

Ep #32: Make Sense of Your Metabolism



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With Your Host

Carrie Holland, MD, CPT

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You are listening to the *Strong as a Working Mom* podcast, Episode # 32. Want to make sense of your metabolism? Let me help you keep it simple.

Welcome to the *Strong as a Working Mom* podcast. If you're balancing career, family, wellness, and some days sanity, you are in the right place. This is where high-achieving, busy, working moms get the tools they need to eat, move, and think. I'm your host, physician, personal trainer, and Certified Life Coach, Carrie Holland. Let's do this.

Okay, hey, how are you? What's new, what's good? So, what's good here is that we are going to talk about metabolism. Here's why I think we need to dig into this a little. I think the term "fixing your metabolism" has become a bit of an en-vogue thing, sort of like a buzzword in the last few years. And I think that term has served to cause, basically, serious confusion among the general public.

And as a physician, then a personal trainer, and now as a life coach, I cannot tell you the number of times I have been asked about how to reset your metabolism. So, my goal today is to cut through the junk and bring you the best science I could find and help make sense of this for you. I want to make metabolism less of a mystery. And I also want to debunk some of the things that you may have seen or read about regarding your metabolism.

Because really, when you boil this down, it does not have to be as complicated as some people would have you believe. So, here's what we're going to talk about today: We're gonna talk about what is metabolism. And then we're going to talk about the different factors that add up to your total metabolism because there are a bunch of them.

Then we're going to talk about how to maximize your metabolism. And specifically, we're going to talk about what parts you can control and how to optimize what you can control. All right? So, let's go.

Okay, so first, what the heck is your metabolism? Let's try to make this as simple as possible. Metabolism is the sum of all of the chemical reactions in your body that keep it alive and moving. So, in relation to what we're

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talking about today, think of metabolism as the process your body uses to turn your food and drinks, if you drink liquid calories, into energy.

Metabolism is what provides your body with energy for things like breathing, and digestion, and for things like walking and lifting weights. It's basically taking your food and turning it into energy.

So, let's break this down some more. We're going to talk about the first component of your metabolism, that's your BMR or your basal metabolic rate. It's also referred to as your resting metabolic rate. All this is, is the minimum number of calories that your body needs in order to function while at rest.

You can think of this as the amount of calories you need to keep all of your body processes working properly while at rest. If you were to lay in bed all day, not moving, not eating, not doing anything, basically being a sloth, the calories that your body needs to do that, that's your BMR. Okay? That's your baseline.

Take note, this is not the total number of calories that you need in a day, it's just the number of calories you need at rest to stay alive. There's a big difference here. But one of the many cool things about metabolism is that it never stops. So even when you're sleeping, your body is still using energy in the form of calories in order for you to breathe, for your blood to circulate, for you to digest your food, maintain your hormones, and for your body to repair itself, among many other things.

What this means is that your body is always at work. The calories you need to sustain these basic functions, that's your basal metabolic rate, and that makes up about 60 to 70% of your total daily energy expenditure. If you really want to boil this down, 60 to 70% of the energy your body uses is simply to keep you alive; that's it.

Here is the coolest thing, in my opinion, about your basal metabolic rate. Do you want to know what's the main factor that contributes to your BMR? Here it is, muscle mass, your muscles. Yes, so I have said this before, and

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it definitely bears repeating here, your muscle is more metabolically active than fat. And all that means is that your body uses more calories to build, repair, and maintain muscle than it does fat.

So, if you take two people who both weigh 150 pounds, the person with more muscle mass will most likely have the higher metabolism because she will require more calories to sustain that muscle. Here it is again, another plug to start strength training, like right now. The more muscle you have, the more calories you need to sustain it, and the higher your metabolism will be. Okay? That is a really important concept to get.

Let's talk about some of the other factors that influence your BMR. And again, this is just the minimum number of calories you need for your body to stay alive. So, first and foremost, your genetics most definitely play a role here.

You cannot control how tall you are. You cannot control the size of your bones. You cannot control how large your muscles grow. And you can't control your body's ability to build muscle. That's your genetics talking, and genetics most definitely have an important underlying role in your metabolism.

Next, body size. People who are larger, taller, and have more muscle will require more calories than smaller, shorter, and less muscular people. This is true even at rest. Next, gender. So, in general, men tend to have larger bones, carry less body fat, and have more muscle than women of the same height and weight. At baseline, men tend to burn more calories than women. It's annoying, but it's biology. There are hormonal and genetic factors at play here that we simply cannot control.

Next, are medical conditions like thyroid disease, and Cushing's Syndrome. Those can also impact your metabolism. I don't want to go there today, but just know that if you have a true medical condition like thyroid disease, that most definitely can impact your metabolism. All right?

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And then last, age. That also impacts your metabolism. So, it's known that as we age, our metabolism changes. Part of this is because as we age, we tend to lose muscle mass. And the fancy medical term for this is "sarcopenia." All you got to know is as you lose muscle mass, you will need less calories. And again, this is just another reason to start strength training right now and keep going.

But I want to bring up an especially important point about age because even in the last year, we have learned some really cool things through science that we did not know previously. It used to be that we just assumed once you hit your 30s and 40s, your metabolism took a dive, and that was why it was so hard to lose weight. But now, the most recent science is basically causing us to shake our heads and rethink all of this.

There was an article in the Journal of Science. Now, this is a high-impact, well-respected scientific journal that made all kinds of waves last year when it shook up a lot of what we thought we knew about aging and metabolism. What it found was that our metabolism works in four phases throughout our lifespan. Those four phases are; the neonatal period from birth to one year, childhood and adolescence from age 1-20, adulthood from age 20-60, and then older adulthood after the age of 60. Those are the four phases.

Babies are really the biggest calorie burners of all humans, and it makes sense. From birth to age one, babies have the highest metabolic rate of all humans. According to this study, between 9-15 months, babies have a metabolism that is 50% higher than adults. It makes sense. Think about how much growth, development, and change happens in that first year of life. There's a lot of energy needed for those changes to happen, so babies have a fast metabolism to back it up.

Then, from age 1-20, your metabolism slows down to the tune of 3% per year until you hit age 20. This runs counter to the long-held belief that young people and teenagers can just eat whatever they want and not gain weight. That is not exactly true. Their metabolism is slowing down, and they will still gain weight if they eat more calories than their body needs.

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This is also the time, in general, when people are the most active in their lives. So even though your kid's metabolism may be slowing, relative to when he was a baby, there may also be a significant uptick in physical activity that keeps them from gaining weight.

All right, then, between the ages 20 and 60, our energy expenditure remains essentially stable. This was a key finding from the study. And what this means is that, at least according to this article, that slowing metabolism in middle age, from age 20 to 60, that's not the issue. That is not the cause of middle age weight gain. This is what caused the big stink in the news. The article found that, in fact, our metabolism stays essentially stable from age 20 to age 60. This is huge.

So then, from age 60 onward, that is when your metabolism, meaning your basal metabolic rate and your total energy expenditure, that's when it is thought to really decline. This happens at the rate of a little less than 1% per year. What this means is that by the time you turn 90, you'll need about 25% less calories than someone in her 40s or 50s.

What the study suggested, was once you hit 90, your body processes are slowing down. And as a result, so does your metabolism. I bring this up for one important reason. This study, which was a big one, suggested that we probably shouldn't be blaming middle age weight gain on fluid metabolism.

It is not all downhill once you hit your 40s and 50s. You are not destined to gain weight, and you're not destined to see a slow in your metabolism once you hit your 40s, okay? That's why this article was such a big deal.

I mentioned this article because it made a lot of headlines and shook up the widely held belief that our metabolism slowly declines from about age 30 onward. I will simply add it here that it was one article. And I've said it many times, but the science is constantly changing, and what we know to be the truth today may very well be what we laugh at 10 years from now. But this research was fascinating. And I would bet \$1, we're going to see much more on this in the future.

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Okay, so to step back for a second, we just talked about your basal metabolic rate, or BMR, and that it accounts for about 60 to 70% of your total daily energy expenditure. You don't have control over your BMR; however, if you want to increase it, strength train. Because the more muscle mass you have, the higher your BMR will be. That is a huge take-home.

So next, we're going to talk about nonresting energy expenditure. Remember, your basal metabolic rate is what you need when you're lying in bed, not moving, not eating, just not doing anything. Now we're talking about energy needs for activity, the stuff you do when you get out of bed.

First, let's talk about exercise. That makes sense, right? You need energy in order to fuel your body's capacity to exercise. And all this means is that planned exercise needs calories. And the percentage of calories that this will require is largely variable, it depends on your activity level. So, in most cases, planned exercise will account for about 5% of your total calorie expenditure; 5%. There's wide variation on this, but on average, 5%.

This is important, and here's why this matters. For many of you, when you tell me that you exercise heavily, that may amount to anywhere from 30 to 60 minutes of exercise in a day. And while you might go super hard in that workout, that exercise only constitutes a very small part of the total energy you put out in a day.

And this is not to discount your exercise by any means, okay? But because of the relatively very small contribution of exercise to your total daily energy expenditure, I'm urging you to be mindful on multiple levels.

First, it is widely known that the calorie trackers on your Apple Watch or your Garmin, and on your exercise equipment, are totally a guesstimate and are very unreliable. So please, please, please do not rely on your Apple Watch to tell you how many calories you have burned through exercise because, one, it is inaccurate. And two, it is totally misleading.

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And then second, many of you who use trackers like My Fitness Pal may have run into this, but if you log your exercise activity in that app, the app essentially says, 'hey, congratulations. Because you ran for 30 minutes on the treadmill, you burned 400 calories, so you can eat 400 more calories during the day.' This is wrong on so many levels, so many.

First, your treadmill or your bike, or whatever piece of exercise equipment you're using is pretty terrible at estimating your true calories burned during exercise; anywhere from 40-80% is the margin of error here. And second, the way that My Fitness Pal does this is a setup for equating your exercise with earning food. And third, if you are using My Fitness Pal and have used a TDE, or total daily energy expenditure calculator, to determine your calorie needs, you are already accounting for exercise.

So, when that app tells you that you've "earned" this many calories for your run, it is essentially double counting your exercise. All of this is to say, do not go back and eat back the calories that you burn through your exercise. The math does not add up. Your watch and your equipment are not a great estimate of how many calories you're actually burning.

And last, exercise is not a means to an end for weight loss. I don't want you exercising under the guise that you're exercising so you can eat more. That is a really great setup for disaster and resentment toward exercise. Okay, that's not what this is about.

To summarize, your planned workout will account, on average, for about 5% of your total daily energy output. That is not a whole lot. On the flip side, let's talk about non-exercise activity thermogenesis, or NEAT for short. NEAT is everything else your body does that is not planned exercise, eating, or sleeping.

It contributes anywhere from 15-30% of your energy output, contrasted to the 5% of planned exercise. NEAT is all the other movement that you get in a day. These are things like walking from the parking lot into the grocery store, cleaning your house, gardening, taking the stairs instead of the elevator, and walking or standing instead of sitting during your zoom call.

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Even fidgeting counts. People who fidget tend to burn more calories throughout the day than people who don't. Some studies noted that the difference was up to 350 calories per day. That's fascinating. This is why desk treadmills and ellipticals are becoming popular; the more movement you can incorporate into your day, the more you will bump up your NEAT.

And it's no secret that we are a very sedentary population. This is contributing to a risk of chronic disease, just as it is contributing to our expanding waistlines. And this is the problem. That 30-minute HIIT class you did is awesome, but it's a very small slice of your day. And if you're spending the rest of your day, from 9-5 or longer, seated in front of your desk, your NEAT is going to be low.

While that planned exercise is super important, it's a very small contribution to your overall daily energy output, about 5% at most, that's all. And all of this is to encourage you to find ways to be more active, get up, and move around. I know I just harped on your Apple Watch and all of its inaccuracies, but one redeeming quality is that it will remind you to get up at the end of every hour and walk around.

That is way better than sitting glued to your desk for hours at a time. So, whatever you do, it's important to find ways to increase your overall movement; that's your NEAT. Okay?

Last, let's talk about the thermic effect of food, or TEF. This accounts for about 10% of your energy output. I've mentioned the thermic effect of food before, and I'm going to explain it again here to keep it simple. It takes calories to digest the food you eat. And of the three food macronutrients; protein, carbs, and fat; protein has the highest TEF.

Meaning it takes the most calories to digest protein, about 20-30%. It takes the least amount of calories to digest the fat in your diet, about 0-3%. And carbs take about 5-10%. All this means is that if you eat 100 calories of protein, about 20-30 calories will be needed to digest it. So, before you get too excited about this, this amounts to a small boost of about 100 calories

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burned in a day from eating a higher protein diet; that's it. However, that's better than nothing, and that can add up over time.

I know I've said it before, but this is just one of the many reasons why I love talking about protein. I'm not telling you to go crazy and eat nothing but chicken breasts and egg whites. However, this is just one more reason to consider the percentage of protein in your diet.

Most literature suggests 20-30% of your daily calories from protein to maintain weight loss. And more science is suggesting that in the perimenopausal and menopausal population, increasing the percentage of your daily caloric intake from protein can help to decrease abdominal wadding. I say this because I think we're going to keep seeing more and more about this going forward. So, stay tuned.

There are other factors that can impact the thermic effect of food, too. Things like age. It's thought that the thermic effect of food decreases with age. And again, this is likely related to our body processes slowing down. Physical activity is thought to increase the thermic effect of food. Meal size and frequency also matter.

So larger, less frequent meals, increases the thermic effect of food. Low-fat plant-based meals are also thought to increase the thermic effect of food. Again, as with everything, the literature on this is evolving, but keep your eyes open. And I imagine we're gonna be seeing a lot more about this in the near future. All right, so that is your metabolism in a nutshell.

To review, you have resting energy, and then you have nonresting energy expenditure. Your resting energy expenditure, your BMR or basal metabolic rate, that's your baseline. That's the calories you need to keep you alive and functioning. Think of lying in bed, not moving, but just breathing. That accounts for about 60-70% of your daily output and is impacted by things like your genetics, body size, gender, and age.

Then you have nonresting energy expenditure. That includes things like exercise, which is about 5% of your total output.

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And then Non-Exercise Activity Thermogenesis, or NEAT, which can be anywhere from 15-30% of your output, and is all of the other movement in your day, like taking the stairs or walking to your mailbox.

And then, there's the thermic effect of food, or the energy needed to digest your food, which accounts for about 10% of your energy expenditure. Protein is the highest. Okay?

So, the thing to take note of here is the math. Your basal metabolic rate, your BMR, makes up the majority of your total energy output, about 60-70%. But you don't really get to control that. You can't control how many calories your body uses just to live, right? That's dependent on your age, gender, height, weight, and genetics.

The one thing that you can sort of control, in relation to your basal metabolic rate, is your muscle mass. That's the one thing that you can control, sort of. This is to say, the more muscle mass you have, the higher your basal metabolic rate will be. But you don't get to control how easy or how quickly you put on muscle through strength training. That's why I say it's something you can only kind of control.

And then, the remainder of your energy expenditure, that remaining 30-40%, is made up of things that you absolutely do have control over. You control how much planned exercise you do or don't do. You control how much nonexercise activity, or NEAT, you get. You control what the composition of your meals is.

You do have control over some of the factors that contribute to your energy expenditure. All right? That's another key take home here; you can control how and how much you move. You can also control what and how much you eat. And those things will contribute to your metabolism.

Okay, so now that you understand what your metabolism is all about, I want to make the connection between your metabolism and weight loss. And this is essential to understand. I reviewed this and Episode 6, where I

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get into all the myths and truths about calories. But I'm gonna make it really clear here.

If you are trying to lose weight, when you do start to lose, your body goes through a process of metabolic adaptation. This is not super fancy. It just means as you lose weight, your body will adjust its energy output to match your new lower weight. Or, even more simply, as you take in less calories, your body will use less calories to maintain balance; the fancy medical term is “homeostasis.”

And if you cut your calories severely, which I don't ever recommend you do unless you are being medically supervised, you run the risk of really messing up your metabolism. Your body will fight you tooth and nail, and it will slow down your metabolism to match your very low-calorie input.

This is why, in general, a slow and steady approach to weight loss is much more tolerable and doable than a drastic reduction in your calories. As you lose weight, your body will then use less calories in order to stay in balance. And we want that to be a slow and steady process.

If you are a yo-yo dieter, this is especially problematic. So, as an example, imagine you start at 250 pounds, and you diet down to 200. And then, you regain those 50 pounds back, and ultimately land at 250 where you started. The calories you need, now that you're back at 250, back to that original starting weight, will be less than what you needed when you were at 250 pounds before you started dieting.

And this is all because of the impact on your metabolism. This is why yo-yo dieting will wreak havoc on your system. And this is why finding a way of eating that is tolerable and sustainable for the long haul is crucial.

To be completely honest, this is not about dieting; diets don't work. This is about finding a way of eating that you can do for the long term, so you don't mess with your metabolism; there's a big difference.

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Alright, so now let's talk about how you can optimize your metabolism. And I say that with a bit of caution because I want to be really clear, there is no magic bullet. To my knowledge, there is no one supplement or food, or powder that is going to fix or boost your metabolism. And I want to shout this from the rooftops because so many people are peddling their pills, or powders and supplements, or systems that promise to fix your metabolism; I call their B.S.

Again, once I see repeatable, non-industry-funded, high-quality evidence to support a supplement or food to fix your metabolism, I will change my tune. But until that time comes, please don't waste your money. Okay? Instead, there are things that you can do to help your body function at its best; that's it. And none of these are going to come as any surprise to you. They are simple, they are not fancy. And that is exactly the point.

First, I've already said it but consider your protein intake. Protein takes the most calories to digest. Eating a higher protein diet, anywhere from 20-30% of your daily calories, can give a small boost of about 100 calories per day. That is a small boost to your metabolism. I don't even know if I should call it a boost, but it's something. And if you're trying to build muscle, protein intake is essential.

Next, ensure that you're drinking water. So this should come as no surprise but staying adequately hydrated ensures that all of your body's processes are working properly. This is in contrast to sugary drinks, okay? Water; drink water. That is really the only liquid your body needs.

Next, lift the weights. There are so many reasons to lift weights. But a key takeaway here is that lifting heavy weights will help you build muscle. The more muscle you've got, the more calories you need to repair and sustain it. The more muscle you have, the higher your basal metabolic rate. And having muscle just plain feels good, period. Building muscle will help your metabolism.

Alright, next, exercise. Well-planned physical activity, like cardio or running, or swimming, while that only accounts for about 5% of your total energy

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output, for some of you, that percentage may be more like zero right now. So, if you are not exercising, don't start just because of the effect on your metabolism. The point here is not to exercise to lose weight. You're exercising to take care of your body, and because it is so awesome for your brain and your mood. And then, you can take the metabolic benefit as a bonus.

Then next, move more. So, this is the Non-Exercise Activity Thermogenesis, or NEAT, that I was referring to. Get up from your desk and take a walk every hour, pick a far parking spot, fidget, have a walking meeting, and just move your body more; the more movement you have, the better. Don't be sedentary.

And last, a few things that may or may not help, depending on what you've read. Okay, so green tea may have a small short-term impact on your metabolism. But the literature on this is mixed, at best. And if you Google this, you will see what I mean.

In regard to coffee, there's some literature that suggests it may help boost metabolism, but it's dose-dependent. And the effect on your metabolism was seen in amounts of 4-7 or more, cups in a day. That's a lot of coffee. If you're sedentary, the impact may be greater than if you're already active. And the effect may be lessened if you're a habitual coffee drinker. All of this is to say, don't depend on your coffee to fix your metabolism.

The same is true for chili peppers. There may be a small benefit, but the effect is short-lived, and the impact is small. And if you go back to the literature on this, it is all over the map. So, please don't swear by your capsaicin supplement to help fix your metabolism. Okay?

The take-home here is that in order to optimize your metabolism, there's really nothing wild or fancy that you need to do. Instead, exercise regularly, include lifting weights, increase your non-exercise activity, avoid being sedentary, eat whole foods including protein, and of course, sleep. I don't want to harp on it too much, but you absolutely need adequate sleep in order for your metabolism to function properly.

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To wrap this up, I want to answer an important question I get asked all the time. And that question is, can you reset your metabolism? So, in a word, no. But if you were to Google this, which I did, and you should try it, it's totally overwhelming. There are loads and loads of various health practitioners, influencers, and people who are trying to convince you to buy their supplements or buy their detox or buy their system in order to reset your metabolism. No.

Now, if there is a supplement that you're taking, and it makes you feel good, go for it. Okay? If you like how something makes you feel, and you think it's working and worth the money, do it. But at this point, there is no resetting your metabolism. You are not starting over. You're not pushing a button to clear out everything that has happened in your body for the last few decades. And you're certainly not doing that by drinking a tea. You are picking up where you left off; nothing more and nothing less.

Do the things that we've talked about; exercise, lift weights, eat a whole foods-based diet, drink water, and sleep. Treat your body the way you want to be treated, and then let your body do its job. No powders or tinctures are necessary. Okay? Seriously.

Alright, so I hope that this clarifies what can be a super confusing topic. I hope you walk away understanding that one; all hope is not lost once you hit your 40s. Two, there are most definitely factors that you can control that will impact your metabolism, like eating and moving. And three, you don't need to do anything wild or fancy to optimize your metabolism. Let's keep things simple, okay?

Thank you again, for hanging out with me. This podcast was the result of a few listener questions. And I appreciate you sending your suggestions my way, please keep them coming. I appreciate it. And I will catch you again next week.

If you like what you've been hearing, please review the show. I would love to get your feedback and ideas. Your suggestions have inspired episodes and will help me make the show better for you. And share this podcast with

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a friend, text a show link, share a screenshot, or post a link to the show on your social media. Be sure to tag me @CarrieHollandMD on either Instagram or Facebook, so I can follow along and engage with you.

This is how we get the word out to other working moms who want to feel strong, inside and out. If you know someone who wants to feel better or eat and move differently but she is too tired or too busy, it is time to change things up. And you know, making that change starts with how you think. And that is what we do here on the *Strong as a Working Mom* podcast. I'll see you next week.

Thanks for listening to *Strong as a Working Mom*. If you want more information on how to eat, move, and think, so you can live in the body you want, with the mind to match, visit me at CarrieHollandMD.com.