**Joey Wahler (Host):** They can help lower a diabetic's blood sugar level. So, we're discussing proper nutrition and recommended supplements. Our guest, Dr. Nicholas Mezitis. He's an endocrinologist with Memorial Health System.

 This is Memorial Health Radio from Memorial Health System. Thanks for listening. I'm Joey Wahler. Hi there, Dr. Mezitis. Thanks for joining us.

**Dr Nicholas Mezitis:** Hello, Joey. Thank you.

**Host:** Great to have you aboard. So first, generally speaking, we'll get into details in a moment, of course, how much can diabetic patients help their condition typically with the right nutrition and the proper supplements?

**Dr Nicholas Mezitis:** The foundation for diabetes management is actually lifestyle. That's accepted also by the professional societies. And the foundation of lifestyle, obviously, is our diet. And the diet includes, of course, what we do with our day and how we manage our day and our time, but more importantly, what we eat. So, those two factors come together. What we eat, the quality of what we eat, and, of course, the timing of these meals. And those are things that we emphasize when we meet our patients.

**Host:** And so, what you're saying is that much of what happens with a diabetic's condition is really under their own control.

**Dr Nicholas Mezitis:** Yes, I would say the majority of the intervention, the largest part of the intervention, is related to the diet and to the lifestyle. And of course, that applies to the great population of people with diabetes who have what we call diabetes mellitus type 2. There is a subset of individuals who don't make insulin for a variety of reasons, they make no insulin. And those people, of course, they are forced to use insulin. It's not so much that they've done something different about their lifestyle. But even that particular group that depends on insulin for life, they also benefit greatly when they employ certain modalities that relate to diet and exercise and sleep.

**Host:** Gotcha. So, let's get into this in some more detail, as mentioned. First, nutrition-wise, doc, what are some things diabetics should and shouldn't be eating?

**Dr Nicholas Mezitis:** We always emphasize the fact that sugars influence the blood sugar profile in a way that's undesirable and kind of destabilize the entire condition. So, that applies to the simple sugars, what we call refined carbohydrates, simple carbohydrates. And therefore, what we know as desserts and a lot of the various foods that are packaged with additives and with sugar and salt and so on and so forth that come in boxes and packages. A lot of those are a problem for us, so what we call refined carbohydrates. Of course, carbohydrates are also the vegetables, and those are what we call the complex carbohydrates. Those are definitely a foundation in our diet, and we have no problems with that. It's just the processing that creates an issue. So, carbohydrates then that are complex carbohydrates, that have fiber and come in the form of vegetables and some fruits, are very much important in the diet.

And then on that, we bring in protein, which is very important as building blocks for the body. And we also add fat, which is important as a lubricant and a facilitator substrate for a lot of our hormones, and it all comes together. But again, the quality and the type of each one of these ingredients is important because, as you know, there are fats that can be damaging to the body, these trans fats and others. There's also an excess of protein that can also be damaging. So, these are things that we talk about and emphasize.

**Host:** So, for instance, and you touched on it briefly there, when it comes to sugar, fruit would be preferred over candy.

**Dr Nicholas Mezitis:** Of course, that's nature's dessert, if you will. But even with fruit, it's how you've positioned it. I mean, fresh fruit obviously is much better. There is fruit that comes canned, and of course it's in syrups with sugar added, and so on. That's not exactly what we have in mind. So, we're thinking about fresh fruit, which is also seasonal, very important. Now, we're bringing in a certain harmony into our lifestyle.

**Host:** Gotcha. So, we know that often with diabetes comes being overweight, often being obese. So, how important is not just what diabetics eat, but how much, portion control?

**Dr Nicholas Mezitis:** Well, that's very key. But generally, if you're eating the foods in their natural form in a balanced way, as we put it on the plate, so to speak, you generally can't go way overboard with calories. The problems arise when you're bringing in calories in liquid form. In other words, these various "soft drinks", energy drinks, or whatever you want to call them. You can bring in a lot of calories that way. The same thing happens with alcohol. So, many of our patients, once they cut back on their consumption of all of these beverages other than water, they immediately see the results on losing weight.

And then, of course, a lot of the foods that are comfort foods, which are loaded with various types of fats and so on, they're also energy-dense, and they contribute to the weight problem. So, that's where I think a lot of these issues that relate to obesity lie. And that's where we try to kind of guide people. We're not out to exclude anything in particular. We don't have a beef with any particular food item, we're just talking quality and planning so that there is everything in good measure.

**Host:** Moderation, right?

**Dr Nicholas Mezitis:** Correct.

**Host:** So, you mentioned beverages. Speaking of which, doctor, how about the importance of diabetics like just about anyone else, but particularly in the case of diabetics, the importance of staying properly hydrated?

**Dr Nicholas Mezitis:** Very, very important. Absolutely right. I mean, we need a certain amount of fluid. Generally, a couple liters of water, or anything which is close to the water. It could be water flavored, let's say, with some fruit, like you do in these infusers or it could be a tea, an herbal tea. But we generally need that because, remember, the majority of our body is water. It's the largest proportion, so to speak. So, we do need that as our sustenance. And then, again, we're very careful about these other beverages, because they don't necessarily add value. Some of them are even labeled as diet this and diet that. But there, again, you run into problems because of additives and also sugar substitutes that generally don't relate to anything that the body can use. So basically, it's just purely a taste issue, which is interesting for brief moments, but it really does damage in the long run.

**Host:** Understood. So, switching gears to supplements. First, simply put, how would you describe how they actually impact a diabetic system?

**Dr Nicholas Mezitis:** Well, looking at supplements, we have a whole variety because there are nutrients, obviously, the various types of nutrients and substances, which we view now as pharmaconutrients. In other words, they have pharmaceutical value, they're medications. Your food is your medicine. And in the case of the person with diabetes, they're also missing certain vital ingredients. In other words, their vitamin C consumption is actually a little bit higher than the average person because there's tissue damage, they need to restore tissue and the healing process many times is delayed. So, they need more vitamin C than what they would normally get through their diet if they have a good diet. Vitamin D, it's the same thing. We're in a latitude here in Ohio where the sun doesn't really have the opportunity to interact with the skin and help us produce vitamin D in adequate quantities on our own.

And the same thing applies for other things like chromium and certain other vitamins, the B vitamins, and so on. So, there's a need to supplement the diet with certain ingredients. Of course, it's done under supervision so that there's good planning. Otherwise, you end up with large amounts supplements that probably just burden the budget without giving the value. So in that sense, even though people are under the misunderstanding that really don't need vitamins, it's all coming through your diet, no, you do. And especially for someone with diabetes, you do need to supplement the diet. There is benefit to doing that if it's done properly.

**Host:** And so, having said that, which diabetic supplements would you say, from your experience, are most effective for diabetic patients?

**Dr Nicholas Mezitis:** That's an excellent question because, as mentioned, even though we start with our discussion of the balanced meal and the various types of foods that we prefer and suggest, I always add vitamin D because almost everyone in our particular area is deficient in vitamin D, because of the lack of sunlight and everything else that we discussed. So, vitamin D is very important. It's an anti-inflammatory substance, and diabetes is a condition with inflammation in the body in all sorts of areas, so we need to fight that. And this is like your fire extinguisher. It has a very, very important role, aside from the fact that it functions as a hormone, and it also feeds into the microbes in the gut and benefits them. So, that's key, and that would be one of the important vitamins.

The second is vitamin B, the B complex, because most people with diabetes, suffer when it comes to their nerves and their blood vessels. There's damage done to those areas, the blood sugar levels and the blood sugar, various substances that are produced when we have high blood sugar circulating damage, burn, the lining of blood vessels, and also damage the insulation on nerves. And we're seeking to preserve, to protect both the lining of the blood vessels and the insulation of nerves. And so therefore, vitamin B12 and vitamin B complex, they have a very important role in protecting the nerves.

Then, speaking of the blood vessels, we add omega-3. Omega-3 fatty acids, again, have anti inflammatory effects. They also soak up a lot of the damaging substances that are released in the circulation when your sugar is out of line. And they benefit also blood pressure, and they also prevent coagulation of the blood inappropriately and so on. So, they are important in that role, and they lower cholesterol levels and triglyceride levels, more importantly. So, they restore our fat profile in the blood in a beneficial direction. Coenzyme Q10, it's another additive which works well with the omega-3 fatty acids to achieve those goals. So, that's a group right there that are frontline in the supplements.

**Host:** Yeah. It sounds like that group would certainly be a great start. So finally, doctor, in summary here, when a patient comes to see you and your colleagues, how is their particular best nutrition and supplement plan formed?

**Dr Nicholas Mezitis:** What we do, of course, is we start with a history because the history is very important where we get information about the particular circumstances that relate to the individual patient because all of this is customized. There are certain general guidelines. But again, we customize, because there are special needs that apply to each situation depending on how many years they've had the diabetes, the complications with the diabetes, other things they may be doing or have done that also complicates their particular situation, other medications that they're taking, so we need to be cautious.

For example, we mentioned that omega-3 has an effect also on blood clotting. But if someone is taking aspirin, for example, or Eliquis, or some of these other medications that people get from cardiologists because they have a stent or something, we have to be cautious because we may be now making the blood even thinner and make them more prone to bleeding. So again, we would caution it there. The amount of vitamin D, you can't give too much because that may become toxic at a certain level. So, that's done under some supervision with monitoring. And again, other substances too that we have in mind, people that are taking metformin, for example, very popular drug for diabetes, they have special needs with vitamin B, because metformin seems to deplete vitamin B stores in a particular way. So, it's important to make sure that they specifically get their supplements in place.

So, those types of, thoughts are there. And then, obviously, no matter what we do, there's monitoring that's ongoing so that we make sure that we adapt to the changing needs and also don't overdo it in a particular direction.

**Host:** Well, folks, we trust you're now more familiar with diabetic nutrition and supplements. A very thorough rundown there. Dr. Nicholas Mezitis, thanks so much again.

**Dr Nicholas Mezitis:** Thank you, Joey. It was good to be with you and with our audience.

**Host:** Same here. And for more information or to connect with one of their providers, please do visit mhsystem.org. Again, that's mhsystem.org. Please remember to subscribe to, rate, and review this podcast and all the other Memorial Health System podcasts. If you found this podcast helpful, please share it on your social media. I'm Joey Wahler, and thanks again for listening to Memorial Health Radio from Memorial Health System.