**Scott Webb (Host):** November is National Diabetes Month, and it seems like a great time to discuss diabetes, the signs and symptoms, and treatment options with my guest today, Dr. Makarem Abu Limon. She's an endocrinology, diabetes, and metabolism specialist with Memorial Health System.

Welcome to Memorial Health Radio with Memorial Health System Ohio. I'm Scott Webb. Doctor, thanks so much for joining me today. We're going to talk about diabetes and the services that you offer there and how you can help folks. Just as a little bit of a foundation here, I don't want to assume that everybody knows, tell us about the different types of diabetes.

**Dr. Makarem Abu Limon:** The most common two types of diabetes are type 1 and type 2. And usually, we try to distinguish between those two diagnoses to know how to treat those people. So with type 1 diabetes, it's more common in younger patients. We're looking at an age of 25 and younger. While in type 2, they're typically older than 25 years of age.

Now, ideally, in type 1, the most common underlying cause is an autoimmune attack of the pancreas versus the type 2 diabetes, there is no autoimmune attack to the pancreas, and hence, of course, the treatment will be different. Now, in theory, patients with type 1 diabetes are thin, while patients with type 2 are more on the overweight spectrum. But then, because now obesity is a pandemic, that kind of differentiation does not really exist in clinical practice.

Now when it comes to type 1 and type 2 diabetes, type 2 is more seen in families because there's a genetic predisposition to that diagnosis versus type 1, we're talking roughly about 5 to 10% genetic predisposition. Now, the most important thing also that we really need to clinically distinguish is type 1 diabetics are more prone to a condition called diabetic ketoacidosis, which basically means that the patient have a lot of acid in their blood and they will need to be in the hospital for insulin and IV fluid for survival versus type 2 diabetes, we really don't see that condition in those people.

**Host:** I appreciate that and it does seem that diabetes type 1 and type 2 kind of gets lumped together, but they manifest very differently in people's bodies. And just wondering where does prediabetes fall into this?

**Dr. Makarem Abu Limon:** So, prediabetes is basically based on an A1c or a lab diagnosis. And we look at the A1c specifically, because it's more specific when it comes to diagnosis of prediabetes and diabetes in practice. So if anyone has an A1c between 5.7 and 6.4, we label them as a prediabetes. Now, it's likely to be seen in type 2 diabetes than type 1, because type 1 patients are mostly like a sudden onset of illness that predisposes them to be in the hospital. And the most common presentation for them is a DKA presentation, because they didn't know that they have a diabetes problem. And we don't see the prediabetes range in those patients. While in type 2 diabetes, it's more of a routine test. And we inform them that, "You guys, you have that prediabetes lab. Be sure to do some lifestyle modification to prevent the progress or the fast progress, I'll say, to the diabetes criteria and range."

**Host:** Yeah, I see what you mean, that if you're diagnosed with prediabetes, you can keep it right there at prediabetes. It doesn't necessarily have to end up being type 2. But as you say, lifestyle, behavior changes, diet, exercise, all those things. And you mentioned illness with type 1. I wanted to ask you, what are the signs and symptoms that a person might be experiencing that should really prompt them to speak with a provider?

**Dr. Makarem Abu Limon:** Most of the time, for the type 1 diabetes, the illness will be an acute presentation of nausea and vomiting and not feeling well, some abdominal pain. And it prompts them to go to the emergency room. And then on a lab, they will have the diagnosis of DKA, the diabetic ketoacidosis.

Now, for the type 2 diabetes, as I mentioned, it's likely a presentation of a prediabetes on the labs, but then some people feel that they are thirsty or go to the bathroom, urinate more than often, some weight loss, and of course fatigue. And if they didn't have a regular lab that was done, when they go to the primary care physician or even to the emergency room, the A1c or just a glucose test will confirm the diagnosis of diabetes.

**Host:** Yeah. And it does sound like labs are key and probably the gold standard, but just take us through that. How is diabetes diagnosed?

**Dr. Makarem Abu Limon:** If we're going to do it by criteria, we need to two different labs to confirm the upper limit of those labs that confirms the diagnosis of the diabetes. So, we can do an A1c level with a level of 6.5 and above. That is a diagnosis of diabetes. We can do a fasting glucose reading, which really means the patient shouldn't have anything that have any calorie in it for at least eight hours. And if the level is above 126, that is diagnostic of diabetes.

We can also just do a random glucose reading. And if the patient basically has some form of hyperglycemia symptoms that I mentioned before, like thirsty and weight loss and stuff like that, along with a random glucose reading of 200 and above, that's also diagnostic of diabetes.

The most sensitive and specific test for diabetes is something called a 75-gram oral glucose tolerance test where patients have to drink 75 grams of carbs. And we check their glucose at zero time, one hour and two hours after the test. And if their glucose is above 200, then that's also a diagnostic of diabetes. But then, we don't do it that often because it's nasty to have the test. And it's time consuming when we have some other options where they just go and go to the lab and get it done.

**Host:** Right. Yeah. Time-consuming for sure. So, tell us about diabetes care at Memorial Health System. Give us an overview of the treatment options.

**Dr. Makarem Abu Limon:** Our diabetic patients, we see them in two different situations. Either like a regular outpatient clinic visit, mostly referred from their primary care physicians or as an inpatient initial encounter. For the inpatient initial encounter, either if we already knew them or they're just new to the system or they have a newly diagnosed diabetes that prompt them to be admitted for care, our inpatient diabetes educators will be on board to educate the patients about the diabetes and discuss the initial treatment with them and what to expect. And of course, a followup appointment should be scheduled roughly between one to two weeks after their discharge.

Now as an outpatient clinic visit, patients are more stable. And of course, once we take the history from them, we'll definitely be discussing what's the best initial treatment for them. Because with diabetes, it's individualized based on the initial labs, the symptoms, and the patient's expectations and how do they want to proceed with the diagnosis and the treatment of their diabetes, because patients sometimes believe that they can monitor and adjust with just only lifestyle modification, but that definitely takes time from them.

We offer them diabetes education along the line and nutritionist visits. And of course, as a part of our services, initially, we talk to them about the treatment plan. And eventually, if They need some assistance with the technologies that we use for diabetes diagnosis or glucose monitoring at home and treatment, we can definitely be talking about the insulin pump management, and that's of course offered as a free service for our patients. And we have also free diabetes support groups.

**Host:** It sounds really comprehensive and definitely not one-size-fits-all when it comes to diabetes, as you say. And with November being National Diabetes Month, I'm just wondering here as we wrap up, what are your key takeaways about living with diabetes and how you can help folks?

**Dr. Makarem Abu Limon:** Oh, I always tell them diabetes is your new life partner. When you're diagnosed with diabetes, it's nothing reversible. Some patients succeed with having a well-controlled diabetes regardless of how they do it. I have some patients who have well-controlled diabetes just with lifestyle modification. And I have patients who are really well-controlled, but then they have insulin on board and some oral medications that they're using. So as long as you know that diabetes is a lifelong commitment and it will take some time to adjust, but then it will guide you to a healthier lifestyle. Weight loss, healthier food, medication compliance, definitely will help to keep your A1c below 7 with no risk of hypoglycemia, that's our target when we treat diabetes.

And of course, social support is always important. And I have a lot of patients who love their wives cooking stuff, but then we have talk to the wife, please be easy. Probably, eventually, the partners will adjust and both of them, regardless who have the diabetes, will continue or will adjust to a healthier lifestyle and a low carb diet just to help the other partner to get their diabetes under control.

**Host:** Yeah. As you say, it's about living with diabetes. It's the beginning of a journey, not the end, of course. And it's about management and behavior and lifestyle and medications and families being on board. So, it really is a team effort, both from the patient and their families and your team there. Thank you so much for your time. You stay well.

**Dr. Makarem Abu Limon:** Yeah, sure. Thank you for having me.

**Host:** And to find out more or connect with one of our providers, go to mhssystem. org. And if you found this podcast helpful, please share it on your social channels. And remember to subscribe, rate, and review this podcast. And check out the entire Memorial Health System podcast library for additional topics of interest. Thanks for listening. I'm Scott Webb. And that wraps up this episode of Memorial Health Radio with Memorial Health System Ohio.