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Carbohydrate Intolerance: The Silent Partner in Chronic Disease Development

Narrator:
You are listening to Integrative and Functional Medicine in Practice on ReachMD, sponsored by the Metagenics Healthcare institute for Clinical Nutrition, Seeking to Optimize Patient Outcomes with Support from Clinical Nutrition and Lifestyle Medicine.

Dr. Troup:
Hi, I'm John Troup, and today we're with ReachMD talking about the integration of functional medicine and integrative medicine into clinical practice. Joining me today is Dr. Shilpa Sexena who's with the Seva Med Institute in Tampa, Florida. Dr. Sexena is a Board Certified family practitioner. She is also a Fellow of the Arizona Center for Integrative Medicine, and the Institute for Functional Medicine contributor and lead faculty member. She is also a faculty member of the Metabolic Medicine Institute and a frequent speaker around the world including a number of different associations including the American College of LifestyleMedicine. Dr. Sexena, thanks for joining us today.

Dr. Sexena:
Thank you, John. It's great to be here.

Dr. Troup:
Today we'd like to talk a little bit about the challenges in patient management related to control and balance of glucose. And so, glucose and the development of carbohydrate toxicity or carbohydrate intolerance is the fundamentally important issue because I will look at it, at least, as a starting point in the development of chronic diseases. So as you lose control, or lack ability to balance glucose, it goes through a sequence of events that leads to chronic diseases and even accelerates inflammation. You must have a lot of experience in managing and addressing that issue across a number of different patient groups, who are either diabetic, or pre-diabetic, or whatever other issues. How would you define, first of all, for our listeners today, what is that patient profile where you want to make sure as a practitioner you're addressing or better understanding this issue of glucose balance and control?

Dr. Sexena:
Well, it's quite an easy job, because if we look at the recent statistics that are available, you're more likely to find someone who has a glucose problem, whether they're pre-diabetic or diabetic, than not. So, the real challenge for physicians is not to try to find someone who is pre-diabetic or diabetic, but try to find the person who does not have a cardiometabolic or cardiovascular risk factor. So, there's so much push for us to better identify those at risk, find them at earlier points in their dysfunction, so that we can intervene with lifestyle, because that is what these bodies tell us. You should give a 12-week trial of good diet, exercise, etc., before initiating pharmaceutical therapy in many cases. So, as I would say to practitioners, first identify the person at risk; they're out there. Then identify them with the right testing, so not just a fasting glucose, for example. Many patients will have insulin dysfunction years before they have a fasting glucose issue. And so, if we're waiting for the number to tip over to 100, let's say, or 126, we're really short-changing the patient from initiating reversible techniques in lifestyle. So, identify first, and then use more sensitive parameters, potentially a fasting insulin, or maybe using an oral glucose tolerance test, to really understand, how is their body handling their caloric load and caloric quality?

Dr. Troup:
So, historically, in healthcare, the standard of care, particularly in trying to address this issue of glucose balance, has really been prescription of a first 12-week course of lifestyle adjustment, but more and more over the last 15 or 20 years, and as the epidemic of diabetes and obesity hit practices, we've seen more practitioners jumping directly to the use of prescription meds. Forget the 12-week lifestyle management and go directly to prescription meds, usually metformin is the first course of care. How do you overcome that and

what kind of suggestions and insights might you share with practitioners on, well wait a minute, it's still worth going through a 12-week lifestyle adjustment, nutrition therapy, and those kinds of things?

Dr. Sexena:
Well, so, the first thing is, is that the system has to support someone to be able to succeed at lifestyle. So, there's so many commercials that say, "When diet and exercise fail," and the truth is, is we fail diet and exercise. Many times it would help, but we have to create systems to support a patient and a provider to execute upon that 12-week plan. So that requires the physician being trained better in nutrition and exercise, because it is a wide gap for many physicians and healthcare providers, and then of course understanding how to coach and use behavioral modification techniques with the patient. I mean, that's the first thing that has to occur. So once you have that understanding in place, when you can help a patient overcome the false notion that it's their genes that is causing this problem, because, as we know John, genes haven't changed over thousands of years, and so it's our lifestyle that's likely the big driver of inflammation and, therefore, insulin resistance and glucose abnormalities. So, if we can help the patient realize you're not fatally doomed, you can actually do something about this. And then figure out what small steps they can start taking, because a lot of data points to incremental benefits with incremental improvements in lifestyle choices. So, whether that be food, exercise, etc. So, I think the first thing that we need to really start focusing on is understanding the beast better, that's provider and patient, optimizing the system so that we can actually let patients realize they have this other choice. Because here's the downside, if we don't give them that chance, they kind of go into a phenomenon where it's just one medication and then the disease gets worse because you haven't addressed the root cause, which is likely poor lifestyle, and so then it's two medications, and then, let's manage the complication. And so, it's kind of like that old cartoon where the faucet is turned on and the sink is overflowing with water, and then there's two people mopping up the floor. Well, yes, you've got to mop up the floor, but turn off the faucet.

Dr. Troup:
So, there's really mounting evidence now in the use of clinical nutrition and nutrition therapy that can effectively help manage, particularly the first-line course of care for the diabetic, at least, as well as long-term management of glucose control. How do you use, and are you using, and what's the key to successful use of nutrition therapy and nutrition, particularly, to manage those patients with a problem with glucose balance?

Dr. Sexena:
That's a great question, and I will tell you that in the beginning I was not empowered to do that through my conventional training alone, although I wished I would have learned it. So, I had to take course work to understand this and it's not very in depth course work, in fact, because much of this is intuitive, but using nutrient therapy, what I've found with my patients is, is that we have to make it quite, and I'm going to use this word, idiot proof. And I don't mean that patients are unintelligent, but they are time-poor, and they don't generally have tons of bandwidth to go take on deep science, and so you've got to kind of make it easy for them to transition to healthier food information. Because that's what food is. I mean, a thousand calories of broccoli is very different than a thousand calories of soda, and many patients are convinced that, well, a thousand calories is a thousand calories; it's all about the number at the end of the day. So, when we start teaching them, no, the quality of this calorie is just as important because it's sending signals in the body, they're more likely to take this, many times I use what's called a functional food. So, it's a pre-made formulation of the right carbohydrates, fats, and proteins, and then it has other evidence-based herbs, botanicals, vitamins, minerals in it, to be able to help now shift the signaling for inflammation or glucose control. Now, when these patients start seeing their blood sugar numbers actually start to improve, they become more engaged in my solution. So I do think that, historically, for me, it's important to create credibility on the frontend and you want to make it where that's easy for them to do. So, this shake -- is what I call it -- you know, I teach them how to mix berries with it to diversify it, because you've got to understand the patient mindset, the patient perspective. So, if you can make it taste good; if you can make it easy to do so that they don't have to learn how to be a gourmet chef on day one, they're more likely to try it. Then when they see the outcomes, they're more likely to continue to now say, "Oh, I feel so much better. I think I might eat a salad. Do you have any recipes for salad, Doc?" And that's when I go in with the, the next kill, with green vegetables.

Dr. Troup:
The clinical investigators at the Joslin Diabetic Center in Boston, at Harvard, recently conducted a series of studies, in 16-week outcome studies, and they showed exactly to your point, that a better macronutrient balance really is an important component where even the amount of protein that you would take would be much higher than would the standard diet or the standard recommendations would be. Quality carbohydrate sources that are slow-release really become really important. And they've been able to demonstrate that the use of those nutrition therapies over 16 weeks results in significant improvement in hemoglobin A1c by, on average, about 0.63. That magnitude of changes is as good as even the DPP-4 prescription meds are where, on average, those studies have shown about 0.66 improvement. Are you seeing similar changes in your own practice? You know, there's a difference between clinical, well-controlled, conducted clinical studies, but the practical aspect of when you're using nutrition therapy with patients. Is compliance and adherence

okay, or is it better, and are you seeing better control and balance of glucose and hemoglobin A1c's?

Dr. Sexena:
I see it consistently, and this is a personal interest of mine because we have a strong family history of diabetes in my family. I have a personal history of PCOS which, as we know, is very tightly related to insulin resistance. And so, many of my patients will have stabilization and reversal of their glucose pathophysiology but, more importantly, their insulin pathophysiology, because both of those factors contribute to different downstream diseases. And that's the important bit, that people who have PCOS, fatty liver disease, dementia, the new type 3 dementia, or type 2 diabetes that then goes onto insulin-dependent diabetes, they all drive from a similar root phenomenon, or underlying cause, which is insulin dysfunction and glucose dysregulation. So, if we can address the dysfunction at the cause, we see reversal and reduction of the symptoms and the parameters and markers. And because I'm still a conventional doc, that I want proof, so, it's not just the A1c, but Duc Le has done some good work to show that many other factors are playing a role, whether it's toxicity, it could be that the mitochondria are not getting enough nutrients to secrete the right amount of insulin, so many other players, that a solid base in pre-digested, that's another thing to just bring up. These pre-digested macronutrients can really help start changing signaling, with adipocytokines, to start changing the downstream phenomenon of disease.

Dr. Troup:
This issue then of glucose balance, glucose control, you've kind of alluded to it as part of the root cause, or contributing factor to the root cause of a lot of chronic diseases, and you mentioned some patient profiles. Are there others? You mentioned the PCO, PCOS patient, which is usually young to not-more-than middle-age female. What about other associated disease, to even the pre-diabetic or the overweight individual, those are probably more obvious, but are there others?

Dr. Sexena:
Oh, yes. So, breast cancer. Estrogen receptor positive breast cancer is very much stimulated by insulin and glucose dysfunction. There's a strong association. So think of how many women would benefit from preventing breast cancer. Not just early detection with a mammogram, but true prevention, if you address their glucose and insulin dysregulation on the frontend. Other osteoporosis. We also know that for men having insulin dysfunction can cause hypogonadism, low testosterone, and then this creates a whole other downstream effect as well. For women, we talked about the androgen excess with PCOS. But again, addressing the root cause helps to reduce that. Fatty liver, if you think about it, there is no medical therapy for fatty liver, no prescription therapy. And it's due to be the number one reason for liver transplant in 15 years and we, in conventional medicine, have no prescription or procedural therapy ready for that. But many, many studies point to physical activity and control of blood sugar and blood insulin levels as the driving force. So if we can address that, we're about to help the pediatric and the adult disease trends for fatty liver disease. Many cancers are driven by insulin dysregulation and glucose. So, you'll see a lot of people who will become lean, because they're trying to reduce fat stores, to reduce inflammation, to reduce insulin, and then reduce glucose dysregulation, which can then drive cancer.

Dr. Troup:
I'm John Troup. This is ReachMD. We're talking with Dr. Shilpa Sexena today about functional and integrative medicine approaches and management of glucose control. Recently, the CDC, the Center for Disease Centers, and I think with, and in conjunction with the National Institutes of Health, introduced an assessment tool to help look at if you're at risk or not. Are you using that in your practice? Have you heard much about that and what's the implantation and integration into your practice with those kinds of assessment tools? Are they helpful? Will they make a difference?

Dr. Sexena:
They do make a difference. I do think it's important to realize there are many different ways to find a person who has glucose dysregulation or glucose control issues. That is one tool and if you use that tool, it's said that more than two-thirds to almost 80% of adults would have this and we know that the pediatric trends are following closely behind. And so, I use those tools, but there are also much subtler tools that we can use from peoples' standard cholesterol profiles. So, for instances, a trig over HDL level can be used to understand that someone has insulin resistance risks. We can do fasting insulin, as I said, if we understand that those things are driving disease prior to the fasting glucose. It's important to understand there are clues everywhere. We can look for physical exam symptoms like acanthosis nigricans. We can look for body composition. So many different ways will help you nail the diagnosis and when you're able to nail the diagnosis, then you're able to engage the patient and, quite honestly, get reimbursed for your interventions for this. Because, you know, some bit of our healthcare insurance model is based on diagnosis driving your next clinical action.

Dr. Troup:
That insight and that description that, that you just shared with us is really, really very powerful, because I think, for me anyway, it really brings out this concept of understanding the underlying cause. Where it's not just looking at a blood diagnostics where you're looking at a resting or fasting blood glucose or even an OGTT test, or hemoglobin A1c, but it's a multifactorial issue that you need to really understand about patient care for better use of treatment regimen and outcome. When you talk about those kinds of things in the

functional medical approach to care, how do patients respond to that and what type of outcomes are you seeing?

Dr. Sexena:
You know, in functional medicine, I use this form. It's called the Medical Symptom Questionnaire, and it's basically a pan-survey, a review of systems, if you will, but going at it from a functional medicine lens. And so I have our patients, individually, at the beginning of their case with me, track and assign value to each one of their symptoms. Then, we go through the process of a functional medicine plan of care, usually based in lifestyle, and then one month later, assuming that they were compliant, which most people are if you engage them in the process, you have them repeat it. So, let's say that their hemoglobin A1c was improved at 3 months. Let's say, let's check my 3-month MSQ. So, A1c is better, but when they check their MSQ and do it again and compare it to their first one, they say, "Oh, I'm actually having less headaches; I'm less constipated; oh, I do have more energy; oh yeah, I forgot I use to have that rash." So, what you do is you start showing patients that your blood sugar issues was not just measured by an A1c improvement. Your whole body is better. And what we find is many people start to forget what their old version was until you put it right in front of their face and they see, like, "Oh yeah."

Dr. Troup:
How about longer term outcome? I know that that's always an issue, again, with kind of buying into and managing your own lifestyle. So usually, after maybe 6 months typically, patients will kind of tire of watching their lifestyle, and then they'll regress and gain weight and become out of balance with glucose. How do you address that issue in patient care?

Dr. Sexena:
You know, I'm more of a call-it-out, manage-expectations type of doc. So, what I explain to patients is, is that we want you to do this. We understand that life will happen simultaneously, and so, if you have work stress, or you have a new baby, or whatever else, you hurt your knee, these things will now influence your ability to carry out the same plan. So, I say it's appropriate to have recycling or regression, but the goal is, is that you know what you have to do to get back in a forward trajectory towards the healthier lifestyle again. So, I don't expect people to continue to be linearly improving or exponentially improving, and to put that out there for a patient is really setting them up for failure. We have to let them know, "Listen, you're going to fall every now and then, but I want you to remember, come back to see me, and let's figure out what you might be able to do. If your knee doesn't work and you can't exercise, let's modify your food, let's see what you could do to reduce stress, and let's change the signaling that's there." So, giving them permission to fall and say, "When you do, it's normal, come back to see me," I create long-term success, forward progression. And what we find is, is that the people will fall. So long as I teach them how to stand back up, they continue to come back, and at some point they know how to pick themselves back up, because we keep going through the same algorithms of, "Okay, let's see how we can modify." They almost come up with their own toolbox of, "Well, this is how I need to eat, then I need to do this, I need to drink more water, I need to not go to this fast-food restaurant once a week." They're very capable of helping themselves if we can give them the systems to do so.

Dr. Troup:
How, how, how do you help them then do that? Is it, is it something that they just need to own individually, or do you provide, say, a nurse practitioner or a health coach, or a physician's assistant, some physician extender to help facilitate that, and when do you wean them off of that service, or do you ever?

Dr. Sexena:
It's a great question and I think many functional integrative docs recognize that it's a team approach that's going to help a patient. So, many of the times I have a health coach who helps them with day-to-day or week-to-week questions. So, in the beginning, the health coach is available and with our newer patient, younger patient panel, and actually some of our patients, they're very tech savvy, so they can use telemedicine with the coach, and it's a much better use of time for the coach to answer those questions that he or she can, and then she can come to me and say, "This one's a little bit of a tough one for me, does the patient need to come in?" And now, I'm using my skill for where it's best served. So, I do think, John, that bringing in ancillary support is useful because it will be difficult for the physician himself, or herself, to do it all. We don't, there's not enough bandwidth of physicians, so we need to leverage all these other skilled professionals to help.

Dr. Troup:
Yes, and I know that there are a number of allied professionals, for example, using medical nutrition therapy, well-recognized course of care, mapping out daily and weekly programs for the use of medical foods, as an example. Are you seeing those things more commonly used to help make it more convenient for practitioners to give their patients modules that they can trust will know will work?

Dr. Sexena:
Yes, and I think that is important for the provider to feel safe that there is an algorithm that is delegated to someone. So, for instance, if I see a patient and I determine that they're pre-diabetic or diabetic, and I want them to go through a one-month food lifestyle change using

medical foods, I give a prescription, if you will, to the patient, and then their next visit can be with the health coach for 45 minutes going over all these logistics. This health coach will give handouts, teach how to take the medical food, and then check in with the patient. Now, I can also choose to jump in for 5 minutes during that 45-minute visit and do a quick doctor-patient face-to-face and bill insurance for that, because, let's face it, a lot of doctors have 5-minute appointments, but my patient just got 45 minutes with a health coach on top of it. But the time that the health coach took, it's too much for me to do that for all of my patients. So, I find it to be incredibly useful to integrate these people with a plan for them, so that I'm not, that they're not practicing outside the scope of their allotment of services that they can provide by law.

Dr. Troup:
This is such an exciting time in healthcare with the new tools, the evidence that's available, the quality of science that's available, and the practice guidelines in functional medicine and integrated medicine provides practitioners. I can see the enthusiasm in your own thoughts and, and processes of patient management. How about the other coin? Are you seeing patients getting excited and feeling that they really own their health now, and they buy in, to a greater degree, in better management of their conditions and health?

Dr. Sexena:
Yes. And you know what, I think that's going to be the solution for physician burnout, honestly, because patients want to do the work if there is someone who can safely guide them and, therefore, the burden doesn't fall on the physician to have to handhold on every single step. The other thing is, is that's really inaccurate to think that it's the physician who heals. It's the physician who empowers the patient to heal themselves in many ways. I mean, I always explain, I have probably a cheesy way that I explain it to my patients, but I always say, "Listen, we're on the Love Boat and even though you think I'm the captain, I am not Captain Stubing. You're Captain Stubing. I'm just Julie, the cruise director, and I come to tell you what things are going on in the boat, but every other moment you're not with me in the office, you're the captain." So, I think it's really important to have shared leadership, and patients are ready to take it, if you help them with the information and the empowerment; they take it, and then you feel like you're partnered. I mean, we know that life is easier when you sometimes have a collaboration or a partner in the process.

Dr. Troup:
I'm John Troup. I'm here with Dr. Shilpa Sexena today, talking about the use of functional medicine and integrative medicine approaches in managing glucose and trying to improve some of the issues with glucose intolerance and even glucose toxicity for better outcomes. Dr. Sexena, thanks very much. Any last insights or advice or recommendations for our practitioners listening today in how to adapt this new clinical practice approach or better outcomes?

Dr. Sexena:
You know, what I think that would be really wise for anybody who's really just questioning, "Can I do more for my patients, or is there more science that I can learn because I'm getting a little plateaued on what I have to offer here," I invite you to stick your neck out and just take the next step and learn something else. Take a free webinar, find an online course. Consider, if you're intrigued by that, to take your education further. Because we know that if you don't make any movement to change, well then that's the definition of insanity. So, I'm just encouraging people, if you're not satisfied with how you're helping your patients and you want more for them and for you, take a step.

Dr. Troup:
Great. Thanks very much. Thanks to our listeners for joining us today. This has been ReachMD and Functional and Integrative Medicine in Glucose Control. Thank you.

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