

EPISODE 15: THE DIABETES DIET: AN OVERVIEW

Rita Kalyani, MD Welcome to *Diabetes Deconstructed*, a podcast for people interested in learning more about diabetes. I'm your host, Dr. Rita Kalyani at Johns Hopkins. We developed this podcast as a companion to our Patient Guide to Diabetes website. If you want a trusted and easy to understand resource for diabetes, or to listen to previous podcasts, please visit hopkinsdiabetesinfo.org.

Today, we are thrilled to welcome Maureen Seel to our podcast. Maureen graduated from the University of Idaho with a degree in dietetics. She has more than a decade of experience in nutrition, with most of that time being dedicated to educating patients on management of diabetes. She earned her certificate in Diabetes Education in 2015 and has a passion for helping people with diabetes live healthier and happier lives. Her interests include yoga and learning new recipes to make for her family and friends. Welcome, Maureen.

Maureen Seel, RDN/LDN, CDE Glad to be here.

RK: We are so excited to learn more about diabetes and nutrition. And this is such a common question that comes up from patients and one that really impacts the day-to-day life of someone living with diabetes. So, I wonder if you could just start off by telling us why is nutrition so important in diabetes?

MS: Nutrition is important in diabetes for a lot of different reasons: partly because diabetes can lead to a lot of other health complications and some aspects of what we eat, namely carbohydrates, can raise blood sugars. And that gets into some basic nutrition information about what are carbohydrates and what is fat and what is protein. But to be specific, carbohydrates turn into sugar and it comes from a lot of different foods. Carbohydrates are found in many different foods. And having a good understanding of what those foods are and how much of them you're supposed to eat can really impact your blood sugars.

RK: You mentioned carbohydrates, which are so important for people with diabetes to be aware of, because of the effects on blood sugars. How about protein and fat? Could you talk a little bit about what generally those are and maybe provide some examples?

MS: Protein is found in a lot of different foods, both plants and animal products. When we think of protein, most people tend to think of meat or eggs or cheese. It can also be found in beans, lentils, and peas. And protein is important for a lot of different reasons. A part of it is because we need it to help build our muscles. It's an important compound that's helpful for our immune system. It's important for muscle repair and growth and then also for immune function.

Fat is found in several different foods. And a lot of times people hear the word fat and the first thing you think of is, "Unhealthy fat is not good for us." But there are some fats that actually are very important for heart health [and] for brain development. And we can find fat in several different foods but it's important to understand the different kinds of fat, as well. Fat is healthier fats and less healthy fats. Or you can think of them as saturated fats which are less healthy fats

and unsaturated fats which are healthy fat and important for heart health. You can find healthy fats in things like olives, and in avocados, as well as fatty fish like salmon.

RK: That's really helpful to know. And I think what you mentioned about not all fat is bad is also really important to keep in mind knowing the difference between the saturated and unsaturated and the unhealthy versus healthy fats. For carbohydrates, we hadn't really talked about examples of those. I wonder if you could give some examples of those, too.

MS: Carbohydrates are found in... I think of it as five different types of foods. Carbohydrate can be broken down further into starches and sugars. [For] starches, we tend to think about as being very slow to digest or slower to digest. So, these foods usually don't raise your blood sugar very quickly. And those starchy kinds of foods come from grains, and that's going to be anything made from flour: [such as] crackers and bread and pancakes and pretzels, that kind of thing, pasta, rice, and also from starchy vegetables – so that would be your potatoes, lentils, peas, corn, and sweet potatoes.

And then sugary carbs can be found in natural sources like fruits and fruit juices; as well as milk and yogurt [which] contain lactose which is milk sugar, basically. So people who have lactose intolerance can't break down milk sugar. And then of course from foods that have added sugar like sweets, so sodas or candy or cookies and pies – anything you can think of that has added sugar.

RK: Are all carbohydrates bad for people with diabetes?

MS: Definitely not. And I like to think that there is no bad food because food is not capable of being good or bad. Food doesn't have morals. But there's certainly healthier options and less healthy options. So, you can't really compare a cup of blueberries to a can of soda. So there's higher-quality carbs and lower-quality carbs. You want to try to avoid the very low-quality carbs or do them not too often. And then put more emphasis on healthy carbohydrates like whole grains, quinoa, and fresh fruits and vegetables.

RK: When we talk about carbohydrates, the question [that] often comes up [is] about concentrated sweets. Do you recommend those? Do you restrict those? What do you usually recommend?

MS: [For] concentrated sweets, I usually define those as a food that is high in sugar, high in calories and low in nutritional value. So a good example of that is like a can of soda. It's basically sugar water; there's no vitamins, there's no protein, there's no fiber, there's nothing really redeeming about the food. For those kinds of items – and juice is almost in that same category, as well – it does have a few vitamins in it, but really, it's mostly liquid sugar. Those foods or beverages do have a place in treating low blood sugar. For someone who may have diabetes and be on medications that can cause low blood sugars that would be a reasonable time to have something like juice or soda if you were low. In general, I wouldn't usually advise people have those as a normal part of your diet.

RK: So that would include things like desserts, or cookies and cakes and those kinds of things, too. But is it possible for a person with diabetes to still have that as part of their diet?

MS: Certainly. I always tell everybody like [on] my birthday, my carrot cake is one of my favorite foods, and I will have a slice of carrot cake on my birthday. So it is reasonable to include these foods, you know, once in a while just so they don't become that 'forbidden fruit' – the food that you think, "Oh, I can't have it." It is better to incorporate them once in a while in a small amount than to avoid them altogether because you run the risk of someday deciding you want that food and maybe eating more of it than you would have if you'd allowed yourself to have a little bit in the first place.

RK: You mentioned sugar-sweetened beverages, and this is kind of a catch-all term that we hear a lot about: reduce the sugar sweetened beverages. Could you talk about what those are? And is there a role for artificially sweetened beverages such as those with aspartame or other artificial sweeteners? Can those be ingested by people with diabetes?

MS: So most of the artificial sweeteners that are on the market these days have been proven safe by the FDA. The amounts that you would have to have of things like aspartame or saccharin in order to worry about health consequences is just an amount that a human being could never consume. It's a very large amount that you would have to do all day every day to really have to worry about any negative health side effects. Most foods and beverages sweetened with artificial sweeteners don't tend to have as big of an effect on blood sugar, and there aren't as many negative health consequences either. As far as if you wanted something different than water, I definitely steer people towards a sugar alternative before I would steer them towards a regular sugar-sweetened beverage. That being said, you know, concentrated sweets, things like a soda or juice or something like that... Again, even if a patient doesn't have diabetes, I usually steer people away from them unless you're treating a low blood sugar. Certainly, it's not going to really harm you if you do it once in a while. It's just there's healthier choices out there.

RK: Well, that's great to know that there's options for something more than water if you want it and to be able to have it every now and then. What are some other beverages – healthier beverages – that you recommend?

MS: Several different options. I really like to make my own iced tea and then maybe sweeten that with a sugar substitute if you like sweeter tea. I do enjoy some of the diet options that are on the market these days. If you really had a hankering for like a soda, a lot of flavors that they do these days tastes a lot like regular because they're sweetened with Splenda, as opposed to being sweetened with aspartame, which you might notice more of an artificial flavor. I do like to do diet juices and those are available. Cranberry especially is available in diet because natural cranberry juice really doesn't have many carbs in it if it's raw. So when they add a sugar substitute to that juice, it can still be five grams of carbs or less for a full eight ounce glass. Beverages that are sweetened with either sucralose which is going to be Splenda or monk fruit extract has become a really popular sweetener for a lot of beverages, too. So just make sure that when you're looking at a nutrition facts label, you don't see a lot of sugar listed.

RK: And how about other natural sweeteners such as Stevia? That's one that we hear a lot about.

MS: Stevia is pretty popular. The one thing I do warn people about with sugar substitutes is if you're using them for baking. You have to be aware that they are a chemical and so when you heat them up, they do change. And so some sugar substitutes can't be used for baking. But they could be used for something like if you wanted to sweeten your tea or put it on top of your oatmeal or something in the morning.

RK: What happens to those natural sugars when you bake them?

MS: They tend to become less sweet. It can change the way that they taste. One thing that happened when sucralose first came out onto the market is people said you could use it in equal amounts like you would sugar. So, a lot of people were making cakes and cookies and things using the same amount of sucralose as you would with sugar and when you taste it, most sugar sweeteners or artificial sweeteners are a lot sweeter than sugar. When you eat them just plain, let's say you're using them in an iced tea or something, you probably want to use less than you would use regular sugar...so maybe a sprinkle of the substitute versus a spoonful of sugar. And when it comes to actually baking with them, it changes the actual structure of the sweetener so it may just taste different when you actually bake it. It might taste less sweet, or it could have a strange aftertaste.

RK: That's so interesting and such a good tip to know about too. What about this concept of glycemic index? Could you describe what that is? And is it something that people with diabetes should be aware of?

MS: So the glycemic index in its actual form is a big book full of different foods, and then a number that goes along with that food. And all foods in the glycemic index are going to be compared either to a teaspoon of sugar or a slice of white bread. And what this index is looking at is how quickly a food will make your blood sugar rise. The kind of standard is that slice of white bread or teaspoon of sugar because the effect of eating the bread versus the sugar is just about the same on your blood sugars. Higher-ranking numbers in the index tend to make your blood sugar go up very quickly. A good example is like breakfast cereal; it tends to be one of those foods that makes people's blood sugar spike a whole lot. Versus lower index foods don't make your blood sugars rise very much at all, so a good example of that is cooked chicken breast or raw broccoli. And as far as how you can apply that to a day-to-day meal plan, it can become very difficult because we don't eat single foods very often. I don't sit down and eat a slice of bread. Usually, I'm taking that bread and making it into a sandwich or I'm toasting it and putting peanut butter on it. I'm doing something with that bread. And when you are adding in other foods either at a meal or a snack, it's going to change how that food affects your blood sugar. So, it can be a helpful thing to just be aware of if you tend to eat a lot of foods that are higher on the glycemic index. Like if someone ate a bowl of sugary breakfast cereal every day, with the glycemic index you can look at maybe lower-ranking cereals where you could swap out that really sugary breakfast cereal for something higher in fiber that won't raise your blood sugar as much. So it can be helpful for making day-to-day choices about what foods I eat just to choose lower glycemic index more often. But as a practical way to actually look at those numbers and,

you know, carry that book around, it's just not a practical way to apply the ideas to how you eat into your meal planning.

RK: It's more of a concept, isn't it, than something practical that can be used but may help in deciding between different cereals like you mentioned, or different foods to swap out or swap in. What about the importance of portion size for people with diabetes? Can you talk a little bit about that?

MS: Portion size specifically for carbohydrates is very important because a food that's very healthy, for example, like blueberries are very nutritious – rich in antioxidants, lower on the glycemic index. But if I go from eating a serving of blueberries to eating two or three servings of blueberries, it's a lot more carbohydrates. So even though the food is healthy, if you're eating too much of it, even a really healthy food can become less healthy.

RK: So it sounds like diversity in the diet is very important in addition to the portion size, is that right?

MS: For sure. And you know this applies to things like fat, as well. People who have diabetes are at higher risk for heart disease. So you don't want to be eating large portions of things that are high in saturated fat and you want to make sure you limit the amount of saturated fat you have over the course of the day.

RK: One of the questions that often comes up when we're talking about fats is, for instance, butter versus margarine? What do you usually say to that?

MS: Margarines these days are a lot different than they used to be when they first came out on the market. It was an issue when they first came out because of a kind of fat that we no longer use in manufacturing called trans fats. And these fats are fake fats that we've manufactured. And original margarine was in a stick, you may still see it in the grocery store. If it's in a stick form, you really want to avoid stick margarine. It is high in trans fats, so is shortening sometimes depending on what brands you buy. You know, these days when you go to the grocery store and look at the butter alternatives that are out there, there are some fairly nutritious options that might contain an olive oil or canola oil in there in addition to whatever the manufactured margarine is. However, I've always been someone who believes in a little bit of the real deal – natural options versus a whole bunch of fake stuff. So I'm somebody who would rather either use regular butter and just don't use very much of it. Another trick that I like for making butter more spreadable right out of the fridge and increasing good fat, is you take a stick of softened butter and you add a couple tablespoons of olive oil or you can use canola oil or something a little bit more neutral flavored and whip it together. Then you've increased the good fats, you've decreased the bad fats a little bit because your portion is going to contain a little bit of those healthy fats, not just the regular butter. It also makes it spreadable right out of the fridge which is kind of helpful.

RK: Wow, I'll have to try that at home. That's such a great, great option to have butter and also to make it healthier at the same time. Thanks for sharing that. You mentioned fiber as well. And I wonder if we could now talk a little bit about the role of fiber in the diet particularly

for someone with diabetes. What amount of fiber do you usually recommend and what are some examples of foods that are high in fiber?

MS: So fiber is important because it's part of carbohydrate. Whenever you look on a nutrition facts label, underneath carbohydrate, you might see fiber listed. It's part of what makes up your carbohydrate. But it's the part of that carbohydrate our body doesn't use. I explain it to my patients like it's almost like the apple core of your carbs, it's the part that you kind of toss away or don't eat. So it's the part that the body doesn't really use. We think about cows and sheep... how they eat grass, or hay or things like that all day long, and they get energy out of it. Our bodies aren't designed that way. We don't really use fiber for energy. We can't break it down very well. So when a food is higher in fiber, what that means is the carbs in that food might not affect your blood sugars quite the same way as food that's low in fiber. So a good example is a slice of whole wheat bread that maybe has more fiber, and a slice of white bread. Your body is going to get more fiber out of the wheat bread. And what that means is that wheat bread might not make your sugars go up quite the same way that a slice of white bread does.

RK: So, in general with foods that contain fiber, do you usually recommend that people with diabetes look at the fiber content and try and favor foods with high fiber? Or just have a healthy amount in their diet?

MS: I do usually recommend that my patients when shopping that they do some comparisons. So a good example, like I mentioned earlier, is cereal. If you've got one cereal that's got three or four grams of fiber per serving, and you've got one that has a gram or less, try to pick the higher fiber options more often. Another thing you can do is to mix those two things. So a good example is like brown rice and white rice. If you really don't like plain brown rice, try cooking some brown rice and some white rice and then mixing the two together so you still get that fiber. The idea is that we're trying to choose foods that aren't going to make your blood sugars jump up or spike quite as much as foods that are lower in that fiber. It makes them slower to digest. And the slower the food digests, the less it's going to make your blood sugars rise really quickly.

RK: One of the things that I wondered if you could also talk about was for vegetarian diets or vegan diets. Can you have those kinds of diets with diabetes? And does it make it more challenging? Or are there a lot of good options out there?

MS: You certainly can have an either a vegan diet or a vegetarian diet when you have diabetes. I do like to talk a little more with my patients about what does vegetarianism look like to you because a lot of people would still eat things like dairy and eggs, which means ovo-lacto vegetarian, that's eggs and dairy. Some people will also include fish, which is something that might be called pescatarian, where you're still willing to eat some fish or some other proteins that are not vegetarian.

Where we run into a little more difficulty – I wouldn't say it's impossible – is when people follow a strict vegetarian or strict vegan diet. A vegan diet means you're not eating any animal products at all and all of your nutrition is coming from plant-based products. It can be challenging with diabetes because a lot of your protein sources, when you don't eat a vegan diet, is going to be

things like eggs, and cheese and meat and those things don't usually have carbohydrate. When you do a vegan diet or follow a vegan or plant-based diet, a lot of your protein sources are also carbohydrates. So good example is things like beans, lentils, and peas. [These] tend to be a good source of protein for a lot of people who follow a plant-based diet and those things do contain carbs. But it's also important to remember there's vegan sources of protein that don't contain carbs, or very little carbs, so things like nuts, seeds, and then also plant-based proteins like tofu.

RK: It sounds like it's important to talk to a dietitian or nutritionist about your specific dietary needs and make sure that when you have diabetes you're getting all the protein and carbohydrate sources that you need.

MS: For sure. And nutrition is highly individualized and that's another good reason to speak with the dietician to find out what's going to work for you because what works for one person might not work for everybody.

RK: Is there such thing as a "diabetic diet"? Is it a one-size-fits-all?

MS: I wish I had a nickel for every time that people have asked me for a diet for their diabetes. I wish it was that simple. Because like I said, one thing might not work for everybody. I do like to meet with people one-on-one because this is something that hopefully [the] life changes that you're making are things you're going to stick with for the long run. And so I don't want to say that there's one thing that's going to work for everyone. A good example is, you know, I love brussel sprouts but my patients might hate them. So if this diet had a whole bunch of foods that you don't like, it's not gonna be practical for you. So nutrition, just like you know, the foods we like and don't like... it's very, very individualized. So I'm sorry to say no, there is not one diet for diabetes.

RK: So again, underscoring the importance of meeting with a dietitian and talking about your diet and your individual needs, like you said. Could you talk a little bit about the Plate Method that the American Diabetes Association (ADA) and the Center for Disease Control (CDC) talk about? And is that something you usually recommend? What is the Plate Method?

MS: The Plate Method... There's a little bit of confusion these days about the Plate Method versus MyPlate. And they are set up a little bit differently. MyPlate is what most people are familiar with I think these days on the USDA website. The problem with MyPlate is when you look at the picture, it does include more fruit on the plate which can mean more carbs versus the Plate Method. If you imagine that you have a regular nine-inch dinner plate and you cut it down the middle, the emphasis on MyPlate is half of that plate is filled up with vegetables that are non-starchy... So something like salad or broccoli or Brussels sprouts or something like that. The other half of the plate is cut in half again – so quarters – and you get a protein on one quarter of the plate and a starch. In addition to that plate, you could do a fruit or a dairy choice, or both. The reason that I kind of liked the Plate Method versus MyPlate is that it does emphasize those not-starchy vegetables that are rich in things like vitamins and fiber, but not in carbs that will spike your blood sugars. It's also a helpful visual way to try to get all of your "food groups," like we used to focus on getting your protein and getting your starches and things like that. It's a

good visual to remember when you're sitting in front of your plate, how you can set it up to get a good balance of all the different nutrients.

RK: It seems like it could be an option for people, right, with diabetes who are looking to have kind of an easy rule of thumb of how much of each type of food to have on their plate. And I know that the American Diabetes Association and the CDC both have further details about that on their websites. That's great to hear that it's been something that's been a tool that you've been seeing work successfully for your patients, as well.

MS: Also [MyPlate] helps a lot with portion sizes because when you look at it on the plate, you're looking at filling up half of that plate with those vegetables, and then limiting your portion of starch and protein to just those two corners of the plate. It's also helpful because you're not having to use measuring cups or scales or things like that. It's a way to be able to portion out your food in a visual way.

RK: That's really helpful. And I think the visual makes it even easier in some ways to think about how to portion things out. Do you have a rule of thumb that you'd like to tell patients about what a one cup portion size would be or a tablespoon or a teaspoon that you could share?

MS: Yes. So when it comes to portion control, or measuring portion size, estimating portion sizes, at home I tell people to practice with measuring cups just to get your eyes trained and be able to see what the portion would look like on your plate. But that's not really practical if you're going out to a restaurant or to a friend's house or something like that, where you don't want to bust out the measuring cups out of your purse or something. So you can use some visual portion guides as far as just a rough estimate of how much this food is on my plate. The general size of a woman's fist – and I say women because men tend to have slightly bigger hands – but about the size of a woman's fist if you stop at the wrist is a cup. If you think about the size of a golf ball, that'd be two tablespoons is the size of a golf ball if you think about something like peanut butter. And then the size of a teaspoon is roughly your finger if you stop at the first knuckle... so your thumb if you stop at the first knuckle. And there's a lot of visual portion guides that are online these days. But if you're looking for specific ones or to talk about specific foods, of course talk with your registered dietitian.

RK: Thanks for those rules of thumb. That's definitely much more practical than, as you said, carrying your measuring cup with you in your purse when you're out to eat. Speaking of eating out, do most restaurants that you've encountered have diabetes-friendly options? Or what do you usually recommend to your patients with diabetes if they are eating at a restaurant to ensure that they're still maintaining their healthy diet?

MS: Well, so when you dine out, a lot of restaurants have gotten better about having healthier choices on the menu. Even fast foods tend to have at least a few healthier alternatives on the menu. Generally speaking, there's a few different not rules, but I like to think of them as guidelines. As you can, try to avoid super fried foods or deep-fried foods, as well as foods that have a lot of cream in them or butter. French food tends to be very heavy on cream and butter. For things like an Alfredo, maybe go for something that sautéed or roasted. Try to avoid,

like I said deep fried things. Look for things that are baked or skinless that are not going to contain all that extra saturated fat that can be found in deep fried foods.

MS: One thing I think that's very difficult at restaurants, not just as far as the kinds of foods that they serve, is the portion sizes. A lot of restaurants that I've been to recently put enough food on your plate for two meals. So a couple of just tips that I give to a lot of people is choose what you want, but maybe think about splitting your meal with somebody and then getting a salad. So making your salad a little bit more of the focus of meal and then sharing whatever entree you want. If you're going to do an appetizer, again, try to share it with people. Don't do your own appetizer and your own entree. One of my favorite tips and tricks for dining out when I sit down to a restaurant if I know that their portions are big, I'll ask them, "Hey, when you bring my entree, could you bring me a box?" So that way, I can go ahead and portioned out half of that meal into the box and have it for tomorrow and then I can enjoy what's left on my plate. And then of course, if you're going to indulge and enjoy a dessert, try to split it with somebody.

RK: Well, Maureen, thank you so much for being here today and giving us a general overview of guiding principles for following a healthy diet and diabetes. It really sounds like there is no one-size-fits-all but meeting with a registered dietitian and talking about your individual needs really seems to be the way to ensure a healthy eating plan going forward. Do you have any last words or a summary that you'd like to share with our listeners?

MS: I know from in the past when I've met with patients before, there is kind of a misconception about dietitians. I think people are afraid that we're the food police and I think one thing to know is that a lot of the dietitians that I know anyway, are all foodies. We love food. And it's part of how we got into the field to help people eat healthier. And if there's specific things or questions you have for your dietitian about a specific food or things that you really enjoy, just remember that that's our job and the reason we're here is to help you, to find out how to help you be healthy for the long run, and to eat everything in moderation... including my phrase that I always use with my patients is, "Everything in moderation including moderation", meaning if it is your birthday, enjoy that piece of cake and don't feel guilty about it. Food and guilt is never something I think that should go hand in hand.

RK: I fully agree. Having a registered dietician such as yourself as part of the care team, we truly value that partnership and it's so important. We're all striving for the same goal, which is healthy life with diabetes. And thank you so much for being here today and sharing your expertise. We really, really appreciate it.

MS: No problem at all. Thanks for having me.

RK: I'm Dr. Rita Kalyani, and you've been listening to *Diabetes Deconstructed*, a companion podcast to the *Johns Hopkins Patient Guide to Diabetes* website which has all kinds of useful information about diabetes, including videos and animations a lifestyle and nutrition blog and a comprehensive diabetes glossary. For more information visit hopkinsdiabetesinfo.org.

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