EPISODE 33: A REAL PATIENT STORY – GESTATIONAL DIABETES

Dr. 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.

For today's podcast, it is my pleasure to introduce a person who has had gestational diabetes, Shweta, who will be sharing her journey with gestational diabetes during her pregnancy and follow-up afterwards. Along with Shweta, we are pleased to welcome Dr. Wendy Bennett, an associate professor in the division of General Internal Medicine with joint appointments of the Johns Hopkins University Bloomberg School of Public Health Departments of Population, Family and Reproductive Health in epidemiology. Dr. Bennett's research focuses on obesity prevention and control. She's interested in behavioral interventions to promote healthy weight gain in pregnancy and postpartum weight loss. She also has expertise and technological interventions for nutritional assessment and intervention delivery. She was a general internist and sees patients at Johns Hopkins Bayview Medical Center.

We are also pleased to welcome Christine McKinney, senior nutritionist of the Johns Hopkins University School of Medicine. Christine is a registered dietitian and certified diabetes care and education specialist. She is working in research focused on weight management and perinatal health. She previously worked at Johns Hopkins Bayview Medical Center's OB clinic specializing in gestational diabetes. Welcome, Shweta, Dr. Bennett, and Christine.

Dr. Wendy Bennett, MD: Thank you so much Dr. Kalyani. We are excited to join you for this really important podcast. And I really want to thank Shweta, who has now been my patient at Bayview, I am her primary care doctor, for seven years. And we first met when you were pregnant. You came to me when you were about 29 weeks pregnant and actually, because I'm a primary care doctor, I very rarely see patients pregnant. [laughter] They usually come to me, before getting pregnant or after pregnancy, but you had actually just been diagnosed with gestational diabetes. And you were very proactive and wanted to really engage in primary care**,** to start to think about what was going on during your pregnancy, but also be able to think about what life would be [like] for you after delivery. And my memory is that you had a very healthy baby girl, and that she is now seven, is that correct?

Shweta, patient who had gestational diabetes: That's right, she's seven. So, it was a very exciting time.

WB: Thinking back when you and I first met and even before that, because you had been diagnosed with gestational diabetes before we met, maybe you can tell us a little bit about you, before getting pregnant, your family history, and what things were like for you before getting pregnant.

Shweta: I'm from Southeast Asia, specifically from India and thinking back to before pregnancy, I mostly lived a very healthy life. And one of the primary reasons was I had a long family history of diabetes. And if I really think back, it's about two generations where most of my family members had diabetes. I was very aware of the challenges of living with diabetes and the consequences of living with diabetes. That was always on my mind. I think when I turned 30, I made a commitment to exercise and eat really healthy. In that regard, before pregnancy, I was very active: exercise five to six days a week, I lived a very active lifestyle, had a very healthy weight. Going into pregnancy, I would say I was pretty fit.

WB: And you have as very significant family history and then also your Southeast Asian descent. And we also know that being Southeast Asian puts you at high risk for gestational diabetes, as well as for Type 2 diabetes. So, you actually said to me that you weren't that surprised when you were told that you had gestational diabetes because you knew of all of your risk factors.

Shweta: Yeah, that was something that I think we all were aware [of] as a family. And in that regard, I think I have to thank generations of women who kept tabs on what to do and what not to do. And I was warned early on that when I decide to get pregnant, that is something that I have to look out for and something I had to think about. That was always on my mind. As I was planning to get pregnant because I did get pregnant in my 30s, so I made sure that I was as healthy as possible going in, because I wanted to push gestational diabetes as far as, if I was lucky, avoid it. But apparently lo and behold, that was not the case and I was diagnosed with gestational diabetes. I think in my third trimester, 29 weeks as you said, close to that. I tried my best, but I think at some point, you have to rely on healthcare to help you get through the remaining part of your pregnancy.

WB: Thinking back, can you share a little bit about what it was like to get tested in pregnancy? Do you remember the kind of tests that you had to do? I think for a lot of people, it's actually a pretty emotional diagnosis. Everybody wants to go through pregnancy with no complications. And so I think for some people, it is pretty emotional. I don't know if you felt that way. Or if you want to share kind of around that time, what that was all like for you.

Shweta: Oh, yeah, I remember the testing and the diagnosis very clearly, because the testing was the oral glucose test. I was eating extremely healthy, which involved a very limited sugar amount, which was 45 grams. That oral glucose test had 100 grams of sugar. I remember my challenges of drinking it and trying to keep it down and everyone asking different flavor that would help. Less sugar would help. [laughter] But that's not the point. They did test me across time. I think only in week 29, is around [the time], which I don't recall exactly when it was. The third trimester is when I tested positive for gestational diabetes. Whenever you're doing diet and exercise first and second trimester, you feel like okay, I have control over it. But then when you get diagnosed despite that, it is pretty disheartening. But I had a lot of support from family and the health care professionals around me. I was able to get over it and was provided with sufficient resources to manage and get through a healthy pregnancy, despite having gestational diabetes. I would quantify it as a healthy, comfortable pregnancy.

WB: And you mentioned having a lot of support from healthcare providers. So do you want to share with us a little bit about who you saw and what kind of education they provided you with?

Shweta: When I went in early on, I was very clear. When I went to visit my OB-GYN for the first time, and that was in the first trimester when I was getting my health care. I was very clear that I have this long family history of diabetes and I had certain concerns. So, some intervention began very early on in form of diet and exercise\. So I was recommended a nutritionist, and they were able to help me tweak my diet and exercise so that I can maintain my healthy habits throughout the pregnancy. Even after I got diagnosed, I think there was additional care they provided. One was glucose testing. They also provided Metformin that I took towards the last one and a half or two months of my pregnancy, but I was also sent to the high-risk clinic, which involved additional screening of the growth of fetus because they wanted to make sure that it was not too large. So, I received some excellent care and support throughout the three trimesters even before and during my gestational diabetes.

WB: I wanted to turn to Christine, as you heard in Christine's introduction, she has worked very closely in the high-risk clinic doing a lot of the counseling and education and really management for patients with gestational diabetes. Christine, do you want to share how you approach those visits in terms of talking to people with newly diagnosed gestational diabetes about diet and exercise? [And] a little bit maybe around the glucose testing?

Christine McKinney: Of course. When I work with a patient, I would start just by listening to them because I do want to learn what they already know about gestational diabetes. Sometimes people have already made lifestyle changes, any lifestyle changes that they've already made. And I do ask and I want to hear more details about current eating and exercise habits. For education, I would offer, especially at a first meeting, includes just learning which foods raise blood sugar and which foods don't. Foods that contain carbohydrates raise blood sugar because carbohydrates break down into glucose. Carbohydrates are in breads, cereals, beans, lentils, starchy vegetables, fruits, fruit juice, milk, yogurt, and of course sweets. Anything with added sugar and non-starchy vegetables have a very small amount of carbohydrates, but I do feel like it's also important to talk about foods that don't have carbohydrates or raise blood sugar: protein, meat, poultry, fish, eggs and also fats, olives, avocado oil, salad dressing, I find that that first visit is really about trying to find a balance with carbohydrates, protein, and fats for blood sugar control. I do talk a little bit about pairing carbohydrates, sometimes with protein and healthy fats, just to slow down the rise in glucose and also to help increase satiety. Instead of just eating an apple and maybe adding peanut butter or cheese to that. I think it's also sometimes an opportunity to dispel some myths that come along with gestational diabetes. I oftentimes hear people say I can't eat carbohydrates anymore because I have gestational diabetes and this isn't true. During pregnancy mom and baby need carbohydrates for energy and for growth. And important food groups would be missing when people are trying to avoid carbohydrates. Smaller meals are sometimes another topic because smaller meals during pregnancy can help with some pregnancy-related concerns like nausea and vomiting, which we know can happen early in pregnancy, but pregnancy hormones slow down digestion. And so sometimes people, especially later in pregnancy, they feel bloated or fuller, or they might be reporting that they’re experiencing some reflux. So smaller meals can help with some of those pregnancy related problems and also, with glucose control. For exercise recommendations, I always start with listening to where someone's at, and maybe trying to make small changes. The education that I guess I give around exercise is that it lowers blood sugar. Exercising after a meal can be really effective to help to lower that spike, that happens after eating with glucose. I do share overall recommendations from the American College of Obstetricians and Gynecologists for exercise that would be 20 to 30 minutes of moderate intensity exercise most days of the week.

RK: I wondered Christine and Shweta, the dietary changes are so important for management of gestational diabetes and Shweta you mentioned the strong family history you have and the South Asian background. And I wonder, what kind of diet you were following before? Were you following a traditional South Asian diet or more Western diet? And how those nutritional recommendations, Christine, as a dietitian are factored into your management? I wonder if you could talk a little bit about the kind of diet you were following before.

Shweta: I'm lucky enough to have very diverse family backgrounds: half East Mediterranean and half is Indian. What works for me, I figured out early on that I do love vegetables, lentils and beans in Indian cuisine. And I do limit in modern Mediterranean cuisine and family members just pulled me, with all the healthy family recipes. They shipped me handwritten recipe books from all over so I could pick and choose. What I figured out, the challenge of doing any kind of healthy diet is time**,** energy and of course, it is costly, but we could kind of find a way around it. I learned the beauty of freezing food, which is not very common in Southeast Asian families. We cook our meals fresh and so do most of the Mediterranean kind of families cook their meals fresh. I had to discover the beauty of frozen soups and stews. I had to think about what is feasible. And if I'm not able to cook and I just thaw it quickly. Some planning was required and this is where a nutritionist's advice and family support came into play. And even with exercise, I would say that [in the] first two trimesters, I continued to do what I used to do before my pregnancy. I was able to do most of the activities. But as the belly got bigger, for example, plank got harder because the belly got heavier. It's not bigger, but it was heavier to hold. I think I put on 30 pounds of weight and 30 additional pounds on my arms was like, I just want to give up, right. So in the third trimester, I had to rely a little bit more on my healthcare professionals to give me some advice on how to tweak that. Even for a person who has been active, we have to recognize that we can do fewer things as you hit closer to the D-day of having the baby. So throughout, I was able to stay active with a lot of support of people around me. There was some willpower, but there is definitely a need for a lot of support.

CM: You brought up two really good points about healthy eating**.** Meal planning**,** how important that is and freezing can definitely be part of that planning and prep too. And just in general, cooking at home**,** that's important**,** that makes a big difference.

WB: As you got closer to delivery, were your providers talking to you at all about birthing options, and whether those options might be different with having gestational diabetes? Whether they were considering a cesarean delivery versus a vaginal delivery and whether you had any discussion with them about that?

Shweta: As we got closer to the delivery, they did discuss some options. And one of the things we agreed upon and one of the concerns is, despite my best efforts, my sugar levels, I was able to manage it for the first month then closer about last two or three weeks, there was nothing I could do. I mean, they could up the dose, but it was so close to the due date. They did talk about inducing. So, there was an agreed-upon date, I was going to show up and they're going to induce labor. And what happened is on the day I showed up, I was already in labor, so it didn't work out as planned but they didn't have to do much. So, they also talked about potential C-section if in case the need arises. But then they did say that since the baby was within the healthy weight range, they said these other options. But when I showed up, it was in the healthy weight range, and it looked okay. So, in the end, I had a vaginal delivery, and they didn't have to intervene as much.

WB: And I think it's important some of the things that you highlighted, the challenge of these conversations and how closely your providers are really watching the baby's growth because if the baby is too big as a result of all the glucose and overnutrition it's getting and growing too big**.** It could put mom at risk during a vaginal delivery and to deliver a really big baby. Also, the thing that we talk a lot about is that the baby risks getting a little bit stuck, something called shoulder dystocia, where the shoulder itself is not coming out. Almost all of the studies that have looked at gestational diabetes and the rationale for: Why do we treat? Why do we try to bring people's blood sugars down? Are all because of the big baby risk or the shoulder dystocia risks. It's a hard thing to know. I think that and it'll be interesting to hear perspectives from an OB-GYN, but sometimes looking at all those ultrasounds are not the best measure of a big baby. There's some guesswork that happens on the timing of delivery, the safety of delivery, and making sure that the baby's not too big to deliver. Do you remember besides the diagnosis of gestational diabetes, are there any other kind of complications related to having gestational diabetes? Some people have high blood pressure, other things in pregnancy. Did you have any of that?

Shweta: Luckily, my prior lifestyle, I typically don't tend to eat a lot of sugar and I don't add salt, which is why there are not many takers of my food, at home. I did not have any hypertension. In fact, my blood pressure remained at extremely healthy levels. I would say looking back, and it just could be a guess on my part, is all the diet and exercise I did and took on to take care of diabetes helped me with other aspects. I didn't have swelling in [my] legs, I didn't have any other symptoms. And post-delivery, I also kind of had a good recovery and I would say I was back walking and running at 8-weeks.

WB: I think one of the reasons why you started engaging in primary care while you were still pregnant is really to start to think about preventing the development of diabetes, after you've had a pregnancy with gestational diabetes. Before we jump to thinking about your experience, and even our experience together, sort of managing that risk. I'm curious what your OB-GYN providers talk to you about? Were they talking to you about the risk of diabetes, about the need to get screening? And what kinds of screenings did they recommend after delivery, before you started coming back to see me?

Shweta: We had a lot of conversations during my pregnancy. And I recall that when I went for a follow-up visit, they again reminded me that I have a high risk of developing diabetes in the future and encouraged me to continue to keep tabs on my sugar level and make sure that I continue to do diet and exercise and provided additional resource. All the postpartum resources were provided, in addition to just diabetes care. I think I walked out with more information, even when I went for the follow-up visit, plenty of information. And they did ask if I could find somebody who will be guiding me through the process, I did say yes. I think I got less information because of that, but I would say it was a considerable amount of information.

WB: I'll just say that I think you had a major advantage in that you and I had met. You had a primary care doctor, who you can go back to and a lot of people don't have that. So, once they're done with their OB-GYN care, they don't necessarily have that follow-up with their primary care provider. Do you remember getting your six-week postpartum screening test to check for diabetes after having gestational diabetes?

Shweta: Yeah, I remember my sugar levels all through because that's a key focus that I keep on. I think I was still prediabetic, unlike others who did bounce back pretty quickly. And I continue to struggle with it. The surprising part was after 8 or maybe 12 weeks my weight dropped down back to six pounds above my pre-pregnancy weight. I would say I did well, but it took a little longer to get out of that prediabetic stage. I think after that, I had a fall and I had to slow down my exercise. I packed on 10 pounds. I had to go through physical therapy and recover and get back on it. As [I was] getting back on it, COVID hit. I packed on 10 additional pounds. I wanted to claw my way back through that and I think I'm doing much better now, but it has been difficult and I'm still trying to get into that healthy sugar level and keep it at that. But it has been a struggle and more challenging to maintain my sugar levels after pregnancy. It's a constant set of healthy choices I have to make that has been [a] continued challenge, but I think with practice, I have gotten a little better with it every time.

RK: When we say gestational diabetes, often it refers to being diagnosed with diabetes for the first time during pregnancy, not having it before but then after you deliver having it resolved, not necessarily needing the same treatment. I can't recall if you mentioned, were you on Metformin as well during your pregnancy?

Shweta: Yes, I was on Metformin after I got diagnosed with gestational diabetes. I think I got back on Metformin after having a baby, I think not immediately. I've tried by best to do it without, but I couldn't get that sugar levels down as much. So, I needed some assist with that.

RK: Right after you delivered, then it sounds like you were able to go off the Metformin?

Shweta: Yeah.

RK: And you were nursing and probably using more calories and losing that weight that you had gained. I think that's important that that treatment really was limited to the pregnancy, at least for that time. And for those people who might need insulin, often that's the case as well. I know you didn't need insulin, but the insulin is just needed during pregnancy, and then after you deliver often, you don't need the treatment right away. But it sounds like with your close follow-up with Dr. Bennett, perhaps even with the screening, you might have needed to go back on it a few years later, is that correct?

Shweta: Yeah, and that might be a consequence of my family history. I don't know. Perhaps the way I view gestational diabetes, it's a preview of what life will be like if I got diabetes. That was enough to motivate me not to get in that position again. [laughter]

WB: You had mentioned the word prediabetes Do you want to share, Shweta, what that means to you having prediabetes?

Shweta: Prediabetic. I am somewhere between 5.6 to 5.9. Not quite in that average range for AIC. It's my preference, I used to be at 5.43 pre-pregnancy, if I just get in that healthy range below 5.6, I would be a happy trooper. Yeah, for me, diet and exercise has always been about AIC. Yeah, it is always a struggle for me to be at 5.6 and below.

WB: Yeah, in some ways, I think, Shweta, when I think about all of my patients who have prediabetes. In your case you had gestational diabetes, and you had this few years where your blood sugars were a lot lower and then the last few years, we started calling it, based on that HbA1c cut-off, we start calling it prediabetes, it's so common to have prediabetes, and you have been managing it with lots of things. So, you can speak a little bit to your lifestyle changes, which I would love to hear about, because that's sort of the cornerstone of how we

have people manage prediabetes for diabetes prevention. But then in the last maybe year, we added Metformin because there are some studies that show it's a good diabetes reduction medication. So in your case, it's not treating diabetes, but it's treating your risk of diabetes and reducing that overall risk. I know that you follow your diet [and] exercise regimen, you were telling us some of the tracking you do. Do you want to share some of that with us what you've done since pregnancy to really kind of reduce that future diabetes risk?

Shweta: I think what is good to use some context, is before pregnancy. So before pregnancy effectively you're child-free, so I could do a lot of things: cook fresh every day and sip wine at the end of the evening. But what I did learn from my experience of being pregnant is there are a few things I didn't get it right. And Christine you alluded to some of that is eating carbs. When people are faced with this idea that "Oh, I had to reduce my sugar and carbs," you drop the carbs and I did that mistake before being pregnant. I think pregnancy gave me a pause and I had to ask myself- "What is a healthy balance?" It's not hitting all micronutrients, probably it's even having healthy amount of healthy carbs and healthy sugars, right in the form of fruits. That was a learning, eye-opening experience. Another thing I learned during pregnancy is through glucose tests. And one thing I learned through glucose test is my sugar spike mostly happened in the morning. So, I had to also make choices in my third trimester to manage it. It's not just what I'm eating, it's also when I'm eating. So, I kind of planned my meals so that my sugar maintains at a certain level within the healthy range, right? The aim is to keep that sugar level in the healthy range. And what that did is, it helped me manage my gestational diabetes, but also gave me a roadmap of how my diet should look, like after I gave birth. Those two diet changes have helped quite a bit. The second thing regarding exercise, I realized that we all have to do a little more pelvic floor exercises. And what that taught me is apparently, I have to pay more attention to my posture. It's not about going to the gym and lifting 40 pounds or 50 pounds, which is not for women, but it's taking that 10 pounds, 15 pounds, but maintaining the right posture to get the benefit. If it is not benefiting me in some way to improve my health, it's not the exercise I'm going to do. So, it forced me to make my exercise routine less complicated, more approachable, and less daunting. So that helped me keep active despite being a mother of a very active child. It's a lot of juggling. So, simplifying exercise [and] simplifying diet was something I learned through the process.

RK: That sounds like having gestational diabetes really [contributed to] those healthy lifestyle practices. If you will, you were able to adapt them lifelong and they really contributed to the prevention of diabetes. Dr. Bennett, I wonder if you could talk a little bit about the risk of developing diabetes in those with gestational diabetes. Does everyone who has gestational diabetes develop diabetes eventually? And why is it so important that we continue to educate people who have a history about the risk?

WB: We'd have to look at the numbers, but it also depends on the severity of gestational diabetes and that's a good predictor of risk. People who need insulin in pregnancy or other medications in pregnancy are a little bit higher risk. But the majority people do not develop Type 2 diabetes after gestational diabetes. The majority of people are able to keep their weight down or reduce their risk. There's been a number of really well-done studies that show that behavioral interventions with healthy diet, keeping a healthy weight, exercise, after pregnancy with gestational diabetes really reduces the risk. Maintaining that, as Shweta pointed out, is the hardest part. We all fall off our wagons of trying to maintain the healthy diet and exercise behaviors and how to keep those sustained in our lives. I mean, I loved what Christine was pointing out with the importance of meal planning and exercise planning is important too, right? Putting that on people's schedules. And I think that's the biggest challenge. We do know that if people continue to gain weight after pregnancy, or if they don't, they really struggle with losing their weight. After pregnancy, they retain their weight postpartum, the weight they gained in pregnancy, and that will also increase the risk of developing Type 2 diabetes. That's also I think, an important question that there's not a lot of guidance right now on how often people should continue to get screened for Type 2 diabetes. If someone is 25 and had gestational diabetes, I usually recommend annual screening at least for a few years, until we get a sense of whether there's been any progression of their HbA1c, which is that screening test we do for diabetes. If that's done, moving gradually up, then I might have them come back and see me a little more often, as Shweta and I do, because she's had some changes in that value. But in people where it stays the same for a long, long time, then I think we start to space screening to every three years and then we start to screen more often as they get older. And some of it depends on other risk factors, especially their weight. But age is the other big risk factor.

RK: Having this awareness of gestational diabetes is really important. And it sounds like you started Metformin a few years ago. Dr. Bennett, what led you to consider starting Metformin for prediabetes for Shweta? Sometimes, as Christine well knows, we will usually do lifestyle interventions and I know Shweta, you're already following those. So, what prompted you to start the Metformin and when would someone who has prediabetes or history of gestational diabetes, do you think should consider that?

Shweta: To be honest, I do have other risks like PCOS and I had tried Metformin before because of PCOS and it worked well. And I went off it, but I was young back in the days but as I am getting older, I think my ability to do lifestyle changes and manage the sugar was not working out. I think, if I recall, we had a conversation, we tried initially to do without and it was not working. I think the dosage of Metformin has not changed across time. And I'm able to manage that with the same dosage. With the assistance of the same dosage of

Metformin across time, I could do my lifestyle choices and manage to have healthy HbA1c. Without that, I would be always in that 5.6 to 5.9 range, and it would stay there but it wouldn't come down despite my best effort.

WB: I think that it really is personal preference. I mean, it is oftentimes a difficult conversation to provide somebody with a medication that they're going to be on for a long, long time that's really about prevention, and not treating something that they already have, right? Many people, Shweta, decide not to take a pill every day. But I think that you were very motivated by the numbers. We know that you track your numbers closely. We did see that the HbA1c was kind of gradually trending up. You have a really significant family history of Type 2 diabetes. You had gestational diabetes in the last few years. And so all of those risk factors together and the fact that you were motivated and thought you'd like to try the medication, I think made it something that we decided to prescribe and see how you did with it. Metformin, for some people, can be hard; some people have some side effects, some bloating and gas. And I think that you've actually done quite well with it without a lot of side effects. So that's the other thing that we think about. We don't want to give people a medication that's for prevention if they're actually experiencing some sort of harms from it or side effects. I think overall, you've had way more benefit and stability of the HbA1c if anything, a decrease in the HbA1c.

Shweta: I agree it has decreased, I do need to go back and test it. I can always feel when the sugar is doing better or not. I always have that sense of: I'm doing better, as opposed to when I'm not. And I feel that it has decreased and hopefully it will decrease to a healthier level soon.

WB: Do you ever check your finger sticks anymore?

Shweta: [In] mornings, I am in the healthy levels, but diet got to give it some time. So, on the weekends when I have one slice of treat, it doesn't do great. It just reminds me that "Hey, I cannot go and have a full serving of pastry." I am apparently forced to share with people, which I don't want to do. But yeah, so it is still a struggle. If I eat healthy, it is good. If I'm not, I don't track it regularly. I'm not very aware of it. And the reason I didn't track it early is because while I track numbers, I don't want to be obsessed with it. I tell myself, if I hesitate to eat a slice of cake, then I need to revisit my healthy life choices. It's a good balance. So, I've not tracked for three months.

WB: I think that's fine. I probably wouldn't recommend you kind of aggressively check your blood sugar. I was just curious.

Shweta: It is doing well. It was 90 or below in the morning, which was good.

WB: Yeah, you're fasting. So that's great. Yeah. And I don't know, Christine, if you want to sort of just comment a little bit on sort of prediabetes dietary management. I mean, I just think it's how we think about counseling patients, just given that what Rita said that for most patients, we're really not recommending Metformin yet, although some people are willing to try it. I think it's a good option. But when you see people with prediabetes working to prevent Type 2 diabetes, are there some tips that you usually share?

CM: I know we talked about carbohydrates already. But I think it's important to maybe also identify different eating patterns that maybe we haven't discussed, because I think research has shown that different eating patterns that include vegetarian and low-fat and the Mediterranean diet and the DASH diet are dietary approaches to top hypertension. Those are some different eating patterns that actually do reduce the risk for Type 2 diabetes. So, I think that that can always be a conversation to be brought up to see what someone might be interested in doing. And I think that's what's really interesting about those eating patterns is that they do contain a lot of healthy carbohydrates. The base of a lot of these are vegetables, beans, fruit, whole grains, those are all included. Those are important to include, but I think it's definitely finding what works for each person, but a little bit of focus too on eating pattern and what might fit best for them to help reduce risk for Type 2 diabetes, whether they've had gestational diabetes, and also having prediabetes to reduce the progression.

WB: I think the most important thing that you both said is finding the diet patterns that work for you, for long-term. Because different than gestational diabetes, where it's really just a few months 'till the baby's born, that you're managing so closely and testing and you're really aggressive when you're preventing diabetes in this setting. Having prediabetes, it's really like 10 years, 20 years of prevention. And so, you need a you need a lifestyle that you're going to be able to do for all those years and a diet and you're going to need to make it work in your family and social life. It's very different than what people are focused on when they have gestational diabetes, which is really just that healthy baby at the end of the road and focused a lot on the changes in a few months.

RK: I wanted to thank you all so much, Shweta, you in particular for sharing your story of having gestational diabetes and all your attention to healthy eating and exercise that has continued following the delivery of your healthy baby girl now seven, eight years old and continuing to follow those healthy eating practices and the effectiveness and reducing your risk of developing diabetes under the excellent

care of Dr. Bennett. So, thank you for being here Shweta, do you have any last words that you'd like to share with our listeners regarding the need to continue these practices after pregnancy?

Shweta: Definitely. I would say that, yes, we need to make all the healthy choices. But the one important lesson that I learned is when you slip up, it's important to just tell yourself, the next day is going to be a healthy choice and keep going and look forward. It happens and we should never get hung up on it. It's a marathon, not a sprint.

RK: Thank you, Shweta. And Christine, thank you for your great insights on nutritional management during pregnancy and Dr. Bennett again, for your medical input. Do you both have any last words that you'd like to share?

CM: No, I think it was just really great to listen to Shweta today and hear how hard she worked, and how lifestyle really did make changes for her when she needed to go back and come to check in with Dr. Bennett and get some help with medication management. Great to hear all this today.

WB: What I really appreciate about our relationship, Shweta, is it has been very prevention focused. And that is my favorite thing to do as a primary care provider, is to see people over many, many years and try to help them reach their goals and identify areas where we can do prevention and gaps. So, it's been wonderful taking care of you and I'm really honored that you were able to join us for the podcast.

Shweta: Thank you and I have to say, Dr. Burnett, I know I have bothered you with all my small to big questions. Remember, one of the most silly questions was, "Hey, what exercise can I do, being stuck at home?" And we had this discussion around Peloton and I told you "Well, Peloton has a long queue. So, I'm getting a rowing machine." But I knew that you answered all my small and big questions and I'm grateful for that continued care.

WB: Happy to do that. Thank you.

RK: Well, thank you Shweta, Christine, and Dr. Bennett, again. It's been so great to hear about the healthy eating practices, the prevention, the relationship over time in primary care. It's really been wonderful in the role of traditional management throughout this whole lifetime really, of prevention. So, thank you again.

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We love to hear from our listeners. The email address is hopkinsdiabetesinfo@jhmi.edu.

Thanks for listening. Be well and see you next time.