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** * * Intro Music * * **

Welcome to Supplementing Health, a podcast presented by Advanced Orthomolecular Research. We are all about applying evidenced-based and effective dietary lifestyle and natural health product strategies for your optimal health. In each episode, we will feature very engaging clinicians and experts from the world of functional and naturopathic medicine to help achieve our mission to empower people to lead their best lives naturally.

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[1:35] *Cassy Price*: Hi, there, and thanks for tuning in to Supplementing Health this week. I'm your host, Cassy Price, and today I am thrilled to have Madison Wilcox, Certified Holistic Nutrition Consultant joining me. Welcome, Madi.

[1:45] *Madison Wilcox*: Thank you for having me.

[1:48] *Cassy Price*: Today, we'll be discussing the role that diet and nutrition play in sustaining mental health, but before we dive in, would you like to tell our listeners a bit about yourself and what got you started in your nutrition and supplement journey?

[1:59] *Madison Wilcox*: Nutrition has always been part of my life, whether I knew it or not. Recently, I went on a trip overseas, and I got really sick. It was kind of in that position I was in, "what do you do?". Do you go to a hospital and seek medical treatments overseas, or do you come home and end your trip, or you keep going?

[2:21] I chose to keep going with my trip because it was the trip of a lifetime. I was having so much fun. But, of course, at that age and at that time, I didn't realize what I was doing to my body. So I came home. I went to a doctor. They put me on antibiotics right away, and then I actually had to go to Infectious Disease here in Canada to see what was going on. I got

prescribed some more antibiotics, and that led to a hospital stay because I had an allergic reaction, and it kept snowballing from there.

[2:56] The only thing that helped after all those antibiotics and a hospital visit was nutrition and my diet. I really had to change it to feed my body and see how that's going to help and feel. I did so much damage from the antibiotics and from staying overseas when I should have come home. But, what can you do? Then I decided after that if that happened to me, it probably happens to other people. We just don't listen to our bodies, and we keep going. Then we do all this damage.

[3:28] I decided that's when I should go into nutrition as a career. I signed up for school the next month and started. From there, I fell more and more in love with it. I actually do really love mental health when it comes to nutrition because little do we know what we put into our bodies is actually affecting our mental health and our wellbeing.

[3:50] *Cassy Price*: Yeah, absolutely. It plays such a key role, and it feeds or hinders the different microbiome and everything as well, which we've talked about in previous episodes. There's so much that goes into nutrition. As you mentioned, it also impacts mental health.

[4:07] Each year in Canada, one in five Canadians experience a personal mental health condition, which is roughly seven-and-a-half million people, which is a crazy high number. There is research to suggest that what we eat may not just affect our physical health, but also our mental health and wellbeing. Can you speak a bit more to that specifically?

[4:28] *Madison Wilcox*: Yeah, of course. Mental health is massive, and I feel like, in the more recent years, we're learning more about how our diet and nutrition have affected us. To say that you are what you eat – a lot of people laugh it off and be like, "Okay. Whatever." But it's really true because you have to think your brain is always on. It's always working; it's the main process that takes care of your thoughts, your movements, your breathing, your heart rate, your senses. It's always on 24/7. Even when you're asleep, your brain is still functioning.

[5:02] So this means that our brain needs that constant supply of fuel, and the fuel is our food. If you think of your brain as a car. In order for your car to run, you need to put fuel in the gas tank. It's as simple as that. That's what we're doing with food. We're feeding our brains. Everyone says if you work out, then you're going to have a good outlook on life because you're happier working out. But no. It's what we put in our bodies.

[5:31] We need to make sure that we are eating high-quality foods that contain lots of vitamins, minerals, and antioxidants that are going to keep nourishing our brain and protect it from the oxidative stress. This is the chemical, free-radicals, that are produced in the body, but actually, cause damage to our cells.

[5:51] Anything that we ingest other than healthy, nutrient-rich food is going to cause damage, and it's going to lead to the mental illness that we read so much about now. We have to think of

now, in our century, our day and age. What do we love? We love fast-food. I'm guilty of it. Everyone I know is guilty of it. Our lifestyles are so busy and so rush-rush, it's easy to just go through a drive-through and grab a burger and fries and a shake. But that is high in refined sugars and high saturated fats that are harmful to the brain.

[6:31] So, you're going to worsen your body's regulation of insulin, and insulin is so important for the body because this will promote inflammation and oxidative stress when we're eating those high diets. You're going to have that high where you go, "Oh, I feel so good. I have lots of energy," and then you're going to crash and burn. That's why we want those healthy foods.

[6:54] There have also been studies on the market showing that there is a correlation between high diets and refined sugars and the saturated fats and impaired brain function. When we're saying impaired brain function, in a sense, we're going to say the worsening symptoms of mood disorder, and a big one right now is depression.

[7:17] If our brain is deprived of the good-quality nutrition, or if we have the high free-radicals in our body, the high inflammation, and this is all circulating everywhere in our body, but we're focusing on the circulation of the free-radicals in the brain. So, you're going to damage the brain tissue and the neurons, so the chemicals and the signalling to each other, and you're going to see that your mood is going to decrease. There's such a big connection between your mood, mental health, and what you eat. It's not just about working out. It's about fueling your brain.

[7:58] *Cassy Price*: Right. We've all heard that saying, "Too much of a good thing." Sometimes, as much as we love it like you were talking about the fast food, it's not good for us, though it might taste good in the moment. From that note, we know that there's been a bit of an obesity epidemic that's come through with us eating more fast food, eating larger portions, etc. that's come as part of the North American diet.

[8:25] Some studies have found that there is a two-way association between that obesity and depression. What does this mean, and what are some of the steps that someone could take if they're suffering from depression to avoid this. Or, vice versa, if they're obese to avoid the depression?

[8:43] *Madison Wilcox*: It's kind of a strange thing now with obesity and how big of a problem it has become because of our new lifestyle that we've all said, "Hey, this is the new norm." But is it the new norm? And I'm guilty of it too. Let's be honest. I like my fast food and my treats, but it's a balance, and I feel like that's where we've gone away from it because we have seen that people who are obese have a 55% increase risk of developing depression over time.

[9:17] So if you're already having depression or a mental health illness, and then on top of that, you're finding that you're becoming more and more heavy or more and more obese, and we're taking away all the genetic factors in it, and we're saying it's just for a lifestyle, you're going to increase that risk of having more and more mental health issues. The best thing is to take a step

back and look at your lifestyle and see what can you change? Is there something that is making your life, let's say, are you unhappy in your life, and what is that coming from?

[9:52] The mental health we have to address first. If you have underlying depression already, where's that depression coming from? Are there any steps you can take, or is it time to reach out to a professional and help you that way? Then, the obesity would be a second concern. So, as soon as you fix your brain, your body is going to follow.

[10:11] Then, let's do vice versa, so let's say you're already obese, and you're slowly developing mental health issues. You're finding you're more depressed. A lot of people then are having body issues, and that just snowballs, and it just keeps rolling down that hill until you find that you're depressed and you have clinical depression.

[10:35] So, what can we do? What are the steps? Well, obviously, a lot of people in that sense think "Let's go to the gym. Let's take up walking. Let's take up weight lifting." This is actually a great step, but we need to start with our nutrition. So it's making the slow changes. I'm not saying go cold turkey if you love drinking a litre of pop a day or five litres or you love going to a drive-through every day.

[11:02] Let's make that little step. Can you cut your pop out for soda, just plain soda. Add some lemon in it and maybe some berries if you want that sweetness. Or can you limit the fast food, or can you make the fast food that you love at home? So, making the chicken nuggets at home in a healthy version.

[11:20] Or if you love baked goods, can you add flaxseed, chia seeds, the healthy fibres that you need and that will support your gut as well. We'll get into that a little bit more about the gut-brain axis and how it really does play a role in depression.

[11:39] *Cassy Price*: Before we jump over to that, I know our mental health is very much impacted by neurotransmitters and hormones that are coursing through our bodies throughout our lives for different reasons. I have heard that there is a link between adipose tissue or fat tissue and higher estrogen levels. Does estrogen play a role as well in the mental health and depression that people do experience when they have these connections?

[12:08] *Madison Wilcox*: Yes. That's a great point. It really does. We have something called estrogen dominance, and it's where the estrogen has basically taken over. You find that you're going to get more of that bad fat deposit, and again, that's going to lead to the depression and the mental health because you're affecting your brain.

[12:30] So the hormones need to be balanced and working synergistically together in the body. If one hormone is out of whack, then it's going to affect your brain and the signals that it's sending to your body and the release of the chemical reactions in your body as well. That's where we're seeing depression come in.

[12:49] *Cassy Price*: Okay. Awesome. What are some of the important nutrients that people should be cognizant of getting in their diet to support their mental health?

[12:57] *Madison Wilcox*: There's so much that we can do both through supplementation and through diet. A good one is carbohydrates. I always like to start with those. A lot of people will say, "No carbs; zero carbs." Carbohydrates are great because they have a naturally-occurring polysaccharide. They play an important role in the structure and function of the organism, which is us, humans.

[13:23] They have been found to affect mood and behaviour. So eating a meal rich in carbohydrates triggers the release of insulin, and insulin will help our blood sugar into the cells where it can be used for energy, and it will also trigger the entry of tryptophan to the brain. Tryptophan helps because it affects the neurotransmitter levels in our brain, which is the signalling to each other.

[13:51] How to do that is to eat the healthy carbohydrates. I'm talking fruits, vegetables, whole-grains, and whole-grain pastas. They're more likely to provide that moderate but lasting effect on your brain chemistry and your mood. So any yeast, the white pastas, or the white carbs, they tend to provide that immediate, but temporary relief. Whereas, if you're going to the plants and the whole wheats, you're going to have that longer release, and you're not going to have that big dip.

[14:28] Another one is protein. Proteins are so important for us. I can't stress that enough, and I'm not saying go eat a 20-pound steak. No. Let's not do that. Proteins are made up of amino acids. Amino acids are the building blocks of life. As many as 12 amino acids are manufactured within the body, and the remaining 8 have to be supplied through the diet. So, these are the essential amino acids that we have to find somewhere, either through diet or supplementation.

[15:01] So, a high-quality - It's all about the quality you get of protein - contains all your amino acids. For people that don't do plant-based, these are foods like meat, milk, dairy products, and eggs. For us that like our plant proteins, this is where you're going to look at beans, peas, grains. Again, these might be missing one or two amino acids, but you can keep making that up through supplementation. Protein intake helps with the individual amino acids, which affect our brain function and mental health. Many of the neurotransmitters within the brain are actually made from amino acids.

[15:48] *Cassy Price*: If there are people that aren't able to get enough protein in their diet or need help, do you have specific supplements that you suggest for people to ensure they are getting these nutrients if they're not able to get it in their day-to-day diet?

[16:05] *Madison Wilcox*: Yeah. Supplements are great, especially with our food nowadays. There are more and more studies showing that our food is over-manufactured to the point that we're not actually getting everything we need out of our diet. It's so good to have good supplements behind you.

[16:21] One that I always say for everything, especially for mood and mental, are your B vitamins. B vitamins are great for the overall body, but they also help to produce our mood-altering neurotransmitters, which are chemicals that are allowing neurons to communicate with each other. They also help maintain the fatty myelin covering over our neurons. It's making sure that our brain is communicating and that everything is firing how it should be.

[16:53] Another great one that we need, that we don't get enough of from our diet is vitamin D, especially with us here in Canada. We don't get enough vitamin D naturally through the sun. We're seeing more and more with our ozone layer depleting that we are getting a little bit more, but it's still not enough.

[17:13] So, you want to supplement with vitamin D, and vitamin D3 is what I'm talking about because it has the enzymes that help produce the neurotransmitters like dopamine and noradrenaline. Low amounts of these have been associated with the development of mood disorders, so then I'm talking any mental issues focusing on depression and anxiety with vitamin D.

[17:39] Antioxidants, we should always have a good antioxidant in our diet because it helps prevent oxidative stress. I'm talking about the free radicals in the body. The antioxidants are going to come in and help clean that up. And Omega-3. I just got myself started on Omega-3. Honestly, this is one of the best things I've added to my diet. It helps with that communication in the brain. Again, if your brain is talking within itself and all the signals are firing out to the body how they should be, you're going to see that mental health issues really isn't prominent in that person.

[18:20] And lastly, fibre. Unfortunately, it seems like a lot of the population does not get enough fibre in their diet, so this is one that is so easy to add as a supplement into your diet. You can add a little bit, let's say a solufibre into your smoothie or your tea or your coffee, and it helps maintain the healthy population of good bacteria in your gut.

[18:44] Again, we'll talk a little bit more about the brain-gut axis. But think of fibre as a food, and it's for your little microbes in your gut. This is how we're going to feed them, and they're going to play a huge role in the mental health just because it's going to help with the communication between your gut and your brain, and you're going to make sure that your gut is always going to be a happy gut because those little microbes floating around in your gut are always going to be good guys.

[19:11] We don't want to take over with the bad guys because as soon as that happens, that's where we see the problems with the mental health. Depression, and anxiety come in when your gut is overruled with bad microbes. So, your digestive system impacts your brain so much. That's why we want to make sure that we're feeding it, and we're supplementing as best as we can.

[19:33] *Cassy Price*: Okay. You mentioned it a couple of times, and we have talked about that there is a link between mental health and the gut microbiome. Can you speak to what that link is and how to support a positive relationship there?

[19:48] *Madison Wilcox*: Yeah. There's a link between our brain and our gut is actually really important. We call it the gut-brain axis and also call it the microbiome-brain-gut axis. This plays a massive role in our mental health and in our brain and gut health. We always want to make sure that we're having a healthy gut because that's the link between the central nervous system and the entire nervous system. It involves direct and indirect pathways between our cognitive and emotional centers in the brain with the link to our intestinal functions.

[20:26] A good example is if you eat, let's say you got that extra-large pizza with extra cheese, extra pepperoni, and throw all the meat on there, and then a few hours, maybe it's instant for you, or maybe it's the next day, you feel bloated and really down on yourself. That is showing that what we eat is affecting our brain.

[20:51] What happened in that sense is you ate all this processed food, high-fat, lots of sodium, and you became so overrun with bad bacteria, bad microbes in your intestines, but it communicated straight to your brain, and that's where you got that low. So, a really big pathway of communication that is linked with depression is what we call the altered intestinal permeability.

[21:18] This is where you see, or if you have heard of leaky-gut syndrome. This is chronic stress that we're causing that is altering our intestinal permeability. If you think of a cheesecloth, how first when you get it, it's tightly packed, only a little bit gets through. Then, over time, you use it, I don't know, you're making cheese with it, and you see that it's slowly coming apart, and more and more it's getting through that cloth.

[21:50] That's what leaky-gut syndrome is talking about. We're letting all those toxins and all the food that we don't want out of our gut and into our bloodstream. This is causing inflammation throughout the body, but it's also impacting our brain, so it's causing the mental health, the mental issues, and depression is highly linked with leaky-gut syndrome. The main point of this is if we have a healthy gut, we have a healthy brain.

[22:23] *Cassy Price*: That's very interesting. Unfortunately, we've reached the end of our time for today, but I think this conversation has provided a lot of food for thought, and I really appreciate you taking the time to come on and chat with me today. Thank you, Madi.

[22:39] *Madison Wilcox*: Thank you so much for having me.

[22:41] *Cassy Price*: Yeah, absolutely. We should have you on again, for sure. And thanks to our listeners, as well, for hopping on today and taking the time to listen. Please join us again next week to learn more ways to supplement your health.

** * * Outro Music * * **

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