



Güt For Your Health with Desiree Nielsen **Nerdin' About Podcast Transcript, Season 3 Episode 3**

Michael

Hey everyone, welcome to Nerdin About! I'm Space Michael, and with me as always is someone who just came back from the beautiful province of Nova Scotia. That is Dr. Kaylee Byers. Hey, Kaylee.

Kaylee

Oh, hi, how are you doing? How was your summer here in Vancouver?

Michael

It was too hot for my liking. I like the temperature to be 15 or below anything above that, I'm sweating, and I'm irritable. What was it like over on the right coast?

Kaylee

It was above 15, you would have been miserable. So, it's probably for the best that I didn't pack you away in my suitcase and bring you with me for more than one reason. So yeah, it was quite warm. It was lovely. I was lucky I got to see my family and spend a lot of time staring at starfish, which is one of my favorite activities.

Michael

How was your eating over there?

Kaylee

Oh my gosh, it was good. A local grocer that has come in is bringing in some local foods. Of course, I got to have one of my favorite dishes, which is lobster with homemade biscuits and mussels as an appetizer. I am very excited that we're going to be talking all about delicious foods, maybe lobster who knows. So today we are talking with Desiree Nielsen and Desiree is a registered dietitian and host of the [Allsorts Podcast](#) and author of [Eat More Plants](#), a plant based anti-inflammatory cookbook, as well as the upcoming 2022 "Good For Your Gut". She has a practice focused on chronic digestive and inflammatory disease and plant-based approaches to optimal health. Hi, Desiree welcome to the podcast.

Desiree

Hello!

Kaylee

So, lobster. Anti-inflammatory? Yay or nay?

Desiree

Point for the fact that it's a whole food. It's so funny because I think people get so caught up in nutrition. There's a ton of science that goes into this, but at the end of the day, we're pretty much always doing better if we just eat like single ingredient foods.



Kaylee

Well, I'm very good at that. One of my favorite foods is crackers. Nope, that's not a single ingredient. It is a single thing.

Desiree

It's not even a single syllable Kaylee.

Kaylee

Ugh I know. I'm already failing, this is going to be bad for me. (Laughs) Okay, let's talk about diets Desiree, what led you to pursue a career as a dietitian?

Desiree

I actually started out at UBC, thinking that I was going to go into med school. So, I was like nutrition seems like a really good thing to know, as a doctor, right? Because I had read that in med school there really isn't any nutrition education. I was passionate as a teenager about taking a holistic approach to health. I had this awesome GP growing up, and she would always be like, "Desiree, how are you doing? You don't look so well." She really wanted to talk to me about what's going on in my life, as opposed to just checking me out, "Let me take your vitals, take this medication". I really wanted to be the kind of Doctor who was like, "Let's talk about your stress. Let's talk about how you're eating." Then I got into UBC, and a lot of these things I think I'm going to do as a doc are actually what I would do as a dietitian, which I didn't even know what a dietitian was going into UBC. So, I wanted to check it out.

Michael

Desiree when we look at all these myths that are coming out, and all these cleanses, all these new fads that come out, I'm wondering how much of your job is just battling this information age that we're in right now? What is the internet doing to our health and our bodies? Now that we have access to all this information, is it making us healthier? What's going on?

Desiree

As a dietitian who puts herself on the internet to educate people about nutrition, I have a real love-hate relationship with it. Particularly because I work with a lot of people who have complex cases for whom there isn't just "this is the diagnosis, take this pill and everything goes away." So many of the clients that come through our practice have been to multiple medical specialists and they've been to the naturopath, the Traditional Chinese Medicine practitioner, and everything in between, and they're still not well. The internet can be amazing for people with that sort of complexity because they can gain access that their GP doesn't have at top of mind because they don't see a lot of it. It can be empowering in that sense. The challenge is nutrition doom scrolling is real. So, you get into these anti-inflammatory communities or gut health communities, and people just start spewing this garbage "Oh, this worked for me, and this worked for me." It could have been a total placebo effect because that's real, but then people get really scared. This has been happening for so long, but social media makes it so much worse, particularly in the age of video because we're attaching to people emotionally and searching for these answers. I actually think it makes us a lot less healthy.

Kaylee

One of the things we really want to talk to you today about was diet myths. I feel like there's one million diet myths and that I've taken part in about 5% of them, I'm thinking about cleanses, or high fat foods that are bad for you. So, what do you feel are some of the biggest diet myths out there right now?



Desiree

I think that one of the biggest diet myths out there is absolutely that anything you do for 7 to 14 days is going to magically erase what you've been doing for the last 10 years.

Kaylee

Oh, no!

Desiree

But it makes sense in our mind, right? Like, it's this reset, clean slate, everything that came before just didn't happen. You know, that's just not the case. Our red cells aren't necessarily going to completely renew themselves overnight, because we drank a bunch of green juice. I think that's something really big, but I think the biggest reason behind it is that we are constantly searching to feel better. We have this idea that if this, then that. Someone actually sent me a DM today and said "I'm having a really huge problem with reflux. What supplement can I take to get rid of it?" I'm like, "Whoa, back up. Let's talk about your stress. Let's talk about how you're eating in general. Let's talk about what else is going on for you." Because we have this idea, which is a myth sold to us by the huge diet industry, that there is one answer to solve them all. If you have diabetes, or cancer, it must be gluten. Gluten is evil, or carbs are evil, or in the 90s, fat was evil. It's always just one thing which completely negates how our body actually interacts with our environment because food is not just nutrients, food is information. Our body is constantly interpreting its environment and responding in kind. It's not just one piece of information. It's not just gluten, it's not just vitamin D, it's so much more holistic and complex than that.

Kaylee

We contain multitudes. So, you're telling me then that I can't just hit subscribe on this "special tea that's going to make your whole life better." That's not going to do it for me?

Desiree

No, all that tea is going to do is make you poop your pants.

Kaylee

I mean, there's a time in place. (Laughs)

Desiree

Maybe if you're constipated, 100% if you're on board with that, but if you think it's going to detox something, no, it's just going to make you detox your wallet when you buy new underwear. (Laughs)

Michael

Well, one thing I wanted to get into was something that I never had heard of when I was growing up, and that is the word gluten. Now we have these gluten-free foods, we have people that have gluten intolerance. I wonder if you could just get into that a bit and tell us what gluten is, what it does for our bodies, and what's going on with this new movement?

Desiree

Yeah, gluten-free is sort of the new baseline in healthy eating these days, which it really shouldn't be. Gluten is really interesting, because it's just a protein. We're all pretty protein obsessed, like all of us can agree protein is a really good thing. Gluten is just a protein, it's a



protein found naturally. It's not genetically engineered into wheat, it's just there, the reason why bread rises is gluten. It has a unique structure for a protein. It contains a high number of amino acid bonds of proline and glutamine, and because of those proline and glutamine bonds, our digestive enzymes don't 100% break it down. So, because they're not broken down into their basic components, they don't get absorbed, like anything you break down 100% and absorb into your system is no longer an issue for your gut, because it's not interacting with your gut tissues. Gluten is not that way. So, because you have these partially digested gluten fragments, they now have the opportunity to interact with your gut tissue and to interact with your microbiome. That's interesting from a nutritional perspective, but what really started this was awareness about celiac disease. Celiac disease is this auto immune disease that isn't caused by gluten, you don't eat gluten and give yourself celiac disease, but once you have celiac disease, eating gluten triggers the auto immune cascade. So, you have to go completely gluten-free. If you were celiac like 15 years ago, it sucked. You had like one kind of bread to eat; it was pretty much like Styrofoam. So, this whole gluten-free fad is fantastic for people with celiac disease because now they can eat any food they ever ate before, now you can get gluten-free. So there's some silver linings to this, the bad part of it, though, is that people think that gluten is bad for you. There's a lot of observations and truths about gluten in the scientific literature that really freak people out. So, we know from the celiac disease research, which was spearheaded by Dr. Alessio Fasano, who's a world-famous researcher in celiac disease, that gluten triggers the release of a molecule called zonulin, which essentially unzips the tight junctions in between your intestinal cells. So, in theory, this is not good for your gut. Well, it sounds bad, right? You don't want to unzip your gut cells. This sounds dangerous and very scary.

Kaylee

They are not jeans. No thank you. (Laughs)

Desiree

Especially zero chill for your immune system, because the vast majority of our body's immune system lies just under along the gut barrier surface. Now the immune system might be seeing stuff that's in the center of your gut that it's not used to seeing, maybe it's going to freak out. We see that gut barrier dysfunction. So, this unzipping is really a hallmark of autoimmune type diseases like celiac disease, but also chronic inflammatory concerns. The other thing that freaks people out is that the genes that predispose you to celiac disease, so that HLA-DQ2, and the DQ8, also predispose you to other autoimmune diseases, like rheumatoid arthritis, but only like 3% of the people that bear those genes actually get celiac disease. People will say if you have these genes, you should go gluten-free, because gluten is going to give you an autoimmune disease, but just having the genes, or even having another autoimmune issue, doesn't instantly mean no gluten. So, the most pervasive myths start in science. They start with these kernels, particularly observational, and laboratory science, and then they get completely twisted. In a logic, that makes sense to a lot of people but doesn't actually follow science. So, but it's harder to shift because people don't get why it's not scientific to think these things, right? Science is hard.

Kaylee

Preach.

Michael

It is hard. So where are we right now? Like in 2021? Now that we have all these gluten-free foods that are available for people that have celiac disease, that's amazing, but there's all these



myths that are out there that are causing problems for people that should be eating gluten. Where would you like to see things go with this gluten-free movement?

Desiree

I love the fact that the food is available. Particularly if we're talking about hyper processed foods, who cares if there's gluten, I really want people to eat wheat berries. I don't care if you eat white bread. Probably the most dangerous thing is the fear of food because that has very real physiological effects on our body. There's another dietician colleague who's forming this theory that the limbic system of the brain upon being exposed to fearful messages about food, for example gluten, can cause very real physiological immunological reactions upon ingesting that food. So, you know, that freaks me out a little bit. I think that if people aren't feeling well, the most important thing to do is not to start googling it. The first thing you do is you go to your doctor, and you describe exactly what's going on in your body, and you let that doctor do a thorough checkup. If you have any inkling that nutrition might be of benefit. Again, do not immediately google unless you go googling registered dietitians to go sit down, because it's our job. Dietitians are always honestly the last resort because they're like, "Oh, well, a dietitian will like ask me to change how I eat and stuff and that's annoying."

Kaylee

Truly.

Desiree

Right? I mean, like don't take away my chocolate bars which I will not do by the way,

Kaylee

Or my crackers. (Laughs)

Desiree

Or your crackers. The whole reason why health professionals are here is to interpret the science for you. We can find a single study to prove just about everything. That's true in most things, including nutrition, especially nutrition, but it's our job to say, "what does this study mean given that I have like 75 others that say this?" We do all of that in our head before we say, "Oh, hey, just eat wheat berries."

Michael

Well, let's transition to another one of these myths, another one of these words that I see when I'm googling, and doom scrolling, and I see words like thyroid and hyperthyroid, and I sort of know what's going on there, but it seems to be a lot of people are talking about it. What is thyroid in our bodies, and what is going on in the health community with it?

Desiree

The thyroid is a little butterfly shaped gland that's really important for your metabolism. You can almost think of it as like the thermostat of your body, you don't want it to go too fast, you don't want it to go too slow. It can mess with all sorts of other things, including your weight, regardless of how you eat, and it seems that a lot of people have very low thyroid function. There's a little bit of controversy around this because there's the standard medical cutoffs for what is normal thyroid function. Then there are people, particularly in the integrative and naturopathic community, who believe there's more of a subclinical low thyroid that can be impacting your health without sort of getting into that standard cut off. So, people



feel crummy, people feel lethargic, maybe people are gaining weight in an unexplained way, they don't understand what's going on. They might hear that their thyroid is low, or they might get a diagnosis of Hashimoto's, which again, is an autoimmune thyroid condition where the immune system starts attacking the thyroid, gets very confused and starts attacking the thyroid, which is really important for us, and it shouldn't be doing that. Most people will end up on thyroid medication. As soon as you get into this low thyroid, you get on the Google-matron, and you go, "oh, what should I eat?" You hear no soy, no gluten, like all the nos. That's when people start to get a little freaked out.

Kaylee

Yeah, that's totally understandable. Are there any things that you can eat to support your thyroid?

Desiree

Gluten is definitely not something that I would tell people to avoid. I think one of the reasons, that sort of kernel of evidence why people get scared about gluten, is that Hashimoto's disease is more common in people with celiac disease and vice versa because of that autoimmune condition. So, if anyone does get diagnosed with Hashimoto's, it's probably worthwhile for them to ask their Doc, "Hey, can we just screen for celiac disease?" Like let's put that gluten question on the table, and then clear it off if you don't have celiac disease. However, we immediately go to this evil gluten that's causing us to lose our thyroids, and we've been sprinkling this little pink salt all over our food, that could actually be the cause of our low thyroid. In the 20s, people noticed these goiter things around their neck. That happens when your thyroid isn't functioning. Why? Because you don't have iodine. So, iodine is natural for people who live near the coast, there's going to be more iodine in the atmosphere, there's going to be more iodine in the soils when we eat the food grown in those soils. If you live away from the coast, you're not eating seafood, you're not eating dairy products, you're not getting as much iodine naturally. In the 20s, here in Canada, we started putting iodine in our salt, and lo and behold, iodine deficiency goiter completely went away. Then 10 or 15 years ago, we started getting this idea into our head, particularly in like the wellness and health food sphere, which is where I'd been living for a while that somehow iodized salt is poison, because it's white, right? White stuff, always so bad. We started eating Himalayan Sea salt, and like French grey sea salt, essentially anything with a colour was somehow better. The trouble with that is that even in natural sea salts, because iodine is present, it sublimates out of sea salts very rapidly. It is unstable. You can't rely on natural sea salts as a source of iodine. Somehow, we're all walking around with thyroid issues, and no one's asking the question, "well, how is your iodine intake?" Because your thyroid requires iodine to function normally. One of the biggest things that I check on people who are adopting a plant-based diet is they are getting some form of iodine. I'm telling people and their jaw literally drops to the floor. Can you go buy some old, iodized salt? Like the cheap stuff and the little box that's like two dollars. The best two dollars you'll ever spend.

Michael

It lasts forever!

Desiree

Well not in my house, I really love salt. A half a teaspoon of iodized salt a day sprinkled amongst your cooking is going to give you all the iodine you need. That's really, really critical for your thyroid, and it's far more important, and no one cares about it. Like everyone's fawning over gluten and no one's actually caring about the fact that we are robbing our bodies of iodine on a regular basis.



Kaylee

Well, I know we did start this podcast by saying that there wasn't one fix to everything, like one fix for something, but as someone with thyroid issues in the family, I'm embracing my \$2 thing of salt that lives on the counter, and one teaspoon a day. That's what I just heard the doctor say. So that's what I'm doing. (Laughs) So we've been talking about myths, I'd love to transition a little bit to talk about another myth, and maybe one around protein. So, I spent about five years in my 20s eating a vegan diet. The number one question I got asked all the time was, but isn't your protein deficient? And maybe because I really enjoyed just eating meals that were popcorn with nutritional yeast on it. How much protein do we really need?

Desiree

I would definitely be on the popcorn with nutritional yeast train, and if anyone listening has never tried it, popcorn will never be the same as soon as you put nutritional yeast on. That's my nutritional yeast stan moment. It's interesting, because that is always the first question again, "Where do you get your protein if you're on a plant-based diet?", because we associate the word protein with meat. Instantly, those two things are equated, and that's not true because protein is a macronutrient found in many foods, including many plants. Our bare minimum protein needs are really small. So, the DRI recommendation is 0.36 grams of protein per pound of body weight. So, for a 175-pound person, this is about 63 grams a day, which sounds like a lot, but not only do most omnivores double that every single day, most vegetarians and even most vegans get more than that every single day without really trying. I typically like a little bit of a higher protein. Like if I'm counseling someone on a plant-based diet, I usually advocate for a slightly higher protein intake because the DRIs are typically formulated to avoid deficiency and meet bare minimum needs, and who in '21 is like "just let me do the bare minimum for my health." Protein is usually thought of in relation to muscles, which is great, I'm not that athletic so I don't really care about that stuff. But your immune system, and every cell in your body needs protein. So, I usually say, take your body weight in pounds, divide it by two, and that'll give you a rough approximation of how much protein you need. So, for a 175-pound person that's like 87.5 grams, not that I want people to count their grams, but to do it for a week or two, and just be like, "Oh, how much protein is in these chickpeas and how much protein is in this spread?" It just gives you an idea. All you need to do for plant-based foods is make sure you get some sort of plant protein on your plate at every meal. So that can be tofu, that can be tempeh, that can be chickpeas, you can get some hemp hearts on there. As long as you're thinking about one protein food, all the other foods are going to provide you with extra protein to get you to where you need.

Kaylee

What does DRI stand for?

Desiree

That's dietary reference intake. There are even some challenges around the Institute of Medicine in the US where they will go through and look at what is the research to tell us how much we need of a certain nutrient. Relatively recently they updated the DRIs for calcium and vitamin D. They didn't really do anything with calcium, but they raised vitamin D slightly because it was a very fancy nutrient a decade ago. So, they're like, "Oh look, maybe we should do something here". It's interesting because the way they formulate sometimes there actually isn't a lot of good evidence. Sometimes the evidence they're working on is very old, but the goal with them is always to get it to the point where their recommendation will meet the needs for 97.5% of the population. Which means it doesn't meet the needs of 100% of the population and it



overshoots the needs of a lot of people as well. This science unfortunately isn't perfect. That's why, particularly as a dietitian, I don't like people getting caught up in this "if it fits your macros" trend for bodybuilders to set their macros, which is just another sneaky form of calorie counting. I generally don't like people to count micro or macro nutrients. Instead, I want them to think about the actual foods they're eating. What fruits and vegetables are you eating? What whole grains are you eating? What protein rich foods are you eating? Because that's how we've survived millennia on this planet. Worrying about 50 milligrams of calcium here or there is just going to make you hate food, and hate taking care of yourself. If you don't know the exact calcium needs for you specifically, as a human being, it's not worth worrying about.

Kaylee

Now I know that you're the author of a book called Eat More Plants, but is there a difference in plant-based protein versus animal-based protein? I mean, I've been thinking a lot about this lately in terms of climate change, and how much of an impact farming practices and consumption of meat on a large scale have on the environment. So, what should we be thinking about when we're thinking about where we're getting our protein from?

Desiree

Yeah, and I love that you coached the question like that, because there's a lot of ways to answer it. There're some really traditional indicators of proteins in terms of protein quality, so things like Protein Digestibility, Corrected Amino Acid Score.

Kaylee

Classic.

Desiree

I know, classic, that PDCAS, or biological value, where we compare everything to an egg. There are all of these scores that have been assigned with laboratory science, this isn't based on the effect of these proteins on a human. Based on that I was taught in university that plant proteins are lower quality than animal protein. So as a dietitian, the first thing I was like, oh if we are eating plant proteins exclusively, we must have to do something, we must have to combine proteins on a plate to make sure there are no limiting amino acids, something that the science has completely refuted now. Because of course, everything we eat over the course of the day goes into this available amino acid pool in the body. And your body is actually smart enough to be like, "Oh, I'm just going to take the amino acids I need" as opposed to "Oh, no, those didn't come from the beans, they came for the brown rice. Therefore, I'm not going to make a liver cell out of those." (Laughs) So a lot of this was based on pretty old laboratory science, that doesn't necessarily apply to human beings. Some of them are also feeding laboratory animals, raw plant proteins, which I don't know if you've ever tried to chew on a raw chickpea.

Kaylee

Sure have. (Laughs)

Desiree

It's not super digestible, but if you cook that, which actual humans do, it's a completely different experience for the human body. We see now that old protein combining myth has been completely refuted by modern science. The science is also starting to poke holes in the idea that you can't build adequate muscle or fuel metabolism with plant proteins, in the same way that you can with animal proteins, and from an ecological perspective, and an energy efficiency



perspective. Even now, from a health perspective, the data is pretty clear that the more that we choose to eat plant-based proteins, the better it will be for our water usage, our energy efficiency, and absolutely our health as a whole.

Kaylee

Yeah, very cool. I love that you also talked a little bit about some of the other benefits to protein. One of the big things for me in the last year was I was seeing a naturopath around anxiety and something she suggested to me was like if you're feeling anxious in the morning, eat some protein. Now, I don't know if you're about to tell me that I am fully having a placebo effect, but I found that it made a huge difference for me.

Desiree

No, and it does. So, you know, it's interesting. We're pretty protein obsessed as a society, but when we skimp, we typically skimp in the morning. You know, it's a little Rice Krispies and a splash of skim milk culture that many of us grew up with watching Saturday morning cartoons. RIP, I just gave away my age. Like what's a Saturday morning cartoon, it's on YouTube all the time. (Laughs) One of the benefits of protein on just a meal-per-meal basis, is the fact that protein is one of the nutrients that slows down stomach emptying, and also slows down the rate at which carbohydrates and all nutrients are liberated from the gut and end up in the bloodstream. Particularly for people who feel anxious, erratic blood sugars can greatly exacerbate those sensations in the body. So having adequate protein in a meal, particularly in the morning because that is a time that we skimp, can help to set your blood sugars on an even keel, and make you feel a lot more even keeled.

Kaylee

Amazing I love that this was just confirmed. Now I've done my due diligence that I've talked to two different people. Protein in the morning for always and ever.

Michael

Well, speaking of due diligence Desiree, I switched to a plant-based diet many years ago mainly because it was my decision to do something for climate change and the environment. It was an easy decision for me but then along the way, I wanted to be a conscious eater, and I wanted to be excited about the foods that I was eating, which is where I discovered you. You are someone that gets excited about plants, you've written a book called *Eat More Plants*, and you're on the show [Urban Vegetarian](#). You're someone that I go to, to get excited about eating more plants, and your new podcast the Allsorts Podcast, which everyone should go listen to, we hear you with quite a different voice than I have in these other mediums because we hear you learning along with the listener from these guests that you have on. So, I'm wondering what you have learned as an educator now in this new podcast, the Allsorts Podcast?

Desiree

Yeah, such a good question. I really love doing the podcast, because I like having an excuse to ask all these really cool people to talk to me. I also love it because I'm not wearing a dietician hat. I had a conversation with a guest after one of the tapings and he was like "well it's funny because you know the answers to all these questions." I was like, "Yes, I do. But I really enjoy asking the questions anyways." It's really nice to put aside that dietician hat because there are so many conversations that I really want to have that oftentimes I don't feel like it's my role as a dietitian to have. I really want to talk about climate change, and I had [Maia Wikler](#) on who is an incredible voice for environmental justice. I want people to know that truly being well is a lot more than taking off grams of protein on your chronometer, which good god, I hope no one



uses. (Laughs) We get this idea that eating well is a certain thing, and being healthy is a certain thing, but it's so much more complex than that, because we exist within an environment that changes our moods, that stresses us out. Maybe we have clean air and water to drink, or maybe we don't have clean water to drink. All of these things impact our health. Early in my degree process, I remember taking a course called the social determinants of health, and it was a second-year course, before you get into the nitty gritty of clinical nutrition and they showed unequivocally that income disparity is one of the most important determinants of health. Countries where there's huge income disparity tend to have poor health outcomes than countries that have more of a social safety net. That just really stuck with me that we exist within this web, and all of this is having an impact on our health. I love learning more about things that I don't really know a lot about. I also love creating a space for people where it's fun to learn about taking care of yourself, because I think the internet has ruined wellness. You know, it's another place for fear-based capitalism when it's really supposed to be about being our healthiest and happiest self. So, I'm just trying to carve out a little bit more of a space for people where they can feel good learning about this stuff.

Michael

Well, we certainly love learning along with you in the new podcast. Kaylee, do you know who else loves learning?

Kaylee

Is it the nerd herd?

Michael

You got it! (Music) All right if you want to get in on the nerd herd questions, we post them on our social media @NerdNiteYVR on Instagram, Twitter, and Facebook. Our first one comes in from Coral who asks, "There seems to be a lot of buzz around how gut health relates to mental health since so much serotonin is produced in the gut, but it doesn't seem to cross the blood brain barrier." Desiree, what is going on here?

Desiree

Oh my gosh. Okay, this is literally my favorite topic. You know, it's really fascinating and with most things in nutrition, Science, we have all of this theoretical science why, and very little actionable science on what to do with that theory, and that's really where we are right now. We see things like gut barrier dysfunction, that you know unzipping of the gut cells, potentially allowing fragments of bacteria into circulation. Maybe those bacteria are accumulating in places like your brain, and inflammation is contributing to depression. We see that certain patterns of your gut microbiome are associated with anxiety, depression, or other chronic diseases. So, we see that there is enormous potential not only for the integrity of the gut barrier, but also for the gazillions of microbes living in the dark recesses of your colon to have a massive impact on pretty much all forms of your health, but also your mental health. The gut is so cool, because we don't talk a lot about the nervous system in the gut. That question about the serotonin, because the vast majority, 90 to 95% of all of the serotonin in your body is produced in the gut, in these enterochromaffin cells in the gut. If you get food poisoning, your gut is supposed to go one way, right? You're supposed to chew the food, swallow it, your gut carries it down, has its way with it, and then everything else goes out into the toilet bowl. It's not supposed to go back up. But if you get a really gnarly form of food poisoning, maybe we got a little norovirus, it is the immune system interacting with the nervous system in the gut that shoots out all of this serotonin from the enterochromaffin cells that causes you to spew out both



ends. Serotonin is really important for the motility of your gut. For people with irritable bowel syndrome, for example, there is some thought that there is too much serotonin happening in the guts of people with diarrhea, predominant IBS, which is why there is this excessive motility. So maybe it doesn't cross the blood brain barrier, maybe we will discover that it's having an impact regardless, because we do know that physical and physiological states in the gut do seem to be having a very real effect on mental health. We just have a lot of "how the heck this is happening," but then more importantly, what do we do about it? You know what you don't do about it? You don't go and take a probiotic that claims to fix your anxiety, because there is definitely no product on the market that does that, but that's sort of the sticky area we're getting into.

Kaylee

Here's an existential question because we're talking about the microbiome. Do you think that we, as humans, have free will? I often feel like I don't, and that it's my microbes that determine everything. (Laughs)

Desiree

Except if, we don't feed those bacteria what they want, those bacteria actually could be determining a lot. They could be contributing to cravings, for example, because it behooves them to try and sustain themselves and for you to eat what they want. That's kind of weird science. But no, I think ultimately, we feed them so we can change what we eat, and it has been shown that by doing so we can change our gut bacteria. I would say they have firm pressure in terms of how our bodies work. Ultimately, we get to decide.

Kaylee

Yeah, we decide who lives who dies. I love it.

Michael

We should ask every one of our guests regardless of their specialty if they believe in free will or not.

Desiree

Just keep it light.

Kaylee

We have one other question from our nerd herd. This one's from Jasmine who asks, "What should you be eating if you have a genetic insulin resistance?"

Desiree

If you have a genetic insulin resistance, your nutrition will be the same as if it was more lifestyle induced and not genetic, but the outcome may not be the same. So, it's always really important to make these nutritional changes and be really in collaboration and communication with your doc because sometimes you really just need medications to help support you. This sort of plays into the whole diet myth theme, because keto is a huge internet trend that I really hope dies. But it is an interesting therapeutic tool for a very tiny portion of people, and it's taught us a new way of thinking about how we view carbohydrates in the diet, particularly from a therapeutic standpoint because I remember being taught in internship that carbohydrates in fruits, vegetables, whole grains, you know, and the like are essential. That, even when someone has frank insulin resistance, so you increase the blood sugars, the body will put out the insulin, but if the tissues resist the insulin, your cells are not taking up that sugar,



and again more insulin comes out, it's just the cycle, right? Like, if the sugar doesn't come down, more insulin goes out, if the sugar doesn't come down, more insulin goes out. Eventually, your tissues get real tired of listening to the insulin, it's sort of like a key and a lock that just wears down over time. I really didn't like the idea that even if someone had frank insulin resistance, or Type Two Diabetes, that we kept pushing a certain minimum amount of carbohydrates on them. Obviously, if their blood sugars are not doing well, the idea is not to treat diabetes like it's a medication deficiency. Why don't we think about what their tolerance for carbohydrates is? That's really something that's talked about and the keto scientific community, and I appreciate that, because I think that, especially in diabetes, you can test your sugars, we have glucose monitors. So, we can get really cool instant feedback, like scientific feedback on our own bodies. Like when I eat this meal, this much brown rice, this many chickpeas, this many French fries, this is how my blood sugar will respond. So, I'm going to shrink down the French fries and see what happens. Oh, my blood sugar has actually responded pretty well to that, dammit, French fries is the problem. So, I think it's really important if someone has insulin resistance to be really curious about the way that their meals are impacting them. Then we can use this really basic physiological knowledge that if you eat more protein, if you eat more fiber, if you eat a little bit of healthy fat at a meal, that will slow down stomach emptying that will also slow the rate at which your blood sugars rise, and that's a really good thing. All that science comes down to this super boring dietitian advice, which is to use "the plate method", make half your plate colorful vegetables, put a protein on a quarter of your plate, and if you tolerate it up to a quarter of your plate in a whole grain. It's so simple, and people are like, that's boring advice. That doesn't work, but if you actually follow it, it works. It is so powerful. So yes, insulin resistance, more fiber, more plants, get some protein on your plate, and then adjust as you get more information.

Michael

I think what you're saying Desiree is that we should all go back and adopt the TV dinner dish so that we can have all the separate portions. So that we can get exactly the right amounts that our cool dietitian is telling us to get right?

Desiree

Oh my gosh, and you can totally buy plates like that.

Kaylee

A dietician meal service. Oh my gosh, Desiree Nielsen Fresh Prep.

Desiree

Oh my gosh, I massively heart Fresh Prep. Anytime I make it my kids are like "this is the best thing you've ever made mom", and I write cookbooks for a living. I think it doesn't have to be as measured, it doesn't have to be perfect. There's no such thing as perfect as 100% of the time, but if you get this concept if you're making a pasta, and you maybe shrink down your pasta a little bit and like up your vegetables a bit more like that's always going to get you in that ratio, and it's a really healthy place to be.

Michael

Oh, wow, this is so fun. Should we nerd out some more?

Kaylee

Please. (Music)



Michael

All right, if you want to get in on the nerd outs, we post them on our social media, Instagram, Twitter, and Facebook. Our first one comes in from Ashley who is nerding out about Dr. Gabor Mate and his latest research on trauma and mental health. Desiree, have you ever read or seen any videos from Dr. Mate?

Desiree

You know I have never read Dr. Mate books. I'm going to embarrassingly admit that in front of everybody, but I am familiar with his work yes.

Michael

He's so cool. Desiree what have you been nerding out about recently?

Desiree

I am very obsessed with Mr. Robot. I'm currently one episode away from finishing the whole dang thing and I can hardly stand it.

Kaylee

Is that on the docket for tonight? After you log-off from here, you're going to go finish it?

Desiree

Absolutely. That's exactly what I'm going to do.

Michael

Do you find that you see Rami Malek in this different light now, because he's in a lot of new things. He's in the new James Bond movie that I'm really excited about. He's just so captivating.

Desiree

He's incredible. He will always be Elliot Alderson to me no matter what. I mean. I've seen more of his work, but he's always Elliot Alderson. I'm like, but you're the troubled hacker who's going to save us all. I don't know what it is about me, but I really love dystopian stories. I'm not a super hardcore science fiction nerd. I feel like I would get into it more if I knew where to start and the authors to dive into, but anything that's dystopian at all. I think it's probably because part of me feels like we're already living in dystopia. That's why this show is so interesting because it really is this dystopian view of now. This genius hacker is trying to take down the evil E Corp, who somehow essentially owns all of our banking and all of our media and all of our technology. That's so much what we're living in today that I'm low key fearful and skeptical of. I think it's just watching it play out on the TV screen that helps soothe me that someone else is taking care of those thoughts right now.

Kaylee

Every once in a while, I seriously have to check in and make sure that I'm not in The Matrix. You know what I mean? Like, check for a cord or something.

Desiree

Honestly, the last few years have really made me question whether this is all a simulation.

Kaylee

So, what about you, Michael, what have you been nerding out about?



Michael

Well, I've been nerding out about Orange Shirt Day, recently it was Orange Shirt Day, which for the first year has been recognized as Canada's Day of Truth and Reconciliation, much long overdue. So, on that day on the Space Centre's YouTube show Ask an Astronomer we gave our show over to Dr. Eldon Yellowhorn of the Piikani Nation who is an archaeologist and professor of Indigenous Studies at SFU. One thing that he's also passionate about is something called archeoastronomy, which I had never heard of before. It's taking the study of cultures through the lens of their astronomy, and in many cases Indigenous people in North America, it's their stories of the night time sky that not only do we learn about the people, but we also have this record of what was happening in our galaxy long before it was really being studied. My main take away is there are so many rich, and interesting Indigenous stories of the sky, yet we classically hold on to this Greek and Roman mythology, which don't get me wrong, I love me some multiple headed snakes, but these stories are fraught with violence, and misogyny. Like oh look there's Cassiopeia hanging upside down in shame because she was jealous of her daughter Andromeda who was prettier than her. Uh what? So I encourage everyone to go check out our [Ask an Astronomer](#) on the Space Centre's YouTube page on Truth and Reconciliation Day to hear Eldon Yellowhorn. He's also an author and has a new book coming out in the Spring of 2022 all about archeoastronomy, but he's got a couple that you can get right now "[Turtle Island: The Story of North America's First People](#)", and "[What the Eagle Sees: Indigenous Stories of Rebellion and Renewal](#)" Super cool stuff. Kaylee, what have you been learning and nerding about?

Kaylee

I really wanted to be on theme for today's episode. So, I want to hype a favorite podcast of mine really hard. Desiree, have you listened to a little podcast called [Maintenance Phase](#)?

Desiree

I love maintenance phase.

Kaylee

I'm obsessed with it. What do you like about it?

Desiree

You know, as a dietician, one of my favorite things is listening to non-dieticians talk about food and bodies and diet culture and I'm ready to burn it all down. So, I really love their perspective on all of this.

Kaylee

Oh, they're going to burn it down. So, for folks who don't know Maintenance Phase is a podcast all about the diet industry and dives into the harms of diet culture, both for our health and society, and how diets and fads are frequently born from so-so science or no science at all. So, we've talked about that today and part of that is that science is really complex. The hosts are Aubrey Gordon, also known as [@YrFatFriend](#) on the socials and Michael Hobbs and they're delightful-funny-smart-sarcastic-going-to-burn-it-all-down-people. Each episode they dive into a different topic from where the Body Mass Index came from, and why the heck we still use it, to keto diets. There's an episode about Weight Watchers that resonated with me particularly strongly because it almost exactly mirrored my experience with obsessive calorie counting and diet restriction in my early and mid-20s. So that was kind of like "oh, wow, okay, that's what was happening." While that one really hit me close to home my favorite episode so far, if you like nutrition, and you like science, was a story about a nutrition scandal, where



a really well-known food science lab in the United States was found to have been publishing papers with significant statistical inconsistencies. Now that's not just interesting if you're a data nerd, but it's also really interesting because those studies were actually used to inform nutritional guidelines for school programs in the US, and how it all came tumbling down. So highly recommend that episode about [P-Hacking](#). Anyway, I highly recommend the podcast, it's incredibly researched, and very engaging. Mostly I've just got my fingers crossed that either Aubrey or Michael will hear this and want to be on the podcast or be my friend.

Michael

Be our friend. That's really our goal with this podcast we just want to hang out with people that we like, because we can't right now, and we used to have a night where we did that, we will soon. Desiree, thank you so much for coming and nerding out with us. It was delightful. I've learned so much about unzipping and zipping, that's happening inside of my gut. It seems intriguing and also frightening but where can people learn more about you, your book, your podcast, your TV show, all the things you do?

Desiree

All of the things. I just can't do one thing. I would probably be more successful if I could just stick to one, but you know I get bored, so my website is www.desireerd.com and then I'm on Instagram begrudgingly [@desireenielsenrd](#). Then of course the most fun thing is the podcast. So, the Allsorts Podcast which you can find on all of the places

Kaylee

Well, you might be begrudgingly on the socials, but I'm so glad that you are on Instagram because I get fun meal ideas, and I get to learn more about fun diet things. So, thank you for being in that space, even if you don't want to be there. Thank you so much for hanging out with us, and thanks to everybody for listening. If you want to hear more from us, you can follow us over on our socials @NerdNiteYVR while we are on Twitter, Instagram, and Facebook. We're now a three-person team so I get to add a little thing at the end here. This episode was hosted and produced by us and edited by me and edited and audio engineered by Elise Lane. We'll be back in a couple of weeks but until we meet again, get some protein on your plate.

Transcribed in part by Otter.ai