doctor, you can't take metabolic medicine from somebody who chooses not to be metabolic. So it's a situation to where is whoever your healthcare practitioner is, they need to exemplify what you're looking to get from them.

So that's number one, you should find somebody who is actually playing the part. For physicians in this industry, get back to the basics. Understanding how a mitochondria works, understanding how metabolism works, can help you out tremendously when it comes to everything you're possibly thinking of.

If you're a specialist in just hormones, this is one of the most important things. Hormones are metabolic. I mean, you should be the best person at this one.

If you're just doing IVs, figure out how IVs affect metabolism. If you're doing hyperbaric, if you're doing family practice, if you're doing cancer, every single field in medicine can relate back to metabolism, but a lot of physicians just don't even understand I say oxidative phosphorylation, they're like, what is that?

It's the most important part of being alive. And so understand these basic aspects, learn how to manipulate them specifically through lifestyle modalities coupled with everything else you can find.

Test, test, test, one of the most important things because you can't put a puzzle together if you don't have the picture of the puzzle. And then just really, really exemplify not only through how you are, but how you present yourself to your patients.

So with that, I hope that was my 15-minute metabolic lecture here on the Lifestyle Medicine podcast brought to you by Access Medical Labs. So the biggest part is, take a look, follow us.

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