



# Nutrition 101 (Part 1)

Hi everyone, it's Megan Ramos here, and welcome to today's lesson on nutrition. I've actually divided this up into a two-part series. So today we are going to get started with Nutrition 101, part one.

What we're going to discuss today is the macronutrient response in insulin, the relationship there. And we're going to do a deeper dive into carbohydrates with the exception of fruit, which we're going to talk about in part two. So today in part one, macronutrients and insulin, carbohydrates, and in part two, we're going to discuss dietary fat, fruit and sweeteners. So let's get started discussing macronutrients and the relationship with insulin.

What are macronutrients? Well, they're the main building blocks of our meals, and these are the same building blocks across all cultures and cuisines. So a lot of what you'll hear about in the United States and Canada are very sort of standard North American meals and dishes. But this can truly be applied to any culture, any type of cuisine across the world. And the reason why all of our foods are made out of the same building blocks. They're all composed of things like carbohydrates, protein, and dietary fat. So it's important to understand that even though we might consume carbohydrates differently, an example would be bread, pasta, chapati, different forms of these carbohydrates. Some people might eat more rice in their culture, some people might eat more potatoes, but the bottom line is they're carbohydrates. So across all of our cultures, our foods, our staples are all made from these three primary building blocks.

Let's discuss carbohydrates here for a second. Carbohydrates, they can be complex and they can also be very simple in terms of structure. Complex carbohydrates tend to take quite a bit of time to digest by the body, whereas simple carbohydrates get rapidly digested by the body.

When we consume more complex carbohydrates, our body has to complete the digestion from start to finish of those particular carbohydrates. So digestion does take a bit longer. As a result, we don't see as sharp insulin spikes and we don't see as sharp glucose surges.

Now when we consume processed and refined carbohydrates, so simple carbohydrates, digestion has largely been done outside of the body or these foods are just rapidly digested into our system. So we get those glucose spikes followed by those insulin surges.

But there's some big misunderstandings out there about what exactly is a complex carbohydrate. Most people will look at the items on the right-hand side here and say, these are all complex carbohydrates. And some of them are and some of them aren't. So let's take bread

and whole wheat pasta for an example. People will say that these are better options, things made of whole wheat because they're "naturally occurring," but that is not the case with things like bread and pasta. They sure come from whole wheat, but that wheat is then pulverized down by humans and made into flour, and then that flour is combined with other ingredients and then made into other food items like the pasta, and like the bread. So when we consume pasta and bread, we're not consuming complex carbohydrates. What we're actually consuming are processed carbohydrates.

Now, complex carbohydrates, if we're to eat that wheat in its whole form on its own, untainted by humans, then that's a complex carbohydrate that's going to be digested slowly by the body or much slower. It's not going to result in as sharp of a glucose spike or an insulin surge. But when we consume it as a processed and refined carbohydrate, what we usually see is these surges and these spikes in glucose and insulin. And that's because we have made these things from wheat flour. Wheat flour is not a complex carbohydrate, it is a processed and refined carbohydrate.

So we want to think of things in terms of rate of digestion. It can make a big difference on our glucose and our insulin response. How much of that natural food are we digesting ourselves versus how much has been digested by humans in food processing such as pulverizing a whole grain down to its wheat form or its flour form, rather. It makes a big difference. So we want to think about our bellies being a food processor. How much food processing does it need to do? And that amount of food processing will dictate the glucose and insulin responses to these particular food items.

Now, when we were in the clinic, I used to ask everybody to take a second and to tell me the top five foods that they would eat or they would... Sorry, they would be eliminated from eating if they wanted to lose weight. And these are not junk foods. What are the top five real foods that you would cut out of your diet in order to lose weight? And I always hear about things such as bread, pasta and rice, which are highly processed in carbohydrates. And then I'd hear about things that are not necessarily so processed like potatoes and corn that are consumed in their more whole form. I'd ask the group to take a second and pause. These food items are low-fat, low-calorie foods. So why is it that we are eliminating these particular carbohydrates from our diet when we want to lose weight? Why do we restrict low-fat, low-calorie foods when diet culture seemingly indicates that these would be the optimal foods for weight loss?

Now, if you've tried any diet, you know that this isn't true. If you eat these foods, they inhibit weight loss. If you eat these foods, you're diabetic, you see your blood sugar levels go up. You never want to eat these foods and have a glucose test at your doctor's office. Why is that? And the truth in lies is that we're not really talking about a caloric response within the body. We all think this calories in, calories out is a be-all and the end-all for determining our progress here and whether we're going to lose weight or not lose weight.

Well, let's look at calories for a second. Say we have a can of soda. Can of soda is roughly 150, 200 calories. Say we have a handful of almonds, and depending on your hand size, that's also

roughly 150 to 200 calories. You know these foods have a different effect on our ability to lose weight. You understand that drinking that can of sugary soda is not going to serve your weight loss goals. In fact, it will slow down your weight loss goals. If you're diabetic, it is going to cause your blood sugar levels to shoot up and stay elevated for a longer period of time. So these are not foods that we want to be consuming when weight loss and improvement in metabolic diseases is our goal. But those handful of almonds, you know that they can serve you well. You know that they can result in weight loss. You know they're a better option.

So then what do calories really have to do with any of it? 150 calories, 150 calories, shouldn't they be the same according to all of these mathematical equations about calories in calories out being the be-all and the end-all for weight loss? None of that makes sense. And the reason why is the hormonal response by the body. So when we consume something like almonds that are made of some carbs, but a lot of fat and a lot of protein, we elicit a very different hormonal response than when we consume straight sugar. And the hormone that we're talking about here, the primary hormone that we're talking about when it comes to gaining weight, preventing us from losing weight and from worsening our metabolic disease like type 2 diabetes is insulin. So the relationship of these macronutrients to insulin really should help us, guide us to what it is that we need to be consuming or not consuming at our meals.

So carbohydrates, processed and refined carbohydrates, complex carbohydrates or unrefined, unprocessed carbohydrates. All of these carbohydrates, their primary function in the body is to provide the body with fuel. That's not their only function, but it is largely their dominant function. So they are a fuel source for the body. They're a direct fuel source for the body. But the thing about this fuel source, in order for it to be utilized to the body as fuel, our bodies have to produce insulin to help manage the glucose load, the sugar load. So insulin manages the sugar load in one of two ways.

First, it will either give the cells energy, it will enable the cells to accept the glucose into the cell to be utilized as energy, or it will store it for use later on. Often it gets stored in our fat cells for use later on because we just consume so much of it. So this is what our problem is, is that we consume diets that are high in processed and refined carbohydrates or just very high in carbohydrates in general. So when we consume that, we have to produce a lot of insulin and our cells truly only need so much fuel, so then the insulin has to store it as fat to be used later on. But we keep eating. The diabetes associations, the food guides, they recommend we eat six or seven meals a day and we have lots of snacks. So we're constantly eating these foods that are the base of the food pyramid. But what we are doing then is constantly giving ourselves fuel that it doesn't need. So then we have this abundance of insulin in our system and that insulin converts it to fat.

Now, sugar molecules, glucose molecules in the body, they're kind of like toddlers. When they come in... When they're let loose, they don't know where to go or what to do. They can't get into and out of stores and stuff on their own. Insulin acts as a guardian. Insulin is what enables the glucose to get into the cell. Insulin is what enables it to be stored as fat to be utilized later on. So when we eat these foods, our glucose is dependent upon insulin for doing what it needs

to do to manage the glucose load, to manage the sugar load in the body. So when we eat these foods, these micronutrients, these sugars, they're largely dependent upon glucose and insulin being able to work together. So we have to produce a lot of insulin in response. So carbohydrates are completely dependent upon insulin. When you consume them, you're going to raise your insulin levels.

Now, let's talk about protein for a second. Protein's not a directed energy source. It's primarily a building block for growth and repair. But despite what many commercials of meal replacement shakes and protein shakes would lead you to believe, your body only needs so much protein. There's only so many building blocks required for growth and repair every single day. So we see these commercials advertised. You get these cartoon arms and you have this cartoon person drinking a protein shake and then their biceps are just growing. That's not how it works. We only have so many requirements for growth and repair every day. Just because you're eating protein does not mean you're going to grow muscles and be strong. That's not how it works. The amount of repair in the body will dictate it. The amount of exertion that we're doing, the amount of micro tears we're getting in our muscles when we're at the gym, those are things that are going to drive growth. So just drinking or consuming protein at meals or throughout the day is not going to result in growth on its own.

Now, imagine you're building a shed in your backyard, a brick shed, and that brick shed calls for a thousand bricks to build the shed. Well, say you ordered 10,000 bricks. At the end of the day, you only have so much space in your backyard. You've maxed out what you can and it only takes a thousand bricks to build that shed. So you're left over with 9,000 bricks at the end of the day. That's a lot of bricks. You have to do something with those bricks. You just can't keep building and building and building. You don't have the space. You've got to get permits from your residential community. You just can't keep building. There's no land, it can't happen. So you've got to find a means to dispose of those bricks.

So if we liken proteins to these bricks, we only need so much for growth and repair every day. So what do we do with the excess? What do we do with those extra bricks that we are consuming, the extra protein that we're consuming every day? Well, this is what happens. In the liver, this protein, this excess protein gets converted to glucose via a process called gluconeogenesis. So this is why so many of you who track your blood sugar levels, you're just becoming really mindful. You want to take control of this, you want to transform your health. You're not going to be that diabetic on medications.

So you start paying attention. You wear continuous glucose monitors, you're checking your glucose levels and you're being conscious of what these numbers actually mean. And this is always, always a question that we get from the people that we work with in the community and in our coaching groups. These individuals start to become hyper aware of their responses to food and what they're consuming. They know that eating a lot of carbohydrates is going to cause their blood sugar levels to go up. So they go to a restaurant, they're super proud of themselves, they get a nice big honking steak, and they get asparagus on the side and maybe a salad. Very little in terms of carbs, especially starchy carbs. They pass on the potato side dishes,

they skip the basket of bread. But what happens is an hour later, two hours later, their blood sugar levels are elevated and they don't understand why. They would come into their coaching groups and they would say, "Megan, we pass on the potatoes, we pass on the bread. We don't know why? We ate a 14-ounce steak or a 16-ounce steak. How could that elevate our glucose levels? We just ate protein." But your bodies only need so much protein. So that excess protein got converted to glucose via gluconeogenesis in the liver. So this is where we're running into issues.

And individuals who are overweight who do fall in the obese category, they actually have 50% more protein in their systems than an individual who has an optimal body composition. So as you get healthier, you'll notice your demands for protein elevate, but while you are repairing disease, you've got excess protein. When you're looking to lose that weight, you have excess protein. So it's why you are more sensitive to having excess protein than an individual who is at a healthy body composition.

And something that you will find as you get healthier is that you will have a greater demand for protein in the body. So what happens? We get healthier, but then the fasting gets harder. We get fatigued, the brain fog sets in, and we have cravings for sugars, for sweets that we've never even desired in the past. All of a sudden, this hits us like a brick wall and we think, "Oh my gosh, are we damaged? Are we sick? Are we developing insulin resistance again? What is going on?" But this is a sign that excess protein that you had when you're overweight, that's gone now. So we've got to increase the protein in our foods.

So the diet that works for you today is not going to be the diet that works for you in six months from now or 12 months from now. You're going to find that your energy demands change, especially as we deplete our internal protein stores as we lose weight. So I always joke, I'm Megan. I'm very much me. I'm me when I'm working with you in the community, one-on-one, filming these videos, talking with my team, at home with my friends and family. I'm Megan, but metabolically, I've had a dozen different personalities and usually they evolve adjusting the macronutrients as I get healthier. So your demands might be lower, but they might become higher as time goes on. You might need to eat more as time goes on too.

Right now we have excess weight, so that's largely going to fuel us. Our meals might be smaller and when we get healthier, we might not have that excess weight to tap into. So we might have to increase our fat, protein and carbohydrate intake. Of course, healthy, the green light carbohydrates that we're going to talk about.

Now, how much protein should you be having? I'm going to give you some mathematical numbers, but a good rule of thumb is if you are having a two-meal eating day, then our protein source should be the size and thickness of the palm of our hand. So we would have two servings of protein, the size and the thickness of the palm of our hand on any two-meal day. Now what if you're doing a one-meal day, like a 24-hour fast, which many of you in the community refer to as OMAD? So you would fast from dinner last night to dinner tonight, but dinner tonight is your

only meal of the day, or many of you really enjoy doing 48-hour fast, or maybe you're doing a 72-hour fast.

Well, those days where we break our fast at the 48-hour mark or at the 72-hour mark, we're only consuming one meal. Do we need to compensate for the protein? The answer is no. You've liberated a lot from your system already during that fast. There's no need to compensate for it by having several pommels of protein at that particular meal. But most people do find that the appetite is a little bit more substantial and they can eat a little bit more food when they're just having one meal, a 24, 48 or 72-hour fast. So if you are having one meal on your eating day, or when you break your fast that day, then strive for the size of your entire hand and the thickness of your entire hand. Now, using your hand as a guide is a really great resource. We're all very different in our heights and our body compositions and our bone density. So it's a good general guide so you don't have to sit there with a waist scale and try to figure it out.

Myself, I'm five foot three. I'm around 120 pounds. My husband, he is six foot four and he's around 185 pounds. We have two very different body compositions, so the palm of his hand is pretty much the size of my entire hand. My entire hand fits in the palm of his hand. So our hands can really sort of guide our body composition and how much we actually need.

When I was in the clinic in Toronto, before we moved everything online, the hands and the palms were the only guidance I ever gave because anybody could do that at any restaurant, at any meal, even if they didn't have time to plan in an advance. And they could visualize their hands, they could see their hands and they could visualize what it is that they need to cook for those meals too. Rather than it being difficult to try to visualize something like four or six ounces, you've got your hand right here to look at. It's a good guide for you.

Now, if you want to get into the nitty gritty of the math of it all, there are some calculations that you can do. Before I get started, I will let you know that one pound of body fat is equivalent to 2.204 kilograms of body fat. Most of medicine does use the metric units, so our calculations here are in metric.

Now, if you're someone who's trying to lose weight and is not actively going to the gym, has a much more sedentary lifestyle at this point in your journey, then what we're looking to consume is approximately 0.6 grams of protein per kilogram of body mass. If you are someone who is more active, you want to be increasing that somewhere between one and 1.2 grams of protein per kilogram of body mass. And many women, especially postmenopausal women or women going through perimenopausal menopause, actually have higher protein demands. So we're typically looking at about one gram of protein per kilogram of body mass. So this is sort of the general range.

When I'm working with individuals who want to count, who want to target something, we typically start off at one gram per kilogram of body mass, and then we'll adjust down or we will adjust up depending on their symptoms. So we would adjust down if there was a need for increasing weight loss and it didn't look like we could adjust any of the other macronutrients.

We would adjust up if individuals were struggling with their fasting, experiencing brain fog, or experiencing any hair loss and experiencing sugar cravings. That's when we would adjust upwards.

Now, let's talk about dietary fat. And before we get started, it's important to understand that our fat, the extra fat we have on our bodies that we want to get rid of, are not sticks of butter. Those are not pieces of salmon. They're not jars of olive oil. Our fat cells are literally full of glucose. They're full of bread, pasta, rice, potatoes, corn, and sugar. They are not full of fat. Body fat and dietary fat are totally different things. It's like comparing an apple to a basketball. They're totally different things. They've only gotten common that they're around in shape. So dietary fat and body fat are very different things. The only thing they have in common is the word fat in both of their names, which I think is very unfortunate. It's kind of like type 1 and type 2 diabetes. People often get very confused about this. Type 2 diabetics think that they can't make enough insulin. And sometimes type 1 diabetics hear about type 2 diabetes being able to reverse itself and think that the same applies for them because diabetes is in the name, but they're very different conditions.

Type 2 diabetes is the disease of excess insulin causing havoc in the body. Type 1 diabetes means there's an autoimmune condition preventing your pancreas from producing enough insulin to survive. So you do need some exogenous insulin. So they're very different things, but because diabetes is in both names, it makes it very confusing to the population that doesn't have a medical background. So when you are thinking about your body fat, it is not dietary fat. It is bread, it is rice, it is pasta, it is low-fat foods that are what has caused that body fat.

Now, when we think about dietary fat, dietary fat, well, it is a fuel source for the body. It does have many other functions, rules and responsibilities. Most of our nutrients, our vitamins get absorbed when we consume dietary fat. If you eat a low-fat diet, even if it's a nutrient-dense one, you're not going to absorb as much nutrients than if you were to eat fat with it. Olive oil helps you absorb the vitamins that we want from these foods. Otherwise, they're just going to end up going through your system and out through your stool. So we don't want nutrient-dense stools. We want nutrient-dense bodies.

Dietary fat also helps create the base of our hormones. It's a building block of all of our hormones. If we are fat deficient, we're going to be deficient in some hormones that we need. And for women, men, as we age, this is problematic. We want to make sure that we've got healthy hormone production, especially when it comes to sex hormones. So fat plays a lot of roles in the body. It's not just a fuel source.

And in terms of a fuel source, when we consume fat and we are utilizing it for fuel, we use free fatty acids and ketones, which are a fuel source like glucoses, but a fat fuel source. We actually have a negligible insulin response. So when we consume it as a fuel, if you think of it, the glucose is a toddler that needs insulin as a guardian to guide it around. Well, the dietary fat is an autonomous adult. It can get around the body without needing guidance.

All right, so let's do a deeper dive into carbohydrates. Before we get started with that, now, if we have a disease of too much insulin in the body, and so much so that we develop insulin resistance where our cells are now resistant to our own insulin levels, you've got to think about our diet. Do we want to add fuel to the fire or do we want to try to not add any more fuel to the fire? If you eat a diet that's high in carbohydrates, you're adding a lot of insulin to the system. If you eat a diet that's low in carbohydrates, you're adding less insulin to the system. So if you need a diet that's high in natural fats, it's going to be low in carbohydrates, it's less insulin. You're not adding fuel to the fire. And this is the logic behind a low carbohydrate, moderate protein, higher fat dietary choice.

Now let's take a look at these carbohydrates. These are the carbohydrates you want to eat mostly. Leafy greens, fibrous, non-starchy vegetables, so anything that grows above the ground. Fruits like olives and avocados. Carbohydrates that we want to eat occasionally. This means we need to be conscientious about their portion sizes. North Americans typically get this wrong as they make this the base of their side dishes, and this is what we need to eliminate. They need to be small portions of our meals and consumed infrequently. So things like nuts seeds and their butters, things like tubers. So those root vegetables that grow up below the ground. Quinoa is not a grain, but it is often lumped in with grains, but it's a much healthier option. And other fruits like berries, apples and pears. Now these foods...

It's important to understand too, things like nuts, seeds, and their butters are often problematic because people use them as meal replacements. Instead of having a side dish of broccoli, for example, they'll have a side dish of nuts. Nuts are also carbohydrates as well as fat and protein sources. And a handful of nuts, well, I mean that's almost equivalent to the protein in a steak. So if you're eating that in conjunction with other protein sources, it's going to be problematic, and it's very easy to sit down and eat an entire jar of peanut butter or almond butter, much like we would a tub of ice cream. So when you're consuming nut butters, we encourage you to cap it at a bit tablespoon a day when you're consuming nuts and seeds, unless you're on a plant-based diet, no more than a total of half a cup a day. When you're having things like quinoa, no more than a total half a cup a day. And tubers should never take up more than 25% of the real estate on your plate.

Berries, apples and pears, we're going to get into some more detail about those later on. They are very high sugar fruits, but they're also high in fiber as well. So you just need to be cautious of your portions with berries about half a cup, half an apple that you would find at the store, or a smaller apple that you might get at a farmer's market, half a pear that you might get at a store or a whole pair that you might get at a farmer's market. That's about the size of a fist of a child.

Coconut and almond flour are also things that you should consume occasionally. People usually think these are great substitutes for flours, and they are. They're great substitutes for green flours, but they've still been digested. They've still been processed by man. So when we consume them, they still have carbohydrates and they're going to be rapidly digested by the system. So they're great to use at the start of your journey when you're trying to look for meal replacements for certain things like using almond flour and coconut flour instead of wheat flour



for bread, but you do need to be conscious of them. You do need to understand that they are going to increase your blood sugar levels.

Carbohydrates that we want to limit. Sweetened beverages, juices, and sodas, including rice, including brown rice. They're all very processed. Grains and all of their flours and all other fruit, especially corn and high fructose corn syrup and sugars and sweeteners. And we'll get more into that in a bit.

Now, one, you're occasionally going to eat those yellow light carbohydrates. And when during special occasions like holidays, you might eat the red light carbohydrates. There's two main principles to help consume them and make them safer. The first one is don't ever eat them naked. We want to dress our foods up. We don't want to eat just a handful of berries on its own. We don't just want to have a potato on its own. We want to consume them with fat, protein, fiber and vinegar where applicable. All of these things are going to slow down the digestion of the carbohydrates. They're going to minimize glucose spikes and insulin surges in response. So if you have a potato, make sure you are consuming it with some fatty protein, fiber vegetables, and don't be afraid to dress in vinegar. It actually makes a huge impact on your blood sugar levels. And when you do consume them, eat them last.

So when it comes to Thanksgiving dinner, which is around the corner here in the United States, if you're going to have that sweet potato casserole, eat your turkey first, eat your vegetable sides first, and then have that sweet potato last. Eating the carbohydrate or the sugar at the end of the meal will actually reduce your glucose levels by about 30%. On top of that, it will also help you control your appetite. So if you eat on an empty stomach, something like the sweet potato casserole, it's going to immediately spike your appetite, and it's going to make it very easy to eat a bunch of other foods. But when you eat the fat, the protein, the fiber, and when you've added vinegar where applicable like on a salad, well, you're really suppressing your appetite hormonally, physically. So when you go to eat those carbohydrates like the sweet potato casserole, you just can't eat as much of it. So we always want to dress our carbs up, and we want to eat them last.

So never eat just a potato on its own. Never eat just a handful of berries on its own. Eat them with meals and dress them up in these items, and always eat them last at a meal.

All right, everyone, we'll see you back here for part two next time.