Introduction to Diabetes and Cancer

Hey, it's Nathan Crane, director of the Health and Healing Club and host of the Conquering Cancers Summit. And today, I am honored and excited to welcome you to a very special interview.

Today, we are talking with Cyrus Campbell, who is the co-founder of Mastering Diabetes, about everything you need to know about diabetes and cancer. I know that it's a big promise.

We're going to try and cover as much as we possibly can about diabetes and cancer in this interview. Cyrus is definitely qualified to be speaking on this subject, specifically as the co-founder of Mastering diabetes.org.

He has been working with thousands of people with diabetes and helping them understand how to, prevent reverse this disease. And, there are so many correlations between diabetes and cancer.

There are some important things you need to understand, whether you have diabetes or you have cancer, or you have both one or the other. Both. Those are a lot of things we're going to talk about in this interview.

Cyrus Campbell and Robbie, Barbara are the team behind Mastering diabetes.org, which is an online coaching platform for people living with all forms of diabetes that focus on low fat, plant based, whole food nutrition.

Cyrus has a degree in mechanical engineering from Stanford University, as well as a PhD in nutritional biochemistry from UC Berkeley, and he's personally been living with type one diabetes since 2002.

So not only does he understand the research, the science, and get to work with thousands of people hands on who have diabetes, but he's been living with this himself.

So he is his, you know, best advocate for helping people with diabetes. Cyrus, thanks so much for being here, brother. Thanks a ton. Nathan, that was a that was a a great intro.

And I was like, you know what? I'll just see you guys later. And it looks like he sort of is like, yeah, you know, cancer. Yes. I, you know, last eight years dedicated researching and understanding cancer.

What causes it, how we prevent it, how we reverse it. You know, I've done hundreds of interviews with world leading experts. I better understand something about cancer. Diabetes.

I am like, you know, I'm still in third grade. Like I'm learning from you guys and what you're doing. But I know that there are some commonalities in terms of causation as well as, you know, what, what we can do diet wise and lifestyle wise.

And that's what I think. You know, you guys bring a ton of value to the space. Bringing just bringing forth a ton of education, practical steps for people.

So, I just want to dive right in. Why? Why are diabetes and cancer so closely linked? And, you know, what do people need to be concerned about if they have one or both of these diseases?

How Insulin Resistance Links Diet to Disease

Yeah, it's a great question. So when I was doing my, graduate degree at UC Berkeley and I was studying towards a PhD for five years, it's a great opportunity to be able to, like, really deep dive into, you know, some aspect of human biology that interests you.

So I was given the task while I was there to understand what causes diabetes and how do you reverse diabetes. When I say diabetes, I'm saying in this context, I'm saying prediabetes and type two diabetes.

So how can you create it and how can you reverse it using, non-pharmaceutical medications using natural strategies. Right. And then, in addition to that, I'm living with type one diabetes, like you said.

I got to learn a lot about what causes type one diabetes, which is an autoimmune reaction which is different than type two. But in that process, in discovering, you know, all the things that create the diabetic situation and the things that can either help you manage or reverse diabetes, you cannot study diabetes without cancer, without understanding cancer.

The two of them are so inexplicably linked together with each other that it's hard to talk about one without talking about the other, right? And, once I learned that, it really started to create like a more holistic understanding of human biology as a whole, because I think a lot of people think of diseases as being very, you know, isolated.

It's like cancer is different than diabetes, and diabetes is different than osteoporosis, and osteoporosis is different than heart disease and which is different than Alzheimer's disease.

But if you really take a step backwards and take a look at human disease and inflammation in general, what you'll find is that a chronic inflammatory state is actually the root cause of many chronic diseases that we live with today, whether it's heart disease, cancer, diabetes, you name it.

Right. So the way that I like to think about cancer and, you know, sorry, the way I like to think about chronic disease in general is that chronic disease starts with a chronic inflammatory state.

Period. End of story. So if you develop a chronic inflammatory state, then your risk for all chronic diseases, including cancer, including diabetes, including heart disease, go up dramatically.

So the question really becomes, well, what causes a chronic inflammatory state? What is it that you do? What is it that you eat? What is it that you that you're, exposing yourself to on a daily basis that can create a chronic inflammatory inflammatory state?

So as I delve deeper into the subject, what I began to learn is that diabetes itself, it's very tightly connected to cancer, but diabetes is actually caused by something else.

And that there's something else that diabetes is caused by is this thing called insulin resistance. So I'm sure you've probably heard the term insulin resistance before, right? Yep.

So in the world of, you know, in the blogosphere and on social media and all over the internet, you know, the term insulin resistance, is, is widely described, but the actual understanding of what it truly is is highly, highly conflicted.

Okay. And in today's world, unfortunately, there's sort of like two, you know, sides of the equation. You have the plant based world saying one message, and then you have the animal based world or the, the, the low carbohydrate ketogenic world saying a completely opposite story.

And it's confusing because people in the middle are like, wait, what am I supposed to do? I believe you, do I believe you? I don't really know what to think. Right?

So insulin resistance is generally considered to be the, the cause of prediabetes and type two diabetes. In other words, you cannot develop prediabetes or type two diabetes without first becoming insulin resistance.

So it's a it's a necessary prerequisite. Okay. So the question is will define what causes insulin resistance okay. So if you delve into the research and you really go deep and you try and figure out well what causes that resistance.

The answer in the medical literature just comes out at you pretty quickly. So that's not hard to find. The first time I

got insight into this is because when my advisor in graduate school, his name was Mark Hellerstein, he said, he said, I'm going to give you this project where you're going to induce insulin resistance in laboratory animals, and then you're going to reverse.

You're going to rescue their insulin resistance using either dietary strategies or exercise. And I was like, okay, great. Sounds good. So I'm thinking to myself, right, I'm going to go create insulin resistance inside of these animals.

What am I going to do? The first thing that I thought of was I'm going to feed them sugar. I'm going to feed them fructose. I'm going to create some type of like sugar sweetened beverage, and I'm going to feed it to them, and then they're going to become fat.

And as a result of that, they're going to develop diabetes. Right. I started looking in the research to try and find out what how do other researchers create insulin resistance in laboratory animals and one paper after another after another after another.

They weren't talking about sugar. They were not talking about sugar. They were talking about saturated fat. Okay. We developed insulin resistance in, You know what I called c57bl six mice, by feeding them a diet high in saturated fat.

For eight weeks, we developed insulin resistance and diabetes in laboratory rats by feeding them a diet high in saturated fat for 12 weeks. And I kept on seeing this over and over and over again.

And I was like, wait a minute, you're creating diabetes by feeding animals saturated fat? That doesn't make any sense. But then when I delve deeper and deeper and deeper, it began to actually make a lot of sense.

Okay, so the question you asked is like, what? What's the connection between diabetes and cancer? And what I'm going to do is explain insulin resistance first, and then we're going to go into why that relates to cancer.

Okay. So when you eat food that is rich in saturated fat, okay. Foods that are rich in saturated fat include, generally speaking, animal based foods, meat, right.

Red meat. White meat, chicken, fish. Poultry. Shellfish. Eggs, dairy products. Okay. When you consume these foods that are rich in saturated fat, what ends up happening is that the fat goes inside of your mouth, it travels down your esophagus, and it gets inside of your stomach.

Okay. Inside of your stomach, you have stomach enzymes. There are gastric enzymes that are there to try and like, just try to sort of start to sort of unfold a lot of the protein that's present in the food and start to partially digest the food that you're eating.

The food is then transferred from your stomach and it goes into your small intestine once inside of your small intestine. Thank you for your small intestine is basically being like a it's like an enzymatic reactor.

It's a bioreactor. And inside of there, I mean, there are just a whole collection of digestive enzymes which are just put on the food that you're eating, otherwise known as chyme, which is partially digested food.

And the purpose of those enzymes is to try and break down or digest that food. So your liver, your pancreas and your small intestine manufacturer carbohydrates is otherwise known as carbohydrate breakdown proteins.

Protein acids which are protein breakdown enzymes. And then also light pieces which are fat breakdown enzymes. Okay. So you have all of these digestive enzymes which are working on the food to try and unfold it.

And it's trying to start to cut it up. And in the process, the fatty acids are actually absorbed through the walls of your small intestine. And they're put into these particles known as kilo microns.

So these kind of microns are basically they circulate through your blood. And their purpose is to go deliver these fatty acids to tissues that require them.

So here's where the story gets actually pretty interesting. If the fatty acids from these kilo micron particles went into your adipose tissue or your fat tissue, and they went only there, then there really wouldn't be too much of a problem.

Diabetes wouldn't really be that big of an issue. Insulin resistance wouldn't be that big of a tissue issue, and cancer would be a little bit less problematic than it is in the world today.

Okay. So the problem is that these fatty acids sure, they go into your adipose tissue, which is your fat tissue. It's in your butt, in your thighs, in your abdomen, in your armpits, in your neck.

It's all over the place. But in addition to that, these fatty acid molecules, they also get inside of your liver. And they also get inside of your muscle.

So you can think of it as like a spillover, okay. Most of them go to your adipose tissue. Then the spillover goes to your liver and your muscle okay fine.

Is that a problem? The answer is yes. It's a problem because your liver and your muscle are specifically designed to be able to uptake and either store or uptake and burn small amounts, small amounts of fatty acids.

But when you're eating a diet that's relatively high in fat, especially saturated fat, then your liver and muscle become overwhelmed relatively quickly, and in a short period of time, they end up accumulating an excess quantity of these fatty acid molecules.

So they end up developing what's known as intra hepatic triglyceride IHT. Okay. And in addition to that, your muscle ends up, creating, state of intra myo cellular lipid.

Imco don't worry about those words. In other words, fatty acids are stored in excess inside of your liver and muscle.

Reversing Type 2 Diabetes with a Plant-Based Diet

Now, the very next thing that happens in this, in this long sequence of events, is that you consume fat rich foods. You end up with fatty acid spill over in your liver muscle.

Then the next time you try and eat something carbohydrate rich, whether it's a cookie, cracker, chips, soda, you know, packaged food, or whether it's a banana or a plate of beans or some quinoa that comes from whole sources, regardless of the type of diabetes, the type of, carbohydrate you consume, the glucose from those carbohydrate molecules tries to get inside of your muscle and tries to get inside of your liver exactly where it's designed to go in order to get there.

Insulin goes. Knock, knock. Hey, liver. There's some glucose in the blood. You want to take it up? Knock, knock. Hey, muscle. There's some glucose in the blood. Do you want to take it up?

Under normal circumstances, both your liver and muscle would say, sure. Great. I'll take it. But what happens in the insulin resistant state is that your liver and muscle say, sorry, I'm not open for business right now.

I got too much stuff inside of me. I can't handle this right now. Go away. So insulin becomes less effective, insulin signaling goes down. And as a result of that, now glucose and insulin are trapped inside of your blood.

Okay. So this creates what's known as a hyperinsulinemia state meaning excess insulin in your blood and a hypoglycemic state, which means excess glucose in your blood simultaneously.

Both of those happen because insulin can't do its job and glucose gets trapped. And as a result of that, you end up

with hyperinsulinemia and hypoglycemia at the same time.

So people with diabetes, they go, okay, great. I've been eating this low carbohydrate thing. I ate, you know, some saturated fat from chicken. Or maybe I had an avocado and I tried to lower my carbohydrate intake.

And then two hours later, the training a banana and the glucose goes through the roof. That happens every single time. So here's the problem. Okay. The conclusion to my story here is that hyperinsulinemia excess insulin in your blood creates a chronic inflammatory state that accelerates the development of many types of cancers.

Okay. So chronic hyperinsulinemia and the development of tumors and the development of cancer in multiple tissues go hand-in-hand with each other. So when you develop hyperinsulinemia because of insulin resistance, then your risk for developing cancer in multiple tissues goes up.

And that's why the two of these, chronic diseases cannot be split apart from each other. Okay? The two of them go hand in hand with each other, and it's the it's not insulin that causes the problem.

It's excess insulin. It's the need for your pancreas to have to make more and more and more insulin over the course of time, because your liver and muscles are insulin resistant, because you overconsume saturated fat that is what accelerates the, the, the the chances of developing of creating a tumor and have that tumor metastasizing over the course of time, developing a, you know, a cancerous state that can eventually become problematic and even fatal.

So that makes sense. Yeah, it makes perfect sense. I mean, one of the things that that is very clear in the literature is just as you said, you know, chronic inflammation free states within the body are one of the direct causes of cancer.

And so the more chronically inflamed you are and the longer that you have that chronic inflammation, the more likely you are to have a cancer diagnosis.

So so that makes a lot of sense with saturated fat. Now I have a question in regards to the diabetic state. So if you're if that's the case, and you're saying this is causation of type two diabetes, not necessarily type one.

Correct. That's exactly right. Okay. So for type two, if that's the case you remove saturated fats out of your diet. You clean up your diet. In theory, diabetes should just go away.

All right. That's a great question. It's a great question. So, the answer is yes in most situations. Okay. So it would I would love to be able to say, all right, Nathan, give me 100 people living with type two diabetes or 100 people living with prediabetes and stick them into a room.

And I'm going to go feed them a diet that is not devoid of saturated fat, because that's not even possible, but a diet that just tends to be much lower in saturated fat.

And also in addition to that, extremely high in plant material that has whole carbohydrate energy. Okay, it's not enough to just reduce saturated fat.

I'm talking about reducing saturated fat and substituting the foods that, that that are high in saturated fat with whole plant foods. Okay. When you do that, what I refer to as the simple switch lowering fat and increasing carbohydrate intake at the same time from Whole Foods, of those 100 people that we have in a room, statistically speaking, we can reverse diabetes type two diabetes in 80 to 90% of all of them.

So it's going to be it's a huge that's huge. Yeah I mean 80 to 90% is massive. Yeah it's massive right. So this is not a one size fits all prescription by any means.

What about those other 10 to 20% right. What happens to them. Why can you not reverse diabetes in them. And the answer is over the course of time they have developed a such a chronic state of hyperinsulinemia that the beta cells in their pancreas have been manufacturing excess insulin over the course of time.

Over the years, five years, ten years, 15 years, 20. So you're asking the beta cells in your pancreas to make excess insulin every single meal, every single day over the course of many years.

And as a result of that, the beta cells undergo, irreversible death. Okay. It's this process called a pertussis or programed cell death. And when that happens, the beta cell population, which is not very large to begin with, inside of your pancreas, I mean, we're talking 1% of your pancreas.

It's very small. When this 1% of the cells in your side of your pancreas gets 2.5 of a percent, 0.3%, and it gets very small, then all of a sudden your ability to manufacture insulin just goes way down, right?

So for those individuals, what they will benefit from is yes, doing this simple switch, lowering saturated fat, increasing plant material and also injecting insulin.

But for the other 80 to 90% of all people, doing the simple switch will enable them to get completely free of diabetes and erase it from their medical record.

Right. But again, we're talking about cancer, okay? We're not not necessarily talking about diabetes. So why does that happen? The reason that happens is because again, let's go back to the insulin resistance story.

And so resistance is caused by the excess accumulation of saturated fat. Right. So the saturated fat that used to be in the chicken, the burgers, the turkey, the olive oil and the dairy products that you were consuming and now is present in much smaller quantities, is now being replaced by plant material that's low in saturated fat.

So the saturated fat that used to be, accumulating in excess inside of your liver and muscle goes from being a large amount and problematic to a very small amount and physiologically normal.

That's exactly what your liver muscles are supposed to do in that situation. Insulin can do its job. So you go eat something carbohydrate rich a plate of black beans, a bowl of quinoa, some brown rice, and all of a sudden the glucose from those foods can now easily get inside of your liver and muscle exactly where it belongs.

Because every time that insulin goes, hey, knock, knock, do you want this glucose? I can, every time that that insulin says knock, knock. Hey, do you want this glucose, your liver and muscle respond by saying, sure, sounds good.

Give it to me. And they open their doors and they allow the glucose to come in exactly the way that you're sort of biological systems are designed to operate.

Right. So the trick is reduce insulin resistance, reverse insulin resistance, which lowers your risk for prediabetes and type two. And as a ancillary benefit, you reduce the amount of insulin present inside of your blood, okay, reducing the amount of insulin it presents out of your blood from a chronic.

Hyperinsulinemia state to a normal physiological state is necessary and required because in that situation, excess insulin, what it's doing is it's a potent growth signal.

It's the single most powerful anabolic hormone in your body, period. End of story. There is no other hormone in your body. Testosterone growth hormone, IGF one, you name it.

These are all potent, potent growth factors. But insulin is the most powerful of all of them. And what that means is that when insulin is present inside of your blood, insulin stimulates more fuel uptake and more growth and storage of fuel than any other, than any other hormone in your body.

Okay. So if you have the most powerful anabolic hormone present in your blood in excess quantities, what ends up happening is that it puts tissues all around your body into a chronic, overstimulation of growth.

Right. And that's not a good thing, because when tissues replicate at a slightly faster rate than they're designed to

replicate that, that's when the chances of developing a tumor inside of those tissues goes up.

Okay, so a simple way to think about this whole process is that, cells have a turnover rate, okay. Cells in different tissues have, a different lifespan.

Okay. Cells inside of your brain are designed to be present in your brain and have a very long lifespan of years. Cells in side of the lining of your stomach have a lifespan of days.

Cells and the light, the lining of your small intestine have a lifespan of about 24 days. Cells inside of your liver have a lifespan of four months. Cells inside of your muscle have a lifespan of 8 to 9 months.

Okay, so depending on where the cell is located, that's one of the indicators of how long it's supposed to live for. Okay.

Why Excess Insulin Raises Cancer Risk

So suppose you take your liver which you know average turnover about four months per cell. And you you expose that liver to a high insulin environment.

What ends up happening is that instead of those cells being alive for four months, what ends up happening is that they actually replicate themselves just a little bit faster than they're supposed to.

Okay, so before that four month cutoff happens, they replicate themselves at three and a half months, right. Because they're exposed to growth signals and they're like, oh, okay, cool.

I'm supposed to grow. I'm supposed to grow wiser. So much insulin in the blood that's telling me that I'm supposed to replicate myself and create a new daughter cell.

Okay, so that's what they do, is they start replicating too soon. And as a result of that, in the replication process, there are DNA errors that happen.

There's DNA errors. It's just part of the normal physiological biological process. And if there's DNA errors are propagating at a faster rate than they're supposed to, then it overwhelms the DNA repair machinery inside of those cells.

So normally they're supposed to, you know, replicate with small amounts of errors. And those errors can get fixed. But if you're replicating at a faster rate, it's harder and harder and harder to fix those DNA replication errors, which eventually can lead to a collection of cells that have so many errors in them that they become what are called oncogene oncogenic.

And as a result of that, they do end up developing tumors because they stop paying attention to the outside environment, and then they almost have a mind of their own.

They metastasize inside of tumors, and then it becomes, you know, a cancer diagnosis, right? The whole process starts with hyperinsulinemia not always, but hyperinsulinemia is definitely going to accelerate.

The rate at which this DNA replication machinery is, is, is active. And as a result of that, it dramatically increases the rate at which tissues are multiplying, which increases the risk for developing tumors.

So it's making sense. You know, I love, what you said, you know, a few minutes ago, which was a lot of people think of all these chronic diseases as different diseases with different causes.

And the reality is, and you and you mentioned this, is that, most chronic diseases have very similar causes, if not the exact same causes. Right. And they're all directly associated with chronic inflammation.

Chronic inflammation literally can be a cause for cancer. It's not the only cause, but many things cause chronic inflammation like saturated fat. Too much saturated fat in your diet, like, too much exposure to toxins, like too much stress and anxiety in the body.

Like, too much exposure to, you know, Wi-Fi. There's a lot of it. Too much, VOCs coming from the carpet, destroying the DNA inside your body and causing the cells to mutate and turn cancerous, so on and so forth.

A lot of causes, right? But they all lead to chronic inflammation and chronic inflammation. If you're not, doing things that are aren't naturally anti inflammatory in the body, well, you are going to end up with something, unfortunate like cancer.

But along the road you'll often see heart disease, obesity, like you're talking about diabetes, other chronic diseases that are stemming off of those same causes.

Right. So it's all correlated. What's beautiful about all this is that the same or similar lifestyle choices and dietary recommendations that you're talking about are the same solutions, natural solutions for most cancers, right.

One of the things I interviewed, Doctor Thomas Lodi, is an integrative medical doctor. I highly encourage everyone to go listen to that interview after this one.

He talks in a lot of depth around this, but one of the things he says, it's a really controversial statement, but it makes perfect sense. And, you know, he has decades in the field working with thousands of cancer patients and he says, you know, people think, this kind of cancer is different from this kind of cancer.

You know, my I have blood cancer, I have leukemia, I have tumor, I have this, I have that. He says cancer is cancers. Cancer, they're all the same. Doesn't matter if it's the rarest cancer in the world, if it's, you know, it's they have the same causes and they treat when he treats patients, they're treating them the same way.

They're looking at lifestyle factors and diet and nutrition and, you know, mindset and, you know, supplementation and chronic inflammation and all these different factors that can lead to a cancer diagnosis, or they can help somebody, potentially reverse cancer or at least live with cancer with very few symptoms for a long time, which is also a great goal.

You know, if you have cancer, it's not guaranteed you're going to reverse it. But if you have, a good set of, principles that you're following and I want you to share more about, you know, mastering diabetes and the mastering Diabetes method, because what you guys recommend people and help people in reversing their diabetes are very pretty much the same thing that are recommended with people with cancer.

I want to mention then I'll I'll bring it back to you. I noticed the doctor, Joel Furman, who's a medical doctor, endorsed your guys's book, Mastering Diet.

And he's also a part of that symposium, and he is the. You know, 15 years in the field of natural health, studying myself, studying, researching, and experimenting with diet and nutrition, lifestyle meditation.

You know, healing, disease, you name it. And he is the man I go to every time when I want to learn about nutrition and diet because, he knows his stuff.

You know, better than than most people I've ever met out there. And the fact that he's endorsing your guys's book is massive and here we go into a lot of depth about the best anti-cancer diet in that interview.

So go listen to that after this as well. But, you know, I just wanted to mention that that somebody like Doctor Joe Furman is a medical doctor who works with thousands of patients, helping them, you know, change their diet and lifestyle, reverse all kinds of chronic diseases, is endorsing your guys's book and the methods that you're recommending.

And there's a lot of similarities there, which is beautiful. You change, you know, some things about your life and diet and, and, what you're putting in your body, on your body and how you're showing up in the world.

And not only one disease, but multiple diseases have a higher chance of going away. So true. You're absolutely. And I appreciate you saying all that. Doctor, Joel Furman is actually a very good friend of ours.

And, you know, we've when we first met him, I sort of was like explaining to him how we teach people how to migrate towards a plant based diet. And he was telling me ins and outs of the Nutrient Marion diet, which I was already well versed on because I had read Eat to Live Myself.

And I was like, wow, if you create a Venn diagram of like, everything that Joel Furman knows and believes and everything that, you know, mastering diabetes knows and believes the crossover is like 90% right.

There's a couple of small differences in the way that we do things, but who cares about that stuff? The most important thing here is that we're talking about eating a whole food plant based diet.

That is what we recommend between 10 and 15% total fat. And then the rest is going to be 70 to 80% carbohydrate, from Whole Foods. And when you do it that way, just like you're saying, you can kiss many chronic diseases, chronic pain, neuropathy, fatty liver disease, chronic kidney disease, Alzheimer's disease risk gets cut dramatically.

Heart disease, hypertension, high blood pressure, high blood cholesterol, all of these all of these things are improved dramatically or and or disappear when you eat a plant based diet.

So this is the book that you're referring to is Mastering Diabetes. And we wrote this book and it came out in February of this year, and it became a New York Times bestseller, very quickly.

We were very excited about that. Not because we care about the ego boost. I don't care about that at all. All I care about is that people get their hands on this book and start to implement this in their life.

Mastering Diabetes Food Guidelines and Lifestyle Tools

And the foods if you if you're on this in this book, we spend about half of the book explaining what insulin resistance is and why it's problematic, which is on the other half of the book explaining how to get rid of it.

How do you say goodbye to this resistance? What are the lifestyle factors that you can put into play that are going to have a profound effect? Okay, whole food plant based nutrition, low in fat daily movement, intermittent fasting, and documentation.

As far as diabetes is concerned, documenting things in a very systematic fashion makes a huge difference. You put that those four things into play. Kiss it goodbye. It's gone.

Okay, on page 153, we have this chart right here that explains the foods that are what we call green light, yellow light, red light. Okay. We try to make it as simple as possible.

So the foods that are known and that is not my opinion, but that have been documented in the medical literature to be, the most anti-inflammatory and the foods that are most likely to reverse chronic inflammation and restore your liver, brain, thyroid gland, kidney, heart to a normal, healthy operation include fruits, vegetables, legumes, whole grains.

Okay, if you can base the bulk of your calories around fruits, we want to say vegetables. I mean non-starchy and starchy. Okay, so fruits, all vegetables, legumes and whole grains.

And then in addition to that, mushrooms. Herbs and spices and dark green leafy vegetables. You put those. If if that's the bulk of your calorie intake, you're gonna be just fine.

You're gonna be just fine. Okay. In the yellow light category, we have things that are tend to be a little bit higher in fat. Avocados, nuts, seeds, olives, coconuts.

Okay. We also put other foods that are a little bit more refined, like pasta alternatives, bread, eggs. We put those in the yellow light category because they tend to be just a little bit more processed, but they're not they're not terrible for you.

You can have small amounts of them in your diet. The red light foods are really the ones to pay attention to. Those are the ones that we recommend minimizing or completely eliminate from your diet.

Those include white meat, red meat, chicken, fish, eggs, dairy products of all shapes and sizes, and then also things like processed baked foods, pastries, croissants, muffins, cookies, waffles, things like that.

And then of course, all the white, you know, the white sugars and the white flowers just be done with those things. Get those things on your diet. Those things are not helping you in any way, shape or form.

Okay. So if you eat according to this yellow light, green light, yellow light. Sorry. Green light, yellow light, red light philosophy. What we've seen over the course of five years is that we've helped over 10,000 people directly reverse insulin resistance inside of their own body.

And, you know, the impact has actually spread out much farther than that as well. But reversing insulin resistance also leads to weight loss and improved energy and, improved kidney function and improved liver function and reduced blood pressure and lower cholesterol values.

And, you know, just being happier. Period. End of story. Having more joy in life. We've seen this over and over again. And the research also backs it up. Right.

So it's a simple system. It doesn't have to be terribly complex. And this exact same green light yellow light, red light philosophy is exactly what also dramatically reduces your risk for many cancers.

Okay. So, we're talking about Joel Forman here. He was actually the first person to to educate me about the fact about the power of cruciferous vegetables.

I had no idea how powerful cruciferous vegetables was, were until I started learning from him. Okay, so we're talking about broccoli, cauliflower, collard greens, kohlrabi, Brussels sprouts.

Okay. The more of these cruciferous vegetables that you can put into your body, at least one serving, if not two servings per day. These things have such a powerful anti-cancer, effect on cancers all throughout your body in multiple tissues that they cannot be understated.

In addition to that, green tea also has a very powerful effect at at reversing some of the cancer, biological mechanisms, the cancer causing biological mechanisms.

So the two of those I would recommend sticking into your diet on a daily basis because they have a profound effect. And you know what? It doesn't take that much, okay.

It takes very, very small amounts of those. But, cruciferous vegetables have, a whole collection of, of micro nutrient compounds in them that are extremely powerful in very small quantities.

But the thing is, you got to eat them as whole foods. If you were to somehow isolate these, anti-cancer compounds from these cruciferous vegetables and then just consume it as a supplement, it wouldn't have the same effect.

So that's why we always put a huge focus on eating the whole food rather than isolating it, turning it into refined food, and then consuming the refined food.

You know, speaking on that subject, I'm I'm doing heavy research for my next book right now about healing cancer and, you know, I've been researching the microbiome and, and, you know, inulin fiber and how much fiber we actually need and all the functions, you know, and one of the reasons why we have to and, and I've researched it for over ten years, but it's like I'm going deeper than ever before, as you know, writing a book, it's like you go deeper, deeper, deeper in the research.

Yeah, exactly. Yeah. But what I found, what's interesting about fiber, you know, that we've known for a long time is the reason why you have to eat the fruits and vegetables.

Why you have to eat the beans, why you have to eat the whole foods. Aside from all these micronutrients that are there, too, that we haven't even, figured out yet, scientists haven't even determined all the different micronutrients that are in all these different foods.

Yet the vitamins and minerals and fiber, nutrients and amino acids, these things that we know so far is just a tiny percentage of what's actually all in the food.

But if you try to extract all that out, as you were just saying, you're missing one of the most important things, one of many important things in the food, which is that inulin fiber, which is a prebiotic for the microflora in your intestines, and that microflora perform so many functions in the body, including, up regulating your immune system, including, generating, these enzymes that you're talking about that help to break down the food and send it where it needs to go.

They have so many functions. And if you're not feeding your microflora the fiber from the foods, and you can take supplemental fiber, and it still doesn't have the same effect as if you eat the whole foods themselves.

Exactly. Then then these microflora are going to die off. They're not going to function properly, and you're going to end up with, you know, some kind of, potentially some kind of chronic disease.

So, you know, the question always like, okay, so how much fiber do we need? When I found out that I didn't know was the average American eats half the amount of just the daily recommended fiber, half the amount and the daily recommended usually is always a bit low.

Right. And this from the right, it's like, what is it, 30g for men, 40g for women. I mean, it's about 30g on average. It's the 25 to 30, for women and up to about 38 for men.

And you know, if you, if you, if you, create kind of a meal plan around that, it's like, okay, it's about a cup of cooked beans. It's a salad with, as you said, some cruciferous vegetables, maybe some kale, maybe some carrots, tomatoes in there.

You know, maybe you have some quinoa for your grains and you have, you know, some fruit. You have an apple and a banana and a cup of raspberries. You're already about it, that 30g.

The problem is, if you look at most people's diets, they're not even getting half of that because they're going to the fast food restaurant and they're getting a hamburger with fries, which has one gram of fiber, maybe in the piece of lettuce and tomato that's on there, right.

And, and the problem with that is not only all the, you know, and all the excess saturated fat they're saying, but the, the lacking the fiber that's really needed to support this trillion cell organism, community, microorganism, community in your stomach that's so important for your health.

It's fascinating that the microbiome, one of the things that that I learned not too long ago is that the scientists used to think of fiber as basically just being a chimney sweep.

It's like fiber goes in your mouth. It goes through your digestive tract, and then you just poop it out. Right. That's what I originally learned, like 15 years ago was like, oh, it's just it's just to sweep the colon out.

That's that's its main job. Right? Exactly right. It's just there to just kind of like, get the stuff off of the walls and pull it into the into the toilet and get it out of your intestine.

That's literally what they would teach you in, you know, even in like, a college level biology class. But that's just because the, the understanding of what fiber is was so elementary at the time because it wasn't like an interesting nutrient study for anybody to really delve into in great detail.

But once scientists started to recognize that fiber has, even though fiber cannot be digested by you because you are human and you do not make the cellulose enzyme designed to break down the cellulose, that's okay, because fiber is not a food for you.

Fiber is a food for the trillions of bacteria that Nathan was talking about in your large intestine.

Fiber, the Microbiome, and Anti-Cancer Foods

And those guys, when they are exposed to many different types of fiber coming from many different plant materials, what they end up doing is they take this cellulose structure, they have this, they manufacture the cellulose enzyme, they break it down.

They cut it up using their enzymatic scissors. They then take the glucose molecules because that's what fiber is, is just a string of glucose molecules stitched together in a very specific way.

They take those glucose molecules, they use it for energy. They use it to replicate. They use it to to to live and create ATP. And they manufacture these things called short chain fatty acids.

Then these short chain fatty acids like butyrate and propionate, they are just like metabolic gold. So when you are a short chain fatty acid producing machine, and you allow fiber to feed your microbiome and your microbiome to make these short chain fatty acids, you short chain fatty acids, they go on to regulate so many different biological processes in the body.

They improve the function of your thyroid gland. They improve your vision. They improve the function of your brain, your nervous system. They improve the function of your cardiovascular system.

They regulate insulin secretion. Right. So all of these things are accomplishable by short chain fatty acids. But if just like Nathan saying if you're eating 12g of fiber a day, 15g of fiber a day, you're not making a sufficient amount of short chain fatty acids.

And now you have a problem where tissues are actually deprived of the very small of one of the molecules. That's actually very helpful in reversing chronic inflammatory states.

Yeah. Thank you for for even making it. You know, I'm always learning something new from you every time we talk. So thank you. Absolutely. Yeah. And I know we're kind of wrapping up here.

We have a few minutes left, but I wanted to first, you know, encourage everyone go over to Mastering diabetes.org, pick up a copy of their book. You're going to love it.

You know, if you're either wanting to, reduce diabetes risk, reduce cancer risk, and or even reverse, potentially reverse type two diabetes, or at the very least, educate yourself or someone you love.

Pick up a copy of their book. You can also join their newsletter. They have a quiz on their website. And they have coach to actually help you, implement the Mastering Diabetes protocols.

So go to Mastering Diabetes Dawg and, check out all the amazing resources there. And lastly, I wanted to just, you know, have you briefly touch on oh my gosh, we got to do another interview.

I have like ten more things I want you to touch on. Let me pick one for, in regards to, I'm just gonna say this really quick because you mentioned ketogenic diet, you know, and all the misinformation there.

We went into depth about that with Doctor Jill Furman in, specifically relationship to cancer. So go listen to that, because everything he says there is directly correlated to what you teach about, you know, high fat and ketogenic diet in relationship to diabetes.

And then that interview was all about cancer. So what you learn there, we spent our ten, 15 minutes on it at least is going to inform you about, you know, everything that we can learn here as well.

And I want to use this time, Cyrus, to, have you talk a little bit more about process sugar, specifically, as it affects, you know, diabetes risk. So and, and the context is. All right.

I changed my diet. I lower saturated fat to 10% in my diet. I'm eating, you know, a plant rich diet. I have lots of, healthy carbohydrates, lots of fruit and vegetables and beans and all these good things.

But I'm still drinking soda every day, and I'm still putting, you know, white sugar in my coffee, and I'm still having a donut, in the afternoon. And I still have, you know, a cup of ice cream at night.

With all this added sugar. How does that particularly, we know in cancer how it feeds cancer cells. But how does that play a role in someone with diabetes?

For sure. That's a great question. It's a great question. So, this happens all the time. You know, people say, oh, okay. So I'm, you know, I lowered my fat intake, but then they're consuming sugar sweetened beverages.

They're eating cookies, crackers, chips, passes right. And the answer is, listen, it's a step in the right direction. So I commend you for, you know, reducing your total saturated fat intake and eating more plant material.

But if you really, truly want to reverse insulin resistance and make a sustainable lifestyle out of that over the course of time and truly reduce your chronic disease risk not only for diabetes, but also for all the complications of diabetes, need to have to.

You must control your sugar intake or eliminate it from your diet, and have to have to have to. So white table sugar, refined fructose, things that are results of a manufacturing process.

These foods are devoid or sorry, these nutrients are devoid of fiber. They are devoid of micronutrients which are necessary for reversing chronic disease.

So a simple way to think about it is suppose I gave you an apple and you ate that apple and the apple contained, just for the sake of argument, you know, 20g of glucose and 20g of fructose.

You might say to me, well, you know, 20g of glucose is a lot, 20g of fructose is a lot. You know, we know from evidence based research that fructose is, you know, can impact, negatively impact the function of your liver, and it can negatively impact the function of your brain.

And therefore, you shouldn't be eating fructose and glucose. And my answer to you is all right. When you consume an apple you are consuming glucose and fructose.

You're also consuming more other diverse carbohydrates. You're also consuming protein. You're also consuming fat. You're also consuming vitamins, minerals, fiber, water, antioxidants, and phytochemicals.

You get a whole package. You get a whole package of both macro and micro nutrients at the same time. And all of them are going to digestive system simultaneously.

Added Sugar, Refined Carbs, and Final Takeaways

And the digestive cocktail that is manufactured by your small intestine, by your pancreas, and by your liver is is specifically designed to be able to, digest and break down and transport those nutrients simultaneously.

That's part of the biological orchestra that makes human beings so unbelievably brilliant. Okay, contrast that versus white table sugar or high fructose corn sirup.

Okay. White table sugar started with a sugar beet. And then it was processed and dehydrated and cracked and, you know, ground down and turned into a white sugar and bleached and turned into white sugar.

Or it started with sugar cane in the same process. And you end up with white table sugar, right? Or you take refined fructose, high fructose corn sirup right in either one of those situations.

If you were to consume those and stick them into your mouth, they travel into your down your off access into your stomach and into your small intestine.

Those the high fructose corn sirup. As an example, could have 20g of glucose and 20g of fructose exactly the same as that Apple. Okay, but they function completely differently because the high fructose corn sirup has zero zero other carbohydrates, zero protein, zero fat, zero fiber, zero vitamins, zero minerals, zero phytochemicals.

And zero, antioxidants. Okay, that's a problem. That's a huge problem. It might have the same glucose and fructose content, but without all those other protective micro and macro nutrients at the same time, it's not the same game.

It's not even the same league. We're not even talking about the same. We're we're talking about two completely different foods that have two completely, drastically different metabolic effects.

So as a as a society, we have to stop talking about glucose and fructose from refined sources and from whole foods as though they're the same. They're not the same. They're not they're not even close to being the same.

And once we actually make that difference, you start to realize that they're they're handled differently, they're transported differently, they're digested differently, and they have completely different effects.

The whole food is going to reduce your chronic disease risk. The refined foods are going to cause fatty acid deposition inside of your liver. They're going to make you more insulin resistant.

They're going to increase the amount of insulin that your pancreas is secreting. They're going to make you more hyperinsulinemia, which is going to raise your overall chronic disease risk.

And they're going to increase your risk for Alzheimer's disease down the road. Right. So it's the refined versions of those carbohydrates that are the problem.

The whole versions of those carbohydrates are perfectly safe. Eat them at will, eat as much as you want, have a good time and it'll lower your chronic disease risk at the same time.

Perfect. You've cleared that up right up and up and it can be really confusing. It really can't be. No, but it's you made it super simple and I love that.

I love that about the work you guys do. I love that about, you know, your organization Mastering Diabetes. You know, you're taking all this complex scientific jargon and you're making it simple and easy for people to understand, and then putting into a game plan that people can actually implement in their lives, and then giving them coaching to actually support people through success.

I think that's huge what you're doing. I appreciate you so much, man. You and Robbie and mastering diabetes team everything. You guys do appreciate you for sharing all this great wisdom, practical advice here on the symposium.

And, we got to do this again, man. Some time. I love it. Just, Yeah. I appreciate you so much. Higher life to just helping people living with cancer and people who are at risk for cancer to really understand what, what tools they have at their disposal and how they can implement a lifestyle independent of pharmaceutical medication, that's really going to make a huge impact on their life.

And, you know, if I haven't said so already, I truly respect what you do, how you communicate, and just the altruism that you have for people all around the world.

I love what you do and I am honored to be here. So thank you for including me. No question. Awesome brother. Thank you so much, and I want to thank everyone for tuning in to the Conquering Cancer Summit.

Please share this with friends and family. Together we truly can make a difference for the future of humanity in ending the cancer pandemic. Thank you and I wish you ultimate health and happiness.

Be well.