## VIDEO - Diet Doctor Podcast with Alison Gannett (Episode 25) – vimeo

**Dr. Bret Scher:** Welcome back to the Diet Doctor Podcast. Today, I'm joined by Alison Gannett who has just an incredible story of being a world champion extreme athlete, then diagnosed with brain cancer and given a terminal diagnosis. Oh, and oh, by the way, this was over six years ago. And now, she's alive and thriving and helping give back by being a cancer nutrition coach and helping people who have been diagnosed with cancer get through it both emotionally and physically and using nutrition and lifestyle as a guide.

She works very closely with Dr. Nasha Winters, and a big part of their message is that it's really about changing your entire lifestyle to lower your risk of cancer progression. And it's such an interesting topic and we also talk a little bit about evidence because, when you're talking about something like this, you're clearly outside of conventional evidence. And what does that mean?

Well, what does that mean for somebody with no diagnosed disease but just wants to be healthy and prevent cancer versus someone who's been given this life-threatening stage 4 cancer diagnosis? It means two completely different things, so we talk about that a bit and hopefully you'll see that there's a definite difference.

So, when somebody's listening to this, saying "well, how does this apply to me?", well, we all are going to have a friend or family member or loved one diagnosed with cancer and a large percentage of us individually will be diagnosed with cancer. So, whether we're talking about prevention or whether we're talking about treatment, this is going to hit many of us.

So, hopefully you'll appreciate the message and understand the nuances depending on who you are and how this applies to you. So, I hope you enjoy this interview and understand that this is a remarkable story and enjoy the story of Allison Gannett. Alison Gannett, thanks so much for joining me on the Diet Doctor Podcast.

**Alison Gannett:** I am so glad to be here.

**Bret:** You have an absolutely fascinating story and I need to start with the extreme skiing part because I love to ski, but there's always that fear factor in the back of my brain, especially as I've gotten a little older, that restrains me from doing too much. But as a champion extreme skier, I got to imagine, you just didn't have that fear factor, did you?

**Alison:** Oh, it's so not true.

**Bret:** No?

**Alison:** No, I mean, you know, I have a big fear of like, doing my taxes, you know, and it's just...you know, it takes practice, right? And I'm sure I would have a great fear of doing like cardiac surgery and that takes practice, and it's the same with skiing. You know, it's, it's baby steps, you know. First, I learned to jump like one foot, then two feet, then three feet, then 50 feet, you know. And you just get there.

And the other thing is I was a real dorky kind of overweight math geek as a kid, and I think it was just an overcompensation to like go in a whole other direction. And so, now I'm kind of like more in the middle and in probably a better place, little less extreme.

**Bret:** Were you a little bit of an adrenaline junkie when you started into the extreme skiing that you got the rush from it and you wanted more?

**Alison:** I think I became addicted to exercise. And I think I was kind of-- I've always been like kind of a type A stressaholic and that's a lot in my genetics. For sure, but then, I think also that, you know, compensation mechanism of proving to everybody that I wasn't a dork happened along with that and with that and along that I became a bit addicted to exercise.

**Bret:** Right.

**Alison:** And escape.

**Bret:** Nerdy math geeks don't jump off cliffs this high. Unsure where they're going to land.
**Alison:** But it was a really, you know, it might have damaged my health quite a bit, but I think, you know, it was a great way to see the world and get paid for it.

**Bret:** And that's what's so interesting; whether it's that or whether it's, you know, ultra-endurance marathons, or triathlons, there are things we do for the rush, for the enjoyment, for the psychological component, for the lifestyle, but have nothing to do with our health; and we need to understand that difference.

**Alison:** Yeah, and I think what, you know, our modern-day society is that we are just so bombarded with stress, with work and family, and then we add stress from exercise on top of it and then we have the mental and emotional stress on top of that. And then, we were, you know, bred to run from the tiger, run from danger. But I think unfortunately, in my case, I just...that became my whole life. And, you know, then it takes a toll on your health.

**Bret:** And then, your life, of course, did a very sharp 180-degree turn, diagnosed with a grapefruit-sized brain tumor.

**Alison:** I think it was an orange.

**Bret:** An orange, oh okay.

**Alison:** Yeah, terminal malignant cancer in 2013. I... you know really, I was acting a little bit oddly. We lived on a farm in the middle of nowhere with my husband, so he was like, well-- You know, the funny story is he thought I was trying to get rid of him. And really, I don't remember any of this, my brain tumor was like taking over my brain.

**Alison:** -And so, I was losing like depth perception, if I went to jump off a cliff skiing, I couldn't tell if it was one foot or like 20.

**Bret:** That's a big detriment- Were you crashing more? Were you having more injuries?

**Alison:** Yeah, no, I'd end up like, when you have no depth perception-- I'd actually not go because I couldn't tell. Like I'd walk around and then I'd be like, oh, it was only a foot. But I was so affected by the tumor and I didn't know it. Every-- to me, I was walking and talking to everybody else. I was walking and talking, and I was having some odd behaviors.

But it wasn't enough at first to be like, "oh, something's really wrong.". There was one day that I was cooking bacon and I was watching the flames like go up the wall and my husband walked in and was like, "what are you doing?"

**Bret:** You're just standing there watching the flames.

**Alison:** Yeah, I thought it was cool.

**Bret:** Oh wow. So it affected your ability to comprehend what was going on around you and-

**Alison:** Yeah, I guess there's a term for it, it's like ahendonia or something.

A lack of caring about things.

**Bret:** It's Anhedonia.

**Alison:** Anhedonia

**Bret:** Yeah.

**Alison:** Thank you. I've never known how to pronounce that right... Anhedonia.

**Bret:** So, then you end up with the diagnosis of brain cancer and I saw the pictures of the surgery with the big swollen eye and you look worse than any fall you've probably ever had after that surgery.

**Alison:** Yeah.

**Bret:** And you're given the diagnosis that you said of terminal brain cancer and yet, here you were an athlete in great shape, living on a farm, eating organic foods, doing healthy things. I mean, it comes as a shock to anybody, but this must have been a tremendous, even bigger shock for you.

**Alison:** It was. I really thought I was a healthy person. And I think - you know, I hear this all the time now, being an oncology diet coach. People always say "Well, you know, I'm the healthiest person or my mother's the healthiest person or my father's the healthiest person." And I'm like, well, healthy people don't get cancer.

So, what I thought was healthy, I clearly was not. And, you know, starting with blood sugar imbalance, that was a big whammy and I had some bad genetics in there, I had a leaky gut, I had immune system disruption, I had a lot of inflammation, I had thyroid problems, I was an over-exerciser, I was an over-stressor, you know... the list goes on and on. So, basically everything I studied in college for nutrition turned out to be wrong. That's the long and the short of it. That's why we're here talking.

**Bret:** Right, and we'll talk more about that. But, and, so on the surface someone can look perfectly healthy and seem like they're doing things right. But underneath, there can be a lot of processes that have gone awry. Once you had this diagnosis and you were basically given a terminal sentence, what was the path you took to sort of take ownership and get to the point that you are now?

**Alison:** Well, you know, the first part was interesting because they didn't actually tell me it was a terminal diagnosis. They were like, oh, you're young, you're healthy, like the surgery went pretty well, we got most of the tumor. And I was thinking, oh, you know, that means I'm going to be fine. And then, you know, I started googling around and then I'm like, this is terminal. And then I found out that people who did chemo, radiation and surgery lived less than 6.8 months.

**Bret:** Was it a glioblastoma?

**Alison:** No, it was a hemangiopericytoma. And so like, it's kind of like a glioblastoma but it metastasises down the spine and loves to travel. So, it's you know, it's an ugly kind of tumor. And the fact that it always regrows in the brain, pretty much kills everybody or it grows through the body and then metastasises to the liver and the spinal colony.

**Bret:** So you had surgery but no radiation, no chemo, and here it is, six years later.

**Alison:** Well, I luckily found Dr. Nasha Winters and she said, well, you know, what we're going to do is we're going to run some labs and we're going to run some DNA testing and we're going to put the puzzle together, we're going to figure out what caused you to get cancer, what underlying imbalances that you didn't know you had. And then we're going to reverse those one by one.

And when we ran the genetic test, I basically don't process drugs, like chemo drugs, very well, and nor would I be a very good candidate for radiation due to steroids raising blood sugar and me having a blood sugar problem. So, since the outcomes were not good for standard of care for me and my DNA was not pushing me in that direction, I chose to not do that and just look at the underlying causes instead.

And I, a lot of people, you know, say, well, you know, that's easy. But underlying causes are hard, you know, changing behavior is hard. And I had to change my whole life and diet was just the start.

**Bret:** Yeah. So, I want to emphasize though, that was an incredibly personal choice. And not necessarily that is recommended for everybody, and I've had interviews with Dr. Nasha Winters and she's wonderful and one of the messages I really like is to use lifestyle as an adjuvant to traditional therapies and that there is a role for those and it's not, you know, things get polarized so easily, especially on social media, that all chemotherapy is terrible, all radiation is terrible. It's not so black and white.

**Alison:** It's not.Every single person is different, every single cancer is different. And you know, you could-- for one person chemo and radiation would be absolutely amazing. For one person surgery will be great but for another surgery will be terrible. There's also clinics in Germany and Turkey and Mexico that are also using things like hypothermia, hyperbaric oxygen, in addition to low-dose chemo and you know I could list on and on and on how many millions of treatments there are and keto is just one of those things.

**Bret:** It's so interesting that we talk about cancer as if it's one thing.

**Alison:** Exactly.

**Bret:** But brain cancer is so different from reno cell carcinoma, so different from chemia lymphoma and they all react differently to different types of treatments, so I think that's important. And stage one versus stage four... completely different, that's why it's so important to work with somebody who understands lifestyle and understands cancer, whether it's Dr. Nasha or yourself. And so, you are now a cancer nutritional coach.

**Alison:** Right.

**Bret:** And...but as we were talking, you say all your clients need to first work with somebody like Dr. Nasha or some other practitioner.

**Alison:** Exactly, you know, there's no amount of diet and lifestyle change that is going to help if the tumor burden's too high. So, it's really, really important that you're working with a doctor that understands how to reduce the tumor burden and to look at the other root causes. Like, as

an oncology diet coach, I am limited with my insurance and regulations and such to just talk about diet, maybe meditation or exercise, things like that.

But, you know, Dr. Nasha's going to look at do you have a thyroid problem, are you... potentially have some virus or do you have an immune system problem or a leaky gut or, you know, she's going to go through all of those things.

**Bret:** So, let's talk about the science a little bit. I mean, traditionally in medicine, we're taught sort of the two-hit theory or that you have a genetic defect or a genetic snip or some sort of genetic change that then encounters environmental exposure, and that's what triggers cancer. And a lot of the focus has been on genetics for cancer versus the metabolic side of things, the so-called Warburg effect, that the cancer cells, they have a completely different metabolism, they do this anaerobic, glycolytic process even in the presence of oxygen.

So, they create energy as if there's no oxygen available even when there's tons of oxygen, and so, it's a disordered metabolism of the mitochondria and the way the cell functions. And it primarily utilizes glucose and can't use other forms of energy really besides glucose. So, the simplistic model is ketogenic diet, you lower glucose, you use ketones for fuel, and you starve the cancer. And while based in truth, it's not quite so black and white, is it?

**Alison:** Exactly. I mean, the whole goal is to weaken the cancer cells for sure so that other treatments can like dive in there. And you know, healthy cells become healthier on the ketogenic diet and cancer cells do become weaker. You know, they're not outrightly killed per se but, Dr. Nasha always says you know what, we don't care if you have a tumor or you don't have a tumor; it's whether that tumor is cancering, you know... is it actually being active?

And so, a lot of times we see, when we put people on the ketogenic diet, and we can talk about this too, there's no one ketogenic diet, there's no one cancer diet. Every single person should be on a specific diet for their DNA and for their labs and for their history. And there's a lot of misinformation out there between also what I call internet keto and therapeutic keto. They're very, very different things.

**Bret:** Yeah.. So, tell me some of the specifics about that.

**Alison:** Well, the first thing I do, you know, I look at a client's history, you know. Did they live in love canal, were they a fire fighter who worked in the military, you know, that can cause toxin exposure. You want to avoid toxins in the beginning, or well, forever really. But then, looking at labs, is there a lot of inflammation present, are the liver and enzymes high that could indicate that there is some kind of toxin exposure going on, you want to look at blood sugars, you know, is insulin a problem, is hemoglobin A1C a problem.

**Bret:** How do you define hemoglobin A1C as a problem? Because, you know, the definition of what diabetes is, is I'm guessing not the definition of what you're using as a problem.

**Alison:** Well, for sure. I was, you know, pre-diabetic when I got diagnosed, and here I am, this incredible athlete but you know, I'm going out and doing long bike races and skis and, you know, having gels, and energy bars that are all just mainlining carbohydrates with my lifestyle. And so, hemoglobin A1C, you know, mine is now 4.6. And when I started, it was 5.6, 5.7.

And then even bigger problem is how is insulin, fasting insulin, because really, the bigger issue is insulin. And, you know, we also look at, you know, fasting glucose, IGF1, all these different blood sugar markers, you can't just like pick one. What Dr. Nasha has taught me is to look for patterns. You know, a certain pattern of glucose and hormones might indicate like polycystic ovarian disease.

Or a certain pattern, you know, like if we see high thyroid antibodies, it often can mean that you're massively allergic to grains. So, there's all these like little snippets and I feel like Sherlock Holmes when I look at labs and when I look at DNA, it's just a super fun puzzle to put together, and I love that about my life, you know. I am learning more about my body every day and it's been this continual discovery. But it really gives you power because what you feel when you're diagnosed is just complete disempowerment.

**Bret:** Oh, sure, so you see people in a very desperate moment where they think they've lost control of their lives.

**Alison:** Yeah, well, myself too. You know, I was there when I just felt like-- you know that I was just blowing in the wind waiting to find out when I was going to die. And so, having something to really focus on, like your labs, and I track my labs every month, and I don't miss a month because I don't want to miss some kind of disruption. Like, for example, I can tell when I'm working too much, or...cause my cortisol will go up and my insulin will go up.

Or I can tell when I've exercised too much, I did a ski trip last February and, you know, went and had a ball and everybody said well, if you're doing what you love, it doesn't matter. Well, it did matter. My labs took a huge hit in inflammation after that ski trip, and so, you know, you learn what your body can tolerate and what it can't.

**Bret:** Yeah, so it's interesting. I mean, following labs can certainly be helpful in so many different ways to learn changes. But is there a risk of focusing too much on one lab change? I mean, like a CRP that goes from 0.5 to 1.2 doesn't give you cancer.

**Alison:** Exactly.

**Bret:** But it can be part of an overall picture that if it's moving a certain direction.

**Alison:** Exactly, and you-- It is... in the beginning, I and my clients, we're always like, we see something go up, like CRP and then we're panicking, "Oh my gosh, I have cancer", you know.

Well, it turns out I had a sore throat, you know. So, it's not that one lab is going to give you cancer, it's the whole... everything.

You know, you've got to have all these factors, you know, Dr. Nasha calls them her 10 different things-- the 10 different root causes of cancer. You know, if my thyroid goes off, that's not going to give me cancer, but that combined with over exercise and inflammation and high blood sugar and a virus, all those things together are going to cause the perfect storm.

**Bret:** Right, and the treatment of cancer takes a very different form than the prevention of cancer. I think that's important to differentiate. So, the people that you work with are mostly the ones with cancer who are coming to you with a diagnosis and wanting to incorporate lifestyle as part of their treatment regimen, is that correct?

**Alison:** I do both actually.

**Bret:** You do both, okay. Because when you talk about a therapeutic ketogenic diet-- you sort of touched on that versus the internet diet. I want to hear some specifics about the diet, how your therapeutic keto diet is very different from the-- what you called the internet keto diet.

**Alison:** Well, the therapeutic keto diet - ketogenic diet - is when ketones are generally between three and seven. So, higher level of ketones. And then, I also focus on the quality of the foods because you know, if you go on internet keto - what I call - it's all about like... oh, let's get some sausage from Costco and a big bag of grated cheese and we're going to make like this casserole.

Well, my whole goal with therapeutic keto is how do I get five to nine cups of vegetables into 20 grams of carbs... total carbs a day. And that's a real challenge to do that. And then I use cronometer to track my foods and my clients' foods because it's about getting the right quality of the foods but also the quantity of the macros. For therapeutic keto, we're aiming for 85% fat, 5% carbs, 10% protein.

So, it's very low protein relatively speaking. A lot of people overeat protein, overeat carbs and under eat fat. So, I find a lot of people trying to do therapeutic keto have kind of-- their body's burning glucose one moment, and then it's burning fat, and then it's burning glucose; it's not quite sure where to be. it's kind of doing both. And for therapeutic keto to manage disease or insulin resistance, your body needs to be continually in that fat-burning mode. You can't be yo-yoing back and forth.

**Bret:** So, a beta hydroxybutyrate level between three and seven. I mean that is significantly high, and a lot of people struggle to get there. So, it's going to take a lot of effort. Now again, if you have stage four cancer, you're going to do whatever you need to do.

**Alison:** Exactly, people are like, "Isn't it hard?" and I'm like, it's hard to die.

**Bret:** Yeah.

**Alison:** Pretty motivated.

**Bret:** And so, with those macros, do you find that's all you need to get people into that range or do you need to incorporate intermittent fasting or exogenous ketones? What sort of tricks can you help people with to get their levels that high, to get into your therapeutic keto range?

**Alison:** Everybody's different, of course. But the first place I start is with cronometer because a lot of people think they're eating low-carb and they're not. And a lot of people think they're eating high fat and they're not. The amount of fat needed for a therapeutic ketogenic diet, if you're trying to gain weight, you're going to be eating like somewhere between 200 and 400 grams of fat a day, which is a lot of fat.

**Bret:** 400 grams of fat.

**Alison:** I would say I average about 300 grams of fat a day. And then we need to look at genetics, about what kinds of fats you should be eating. And then, you know, the next thing is stress; are people exercising too much, are they overworking? Because that can throw them out of ketosis really easily, so, people can be eating perfectly if they're tracking on cronometer and everything is right, I'm immediately diving into exercise and stress as being problems. And then hormones, hormones can be a huge problem throwing people out of ketosis.

**Bret:** So, I want to get into all that but to focus a bit more on the food. To get that much fat with that little protein, you sort of have to get sort of creative about your sources of fat because it's not coming from steak and from eggs and cheese because that--

**Alison:** Oh, it's coming from actual fat itself. Like, I think of avocado as a carb. You know, I think of egg as a protein, I think of nuts as a carb.

**Bret:** So, it's a ton of olive oil and coconut oil and--

**Alison:** Depends on the genetics for the fats and like my typical day, I'll fast in the morning and then at lunch, I'll generally have like a huge salad, like four or five cups of greens all mixed and seasonal. And then I will fry some type of vegetable and another fat and put it on top of my salad that's topped with an olive oil salad dressing, so there's two fats.

Then, I'm going to cook my protein in a different keto fat and then put that on top and then maybe I'd put some organic pork rinds on top of that, so that's four different fats. And then for dessert, I'd probably have like one of my homemade life by chocolate brownies, so that's six fats that we're at, I don't know.

So, it's like layer upon layer of fat and really trying to mix up the vegetables. A lot of people eat the same thing every day and I think of food as medicine. So, you know, if I can get 20 different kinds of salad greens in that salads, you know, then I'm getting 50 plus antioxidants and polyphenols, if not more.

And so, we're really trying to have a lot of different types of vegetables, a lot of different types of fats, and a lot of different types of proteins that are really, really high quality, grass-fed, grass-finished, using ewg.org to find fish that's safe to eat, making sure my eggs are pastured.

**Bret:** Yeah, so that, just hearing you say that, it makes a lot of sense and if you can afford to do that, it's clearly the right way to go, but those foods are much more expensive. So, how do you help your clients sort of draw the line of how important it is to get the grass-fed beef, to get the pastured eggs at, you know, $8 a dozen versus $2.50 a dozen for the regular eggs? You know, how do you help them draw the line on the importance of that?

**Alison:** Well, when you're dealing with disease management, you have to go there. You know, if you've got an egg that's been eating GMO corn, you know, sprayed with glyphosate and then it's also then soy, which is an estrogen mimicker and that chicken ate that ingredient and then you're eating that egg, you're getting those cancer drivers, those growth factors for cancer in that egg.

So it's really important what your food eats and as a farmer, you know, I raise animals and so I know, you know, from an ethical standpoint, I think it's really important to do those things for the animals and for myself and you know, the animal deserves the best. It's...what...I think someone did a study and I can't remember who calculated it. Because the amounts of proteins are fairly low, and the overall... your overall food intake actually goes down even though your amount of calories might even go up. They actually say that you save money on a ketogenic diet even buying the best of the best because of that issue.

**Bret:** Yeah, especially if you can go to two meals a day instead of three and you get rid of your snacks and--

**Alison:** Intermittent fasting is super important for a ketogenic diet in a therapeutic state. I try to get all my food between 12 in the afternoon and, you know, a good day, four or five hopefully, so it's almost like one long meal that I have. Like, I kind of have like brunch and then a snack and then dinner in a very small window because the goal is to have the insulin go up as short a time as possible as opposed to like drawing it up to-- everything I was told like eat six small meals a day, and think about it, your insulin is like going like a yo-yo.

So, now my eating window is quite small, I buy the best of the best, you know you're eating very small amounts of proteins, that's like less than the size of a deck of cards. So, like if I bought-- when I was at my mom's, she was like isn't that grass-fed steak expensive? Well, we bought one, it was $18,99 a pound but we got two meals for two of us out of that one steak.

Whereas before, you know, the model of America is like you plunk this giant steak on your plate. So, it was only a couple bucks to have that grass-fed steak on our plate and then tons and tons of local vegetables. You know, the local greens especially. You're not paying a lot more for local organic greens than you are for conventional.

**Bret:** Okay, that makes sense. Yeah, we don't all have the benefit of growing it in our backyard.

**Alison:** Well, I do have my little farmer's market trick, which is to get in touch with your local farmer's market person in the summer who runs it. Ask them who grows greens in the winter because even when it gets to minus 10 where I live and it gets snowy, I grow greens all winter long. And so, there's people like me who do this.

And so, I pick a big basket of greens that are for stir fry, for cooking and then I pick another big basket of-- for salads. And so, you can ask your farmers that grow in the winter, you know, do you grow chemical free, do you grow all winter long... can you make me a seasonal mix of cooking and a seasonal mix of salad greens?

**Bret:** Oh, that's a great trick.

**Alison:** And so then, you have two big bags in your fridge. You don't have to think about like what am I going to eat. You can be like, okay I'm going to make soup and you put your hand in the stir fry greens, you slice up those greens into noodles or you know, you make a soup. Or I'm just going to do scrambled eggs with sautéed greens and then I'm going to put my hand in this bag and I'm going to make a salad. And so, you're buying bulk from the farmer and you're buying direct.

So, you're benefiting - these farmers don't make any money, you know, we lose money farming. So, you're supporting a local person and you're getting stuff that's so fresh. I think, you know, when you buy those big bags of organic greens at Costco, I mean, they're probably three or four weeks old, they're probably sprayed with some kind of chemical to keep them green, you know.

**Bret:** And the transportation and the boxing and the, the--

**Alison:** Yeah, and there's a famous saying, it's like with your farmacy, F-A-R-M-A-C-Y, you know, pay now or pay later. And so I don't even look at the price of like fats now when I'm traveling and I have to buy a bottle of avocado oil or you know, or some grass-fed lard because, you know, this is life or death for me. And I really don't want to add it all up because I'm not eating out, I'm not at Starbucks, I'm not drinking alcohol, I'm definitely saving money on food, so.

**Bret:** Yeah, that's a great perspective. I want to touch on the protein a little bit because I'm sure some listeners are thinking 10% calories from protein, that's very low from what we're traditionally taught, you know. And concerns about sarcopenia and muscle mass and maintaining your sttrength, your energy, how you feel throughout this diet. Do you have concerns with that low level of protein?

**Alison:** Everybody's different in how they metabolize things. So, immediately I jump to the labs and look at total proteins. And so, when I set cronometer up for ketogenic and then I set them up for rigorous is the settings-- you put your height and your weight and whether you want to

gain weight, lose weight. It'll give you your protein goal but when the labs come back, let's say it's 6.5, then that's a little bit too low. We'd rather see you like 7.1 to 7.3.

So, then I'm going to customize the cronometer so that the protein level is a bit higher and we'll retest and see if it works. I see a lot more people on the other end with protein being too high. Because glutamate and glutamine can feed the cancering process, and so if you overeat meat, you can have too many cancer growth factors and we also have the fact of gluconeogenesis of protein being converted to sugar. About 30% of the protein can convert to sugar, so we don't want to overeat protein for two reasons.

**Bret:** Makes sense. So, it's finding the balance to getting out and continuing--

**Alison:** Yeah, always using your labs and also using your DNA, because DNA has a lot of information on protein, how you metabolize protein. If you have elevated ferritin or genetic hemochromatosis, for example, then you're going to have no red meat, no cast iron pans, and you're going to have just chicken, fish, turkey, eggs.

**Bret:** So, ferritin being a marker of your iron stores and hemochromatosis being a disease, a metabolic disease where you hang on to too much iron.

**Alison:** Too much iron and then it becomes a heavy metal poisoning. And in cancer patients we see cancer also creates its own microenvironment of an elevated ferritin level; we see that a lot, and so--

**Bret:** Microenvironment of an elevated ferritin level. Tell me more about that.

**Alison:** I don't actually know the whole actual process but cancer like prefers, outside the cell, it will actually create what it wants; an acidic environment, that's why people talk about the alkaline diet, but that's not the tumor microenvironment, which is kind of why a lot of people kind of misunderstand that acid-alkaline thing.

A tumor will also create high calcium, it will create high ferritin, it will create high growth factors, it wants to create, you know, think of it like if we're decorating this room, and we're, the cancer cell's decorating its room so it can be the happiest it can be.

**Bret:** That's a good analogy.

**Alison:** It does that. And so, a lot of times, the ferritin, I need to determine whether it's genetic or whether it's being driven by the cancer cells or whether it's being driven by what the person's eating. And so then again, this is that Sherlock Holmes, you're just putting the puzzle together.

**Bret:** So, I want to transition for a second and talk about evidence, scientific evidence. And there's sort of a double-edged sword of scientific evidence, right. We say if something's

evidence-based we know it works, no, depending on the cause of the evidence, how we interpret the evidence. And there's no evidence to support it, we don't know that it works.

And on the one hand that makes sense because if you're treating people who are healthy and there's a potential risk of what you are doing, you want evidence to know that it is successful. If you're treating people who are at a desperate stage, you have no other options, then evidence becomes a little less important.

And so, I want people to understand there's sort of a difference in how we would approach somebody. And if all we did was practice what there's evidence for, it slows the growth of progression. So, there's a little balance there. So, what you're talking about, there's clearly no long-term scientific evidence to support it but there is some clinical experience that is gaining momentum. So, how would you characterize the strength of evidence that a program like this works?

**Alison:** Well, it's different if you look at like peer-viewed studies no PubMed. A lot of the studies that I, you know, I use PubMed all the time to search for things and when I get to the ketogenic studies, so often they're done with like canola oil, seed oils. And it's not what I call a therapeutic ketogenic diet that they're studying.

So, a lot of the evidence-- for example they might say a ketogenic diet raised inflammation and then I look at it and they used canola oil. Well, canola oil is going to raise inflammation for everybody. So, you have to really dig to see what the studies are that you're looking at. And then, yes, a lot of the information that I get, is anecdotally through myself and my clients, watching someone like myself given a terminal diagnosis. And you know, and if I had to go back and like redo my whole life and say I never had cancer, I actually wouldn't want that because cancer had me find keto.

And keto, being therapeutic diet that I had been put on along with all the other things we talked about, you know, the hormones and the viruses and all that stuff, I have reversed my hashimoto's thyroiditis, I've reversed my breast fibroids, which they considered to be pretty cancerous, my polycystic ovarian disease has gone away, my-- I had really bad like yeast infections and urinary tract infections almost annually, practically pneumonia from like lung infections and I had really bad seasonal allergies that went away, and all my arthritis, even with my eight knee surgeries from jumping off of cliffs--

**Bret:** Eight knee surgeries.

**Alison:** Eight knee surgeries...those went away, my Epstein bar went away, my CMV virus went away.

**Bret:** Check, check, check, check, check.

**Alison:** It's like check, check, check, check, and I see that with my clients, you know, the people that... and you know, again, there's no one-size-fits-all. You really have to customize this for every single person even whether it's to prevent cancer or conquer cancer or conquer another disease. But I see the same thing, check, check, check, check, check.

**Bret:** Yeah, that's a great point and that brings up the concept, you don't necessarily treat the tumor or the cancer, you treat the person, you treat the whole environment and you try to make them as healthy as possible. And there are natural cancer-fighting systems we have, and we need to be healthier to allow those to take place as well, and all those things probably play some sort of a role.

**Alison:** Well, and if I had found this 20 years ago, of course I wouldn't have been open to it. But you know, I would have prevented my situation for sure you know. I would, every single risk factor, you know, that Dr. Nasha outlined, I had them all. And so, it's just been such a great learning experience to use cancer as a teacher and figure out what I'm missing, what do I need to learn about.

And so, I had like a little like thyroid bump in September and so I was like okay, what's this trying to teach me. And I realized I was working too much, and that there was too much stress in my life and that I had been ignoring that I had a DNA mutation that said I couldn't process lactose. I thought, I'll have a bit of grass-fed cheese, it's local and really, really clean.

Well, that wasn't the case, you now. My DNA, once I finally did get rid of dairy, even though I had no symptoms of having a dairy inability to process. I then had a bite of goat cheese maybe two months after I had gotten rid of it and I literally got so, so sick.

**Bret:** Interesting, so while you were continuously eating dairy, you didn't notice any reaction.

**Alison:** Because you're continually inflamed.

**Bret:** So once you got rid of it and then went back on, did you notice the clear changes in your CRP--?

**Alison:** Oh my gosh, yes, it's amazing, it's absolutely mind-blowing and you know, I had one corn tortilla like five years ago and I thought, oh you know, one little tortilla, this was in the beginning, I actually went into anaphylactic shock.

**Bret:** What?

**Alison:** Yes, I had eaten corn all my life, grew corn, rolled in corn, you know, like, fed it to the chickens.

**Bret:** Like need to go to the hospital and get epinephrine.

**Alison:** I was actually in Central America on my own and I usually carry epi with me as you know, in my first aid kit for other people. And I didn't have it with me, and I would have used it if I-- was that bad.

**Bret:** Wow, that's an incredible reaction. What gene were you referring to when you said you had a genetic mutation that says you can't tolerate dairy?

**Alison:** There's several. LCT is the primary gene that we look at and there's also APOA 34 and APOA-- sorry, APOE 34 and APOE 44, also, APOA 2, which is a different gene. None of those can process dairy very well.

**Bret:** So, I think sometimes we fall into a trap with genetics of focusing too much on one gene, so I'm glad you mentioned multiple because--

**Alison:** There's a lot.

**Bret:** If you just had that one of those mutations, you could do perfectly well if all the others were okay. If you had multiple hits to the genes then it sort of adds up and affects you more?

**Alison:** Yes, and you start looking at the expression of the gene in your labs because genes can be turned on and off.

**Bret:** Right, because environmental exposure affects genes and epigenetics.

**Alison:** So, for example, my-- I had that dairy several other dairy genes, APOE 34, I have the ACSL 1 and then I have LCT. So, I knew I had three major ones, but then I want to look at my labs and see how it's expressing itself and you would see elevated eosinophils.

If you're allergic to something, you could also see elevated monocytes if you're allergic to something and you can see an immune system imbalance where your neutrophils and your lymphocytes can be off as well.

**Bret:** So, for the listeners, those are measurements you can get just from a simple CBC or complete blood count, they are part of your white blood cells, and those show up as percentages of eosinophils and monocytes-

**Alison:** Exactly, so, if the percentage of the eosinophils is over two, then there's likely some kind of toxin to the body, which can be an environmental toxin, or it can be a food toxin.

**Bret:** Right, well, switching gears for a second, I guess, while we're still on the gene concept here... genetic testing for cancer predisposition is very popular right now and it skyrocketed with 23andMe and with certain celebrities like Angelina Jolie being a big one. So, what kind of guidance can you give to somebody who says you know, I want to know if I'm BRCA positive or I am BRCA positive and what do I do about it. I mean, I know that's a very general question and—

**Alison:** No, but it's a good one. And a lot of people... well, there's a big difference between BRCA testing and genetic testing with like nutrition genome and 23andMe, because what we're looking at when we look at those broader tests is we're looking at the underlying metabolism and like do you process B12 well, do you have the receptor for vitamin D3, how do you process fats, how do you process grains or proteins.

That's really different than whether you have like the BRCA gene a lot. And a lot of people confuse the two, because the BRCA gene is going to have some underlying genes like CYP1a1 or 1b1, inability to process estrogen. BRCA genes also...usually-- people usually have CYP2d6 or 2c9 inability to process toxins. BRCA people also generally have ESR genes.

**Bret:** So, you're talking about people who have the BRCA gene in general or those who go on to develop cancer are more likely to have these other genes that are mutations as well?

**Alison:** People who have an inability to process hormones and toxins - which are the genes that I was just talking about - have a tendency to also have BRCA.

So, there's like all these genes underneath that kind of make up our whole body, and then there's like gene tests that are more like tumor tests, I guess is what I would call them. I'm sure there's a better scientific word for it than that.

But you know, often the inability to process dioxins, you know, like unbleached tampons, things like that, unbleached paper - or bleached-- sorry, I should say bleached tampons, bleached paper towels. All those are dioxins and BRCA gene has an inability to process dioxins.

**Bret:** And you can measure that from a sort of like a toxicity panel whether the levels are high?

**Alison:** You can. But you can also just look-- if you look at nutrition genome for your overall gene panel, it will show you how you process dioxin. It will show you if you can process chemicals, it will show you if you can process medications.

And so, if you know those things-- and that's the next thing I want to bring up is a lot of people are afraid to get a genetic test like the nutrition genome - and I use nutrition genome because I feel that it tests for more genes than 23andMe. 23andMe is missing a whole bunch of key genes that I really like to look at. So, let's say for example, they call the gene that I have - the APOE 4 - they call it the Alzheimer's gene.

And so, then people are like, I don't want to do that, I don't want to find out if I have that predisposition for Alzheimer's. Well, what they don't know about that gene is one... every single gene I test positive for, there's a workaround. So, I have APOE 4, the "Alzheimer's gene" means that I am much better at fasting than other people, it was preferred in Palaeolithic times and it was probably bred for because we lived through periods of sustained lack of food.

And so, adding fasting in helps clear my triglycerides that accumulate due to the fact that I have APOE 4. I've also switched the types of fats that I eat to help lower my triglycerides because of APOE 4. And then the biggest thing with APOE 4 is that we're very, very sensitive to sugar.

So, you know, here, we call Alzheimer's type 3 diabetes of the brain. So, APOE 4 people, like myself, are going to be really, really sensitive to sugar, which is why like, you know, if I eat cabbage I go out of ketosis. You know, that's probably due in part to that gene.

**Bret:** Right, and I think the argument of I don't want to know because there's nothing I can do about it, that seemed to be a much more common argument when the genetic testing first came out. Now, the notion is we can do something about it.

**Alison:** Exactly.

**Bret:** And so--

**Alison:** Every single gene has, you know, a work around.

**Bret:** And about the APO, the APOE 3, the APOE 4... part of the survival advantage could have been the higher LDL levels from the saturated fat intake. You get sort of a stronger LDL reaction from saturated fats and that was probably a survival benefit in those time.

**Alison:** Definitely.

**Bret:** And we don't know if it's dangerous or not in this low carbohydrate world that people are living in, that's also interesting.

**Alison:** There's also the studies that shows high cholesterol, you know, people living the longest. You know, and the fact that LDL is an essential for the body and I've seen whole talks and the doctors talking about the benefits of LDL and it's really about glycated LDL and oxidized LDL that are the problems. So, I have high LDL, but I also have very, very high HDL.

And my NMR lipid profile is fantastic because of the way I eat. So, all the things that said APOE 4 should be a problem for me-- I have now--

**Bret:** If you work around.

**Alison:** Correct. And the best thing about having cancer is I should, knock on wood, never have Alzheimer's disease because I caught it early enough.

**Bret:** Right, now, one of the issues about these genetic tests is, for somebody who doesn't have cancer, somebody who is just trying to be as healthy, you know, as preventive as possible. I mean, it can be so confusing and overwhelming with just the exact number or this huge number of genes that they can test and each one has a potential effect but it's learning how they work together.

I wonder if sometimes measuring the genes is not as important as just measuring the outcomes that you think they may lead to with certain blood tests and markers. So, how do you sort of differentiate for people who want to be as proactive as possible but just don't want to be overwhelmed and go down so many different rabbit holes?

**Alison:** Yeah, I mean I would say, go into the health fair and getting, you know, your basic lab test or-- is the first step for sure... because that is going to show us what's happening in your body right now and we might not know, like let's say you have high ferritin, we might not know or if it's genetic or we might not know if it's from some-- from diet or from some other reason, but at least we know it.

And so, I think of our health as like peeling layers of an onion. And you just got to start with the outside layer. And you have to realize that when you get your lab test back and it says in range, that normal is in range as an average. It doesn't mean that you have the correct amount of protein or that your blood glucose is in the right range, you know. If everybody in your area has diabetes, you're going to come back as in range even if you have diabetes.

**Bret:** Right, just look around and see what the average person looks like.

**Alison:** Yeah, I know, like, what percentage of the US population has diabetes?

**Bret:** We don't want to be average.

**Alison:** You don't want to be average anymore and that's the hard part right now; is how do you get like a range like Dr. Nasha's range that says this is optimal health versus average. And that's the hard part and that's why, you know, people hire someone like me that's why I'm now training other dieticians to use labs and history and DNA to put this puzzle together for people because it is overwhelming.

**Bret:** Yeah, some of it can be.

**Alison:** It is a lot.

**Bret:** Yeah, and also hard to study. You know, I keep going back to the evidence because I think when you talk about someone who wants prevention, that's when we sort of need a higher level of evidence to make sure we're not causing any problems but something like this, it's going to be so hard to get that level of evidence because there's so many different permutations and so many different interventions that you can try with them and it makes it a challenge from that standpoint. But if you're talking about reducing sugars, reducing carbohydrates, eating real food--

**Alison:** That's what I was going to say, that's--

**Bret:** What's the harm?

**Alison:** This isn't-- this is-- my premise is do not harm. And usually, the biggest concern with doctors with the ketogenic diet is weight loss, too much weight loss. And so, if I can mitigate that concern with the doctor on too much weight loss if the person is skinny, you can adjust cronometer so that you can gain weight, lose weight or maintain weight.

Then it's about the quality of the food. So, how can you, you know, really say that like eating really clean, really yummy food is like bad for you? You know, first do no harm. You can put anybody on a lower carb, higher fat diet and unless they have some genetic marker that's like really bizarre-- I think one of the hardest ones is APOA 2, because that can only consume less than 22 grams of saturated fat a day with the current science.

**Bret:** What's the harm if you eat more? What does that mean?

**Alison:** You'll see a fatty liver a lot of the times, you'll see a cholesterol profile, you'll see low HDL.

**Bret:** So, for those people you'd recommend more olive oil, avocado oil, and--

**Alison:** Monosaturated fats. And, you know, there's a lot of monosaturated fats out there now and you can get like thrive LG oil, Perilla oil, you can get Camellia tea oil. So, people with have genes that don't process saturated fat that well, like myself, can just switch to a monosaturated fat.

And I think that's one of the biggest benefits of the gene analysis right now is before we're guessing. And we're still kind of guessing because no one really knows anything for sure, we learn something new every day. But all I can say is that in general, those gene tests have really helped myself and my clients pick better foods for our genetics.

**Bret:** So in the absence of the gene test though, if someone was following a certainly reasonably low-carb ketogenic diet and their PHP levels are in the, you know, 0.5 to 1.5 range would you be okay with that if it's from a prevention standpoint, not a cancer treatment of cancer standpoint?

**Alison:** Yeah, absolutely. And you know, every single people... person, I mean, you'd want to look at insulin and determine how high their ketone level should be. You know, the higher their insulin, the more, you know, therapeutic they might need to be.

**Bret:** To help lower that insulin level.

**Alison:** To help lower that insulin level down, so they might need slightly higher ketones. But some people can get away with like 0.5 ketones and they're just fine, and some people don't even need ketosis, they can just be low-carb, high-fat. And eat really clean and that's just fine too. You know, the American diet right now is like, how much sugar do we eat a day--

**Bret:** Out of control.

**Alison:** Insane and I considered myself as someone who didn't need to eat sugar, because I grew and raised all of my own food. I didn't think of a grain as sugar, you know.

**Bret:** A healthy wholegrain.

**Alison:** It's a healthy wholegrain. Everything I studied in college, again, was wrong, you know, I was following those nutrition guidelines to a T and look at where it led me. So, I think any attempt at going in the other direction is going to be a good attempt. I don't see negative effects on people's health of eating less sugar.

**Bret:** One more thing I want to discuss, I know I'm jumping back and forth here between cancer treatment and cancer prevention. So, when we're talk about cancer treatment, what are your thoughts on exogenous ketones to help bring those ketone levels up and just introduce more ketones in our system again? No research, no evidence, it comes just from sort of like a gut feeling from your experience.

**Alison:** Well, there is some research by Dr. Thomas Seyfried talking about the glucose ketone index ratio, and he did do some mouse testing on that.

**Bret:** With exogenous or just with nutrition.

**Alison:** No, with nutrition, and so, we're talking about nutrition. I think it's really important to have a low glucose because glucose feeds cancer. And high ketones. And the combination of the two is just magical, which is why... I don't know who invented the glucose ketone ratio but I'd live by it, and so I'm always trying to keep my glucose ketone ratio, you know, between 0.5 to 1.5.

**Bret:** I've heard Dom D'Agostino talk about that a lot, I don't know if he came up with it or not.

**Alison:** He came up with... I don't know who came up with it originally, the first, but I think it's really important to have both. And I see a lot of people with cancer getting their ketones high, but their glucose is still very high.

**Bret:** And is that a fasting test that you do? **Alison:** Fasting, glucose, and yes. Well, actually, the glucose ketone ratio I can take any time of day. So all I am is taking my - when I eat a meal, my glucose doesn't go up. Not anymore, you know. I can be like 69 before the meal, if it's a really good keto meal, I can be like 75, you know, so a little there. But that's what our bodies should be.

You know, the glucose can be affected by stress or by hormones or a lot of other things, so we have to figure out why is your glucose still high. Why is your insulin high and then put that

together. And then, so, ketones can be-- exogenous ketones can be a problem, especially if people have high glucose and they're taking exogenous ketones. It's simulating ketoacidosis.

**Bret:** Without necessarily the danger, people don't get it necessarily--

**Alison:** I don't think it's-- I think it's our body is meant to go into real ketosis, which is not just one chemical, beta hydroxybutyrate.

**Bret:** And I think that's a great point. It's not just about pumping up the ketone level, it's about pumping up the ketone and lowing the glucose at the same time and exogenous ketones aren't going to help you do that.

**Alison:** And it's not just lowering the glucose, it's lowering inflammation, it's changing cellular signalling, mTOR, ATP production, mitochondrial repair. The list goes on and on and on and it's-- our culture just wants to take one thing, and this little exogenous ketone is going to make us all better and get us away from all the hard work that goes into it, and I really think this is the case where you need to do the hard work. I'm not opposed to exogenous ketones.

Like, say someone's going into surgery or they're doing radiation treatments, they need like a little bit of extra. You know, then I think it's a good application. And the other great application I think, is traumatic brain surgery. And so, if you have a TVI or let's say you get hit, let's say your kid gets hit on the football field... popping some exogenous ketones has really been shown to diminish the effects of a brain injury if they're administered within I don't know how much time, but it's like, it's a short window.

**Bret:** Yeah, I think that's one of the exciting areas of exogenous ketones, where there's research actually happening.

**Alison:** I think it's really cool. Exactly, exactly.

**Bret:** So maybe I'll see more of that research come up. Now, you mentioned if they're going into surgery or if they're having radiation therapy. Now, what about prolonged fasts during those periods?

Because that's a hot topic and a controversial topic because, I guess you can say, temporary medicine focuses so much on cachexia and calories by any means, that it's okay to eat whatever you want just to keep your weight up versus some evidence and clinical experience that says a prolonged fast is going to potentiate the effects of the radiation or the chemotherapy and help you get through it. How do you... what do you recommend for people in that standpoint?

**Alison:** Well, definitely for chemo, the Dr. Valter Longo's protocol fasting before chemo.

**Bret:** Yeah.

**Alison:** And if you can't pull off fasting, a fasting mimicking protocol. You can make up your own, you don't have to buy that fancy one. But, basically fasting is putting, think of it, just from a pure scientific perspective. If cancer cells can only form out of glucose and glucose is absent, when you go into chemo - those cancer cells are going to be in a weakened position. Whereas regular cells like adore fasting. And so those cells that aren't cancering are going to be stronger and so you're creating this discrepancy of the weak and the strong going into chemo, and that's my dumbed down story.

**Bret:** Makes a lot of sense.

**Alison:** And you know, radiation, having ketones above three, Dr. Adrienne Scheck has shown in some studies a 50% increase in effectiveness of radiation if people are in ketosis.

**Bret:** Interesting.

**Alison:** So, there are studies that are backing that up. That is, does not have to be fasting, I think the hardest thing that I've seen with radiation is people are given steroids and same with chemo.

**Bret:** Raises your blood sugar.

**Alison:** And steroids raises your blood sugar, so then it's creating a favorable... so we're putting someone into al this toxic treatment but we're creating a favorable environment for those cancer cells. So there's alternatives two steroids that Dr. Nasha uses, Boswellia and turmeric.

Even simple things, a lot of people use like Benadryl instead of steroids for chemo. So you know, you can get away with doing it with less toxic effects to your body, keeping your healthier cells healthy, your cancer cells weaker, you know. But in my mind, everything I put in my mouth is either making my cancer cells happier or healthier or not.

This is something a lot of people don't talk about, the healthy human body makes somewhere between 500 and 2000 cancer cells a day. So, you made them today, I made them today, you made them today. What we do is feed them or kill them.

**Bret:** Right, create an environment where they're not going to proliferate and thrive. I think that's a great place to leave it and I mean just incredible stories like yours and people who have these... just these huge challenges and you could call it a tragedy in life but turn it around to make it such an amazing benefit for you and for the clients that you work with who are going through one of the most challenging times of their lives, and so I appreciate all that you're doing for that.

And I think this was a great discussion and really to help differentiate the treatment versus the prevention, what people can be thinking about to maximize their chances to either cure their

cancer or knock out their cancer but obviously still work with a provider, don't do this on their own.

**Alison:** For sure. And we didn't mention this actually too, just so people know that there are alternatives for treatment. Like in Germany they are doing hypothermia with low-dose chemo and then, you know, all these immune system boosters like IVC, every single person is different. But we've sent some people over to Germany or Turkey that have literally had to go in like a wheelchair or stretcher.

And came back like playing with their children. And so a lot of the world - rest of the world... is kind of light years ahead of where we are, because right now in America if a doctor recommends anything other than surgery, chemo, radiation or a clinical trial, they can lose their AMA license. And so we can't even speak about this, you know, mistletoe, you know, these things that are working really well in other countries that are considered standard of care.

**Bret:** And I think a lot of that comes with this polarity that people think, just do this other alternative therapy and don't do anything else, and so, that's not necessarily the message.

**Alison:** You have to do like a million things.

**Bret:** And we shouldn't be saying just do chemo and radiation and forget about everything else. That should be just as malpractice as--

**Alison:** Exactly. And you know, you have to look at the root causes. If you don't look at the root causes, it's going to come back. No matter how much treatment we throw at it... you know, if I don't change what gave me cancer, it might not come back as brain cancer, it could come back as something else.

**Bret:** Right... Interesting.

**Alison:** You know, it's all about optimal health and that's the exciting thing. Think about it as like being the best version of yourself, you know.

**Bret:** Physically and emotionally and psychologically.

**Alison:** Yeah, and that's why we're here and you know, why Diet Doctor and stuff is... everybody wants an optimal version of themselves.

**Bret:** Right... Great, great way to say it. So, how can we find out more about you, learn more about you?

**Alison:** It's just alisongannett.com, A-L-I-S-O-N, G as in George-A-N-N as in Nancy-E-T-T as in Tom dot com. That's my website, you can email me through there and I'm on Facebook as well,

but I hate-- I'm trying to get rid of all that social media stuff, it's too stressful. I am extremely, extremely booked right now but I now have a team that I've trained.

**Bret:** Great, awesome. Thanks so much for taking the time.

**Alison:** Yeah, thanks a lot.