

## Paleo Solution - 381

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Robb: Hey folks! Robb Wolf here. Six listeners can't be wrong. It's another edition of The Paleo Solution Podcast. I've been really interested in metabolic underpinnings of health for a long time. Like this is kind of where I really stepped into the ancestral health journey that I've been on. At the time that I embarked on this, I didn't really know that I was tackling it from a kind of a metabolic health perspective. But with my background in biochemistry and some of the bench research I was doing when I started addressing some fundamental health issues I had, this metabolic underpinning became pretty important, very interesting. Early, early on I had the great fortune of interviewing some people like Tom Seyfried who has been a pioneer in the metabolic theory of cancer, and today our guest is Dr. Nasha Winters. She is a multiple time bestselling author. She has a recently released book, The Metabolic Approach to Cancer, and she is a naturopathic physician, an all-around fantastic person, but she was foolish enough to come on the show where all careers go to die. Dr. Winters, how are you doing?

Nasha: I am so good. You crack me up. This is perfect.

Robb: I am famous if for nothing else providing the most paltry of introductions to the most qualified of people, so why don't you fill out a bit more about your background so people actually know who you are? I'm sure so many of my listeners know who you are, follow your work. But just in case they do not or if they're just interested in a bit more back-story, can you flesh some of that out for us?

Nasha: I can. And first of all, let me say this. I mean people always feel bad, but my name is pronounced Nay-sha, with a Y.

Robb: I'm so sorry. I'm so sorry.

Nasha: Please don't. It's my own family does that, so it's not on you. Number two, I have to say that my husband, I think, is more excited about us talking today. He is a complete biochemistry geek by training in life and nature, and I think he would be -- he's in Vegas right now speaking at a huge Emerald Cannabis Conference on cannabinoids. That is his baby in the field and so he's I think more jealous that I'm talking to you that he has talking in front of 14,000 people today. So there's that.

I have the pleasure of living in beautiful Durango, Colorado. As such, when I was an undergraduate, my undergraduate studies here at Fort Lewis High, Fort Lewis College back in the '90s, early '90s I got really, really sick and no one could figure it out and I landed in and out of hospitals and ERs multiple times for a period of over a year. Part of that I have a lot of health issues, but it just seemed like my status quo so I didn't give much thought to it. But when they finally figured out what was going on, I was given the unfortunate news of a terminal diagnosis of ovarian cancer. By the time they found it I was in end-stage organ failure filled up with ascites fluid; really, really sick; really, really malnourished and on my way out and to the point where they couldn't really offer palliative chemo without knowing it would snuff my candle a wee bit faster.

So being a premed student, being a chemist geek and interested in metabolic therapies, sort of at an early stage like you, at the time I worked in a library, I was a premed major and I started reading everything I could. When they told me I was going out I thought I'd go out fighting, and for me fighting is using my intellect. So I wanted to learn all I could about my process. Now, this is in 1991 and at that time there was no Doctor Google, no Dewey Decimal, the Dewey Decimal system was my go-to for information. Probably most of your readers don't even know.

Robb: Yeah, there's a bunch of whippersnappers that are like Dewey Decimal? Was that like one of presidents of the United States or something?

Nasha: Yes! Yes, it was. It was. It was. So they don't have to look any further. But actually one of the first readings I stumbled upon in 1991 was the work of Otto Warburg. Otto Warburg is sort of the grandfather, if you will, of this metabolic theory. You talked interviewing Dr. Thomas Seyfried whose work has been instrumental in furthering conventional oncology as we know it today. He's picking up on the work of Dr. Otto Warburg from the 1920s that started recognizing this metabolic mitochondrial process that was happening. It was actually more of the problem that cancer, not the DNA damage being the problem of the cancer. So I started reading that and it resonated with me and I started doing everything I could to learn about it.

Let's fast-forward 26 years, as of October 21 of this year I'm 26 years out from this terminal diagnosis. Yay! And apparently, still from conditional standard probably still dying, and all of us are, I would say.

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But basically, this information that was so cutting-edge and so new. When I was looking at it everyone thought I was a complete freak, which they still do for different reasons. But ultimately, the work of Thomas Seyfried started coming to light in the mid to late 2009-2010 and his book in 2011, and to see his work showing what I've been thinking about and watching for all of these years was a

turning point for my life, my own health, my career and the way it's talked about. Because as a naturopathic doctor saying these things, it was like yes, yes, there, there. Pat me on the head and send me on my way. But when somebody like Dr. Thomas Seyfried and his cohorts started talking about it, people take note. I don't care where the conversation is coming from. I'm just happy that it's happening now.

Robb: Right, absolutely. I could not agree more. I don't know how many people know some of my back-story, but part of the reason why I've always been interested in health, particularly this kind of cancer and autoimmune stories, I had a girlfriend in eighth grade who developed a glioblastoma brain tumor, and we thought that she was going to die from that. She actually bounced back pretty well from kind of the conventional radiation-chemo, had another two years where she did pretty well and then had a really rapid decline at the end of all that. So I literally sat bedside with someone that I cared deeply about and you think about 16-year-old hormones and inability to really connect the dots with your life. It was quite an impact on me when all of that stuff happened. So that was really kind of one of the main formative elements of driving me in the direction that I've been following all the rest of my life.

Nasha: Yeah, those years of being a teenager at that time, it is the formative years. So me even having this terminal diagnosis at 19, clearly the formative years and that it has -- boy, it has been part and parcel of my entire life, including my biochemist husband who what 22-year-old thinks, "Hey, I'm going to totally date this hot 19-year-old chick. She's dying. What a great score."

Robb: I mean unless your life insurance is paid up aggressively or something. It's like what's the upside there? Yeah, yeah.

Nasha: I still wonder like hmmm, maybe he thought oh, this won't last long. And so now 26 years later he's kind of stuck. So yeah.

Robb: Right, right. Doc, your book is phenomenal. I loved reading it. It was just so cool to see folks that are now out providing an option, just providing an opportunity to look at this whole story in an alternative way. I really like how you parsed out the information, particularly assessing one's terrain. I liked how you described that. I just think that a well-done analogy can be very powerful. Can you talk about what the terrain is, what goes into that and why is it valuable for understanding the story particularly when one is facing cancer?

Nasha: Absolutely. Well, first of all, there's a couple myths I want to bust in our conversation today. One of those myths is that cancer is a genetic disease and that you are simply just a sitting duck waiting for the Russian roulette game to catch up with you. That's actually even though we still had a couple of studies in

the last few years trying to come out and say that it's just random and just simply bad luck, I'm here to tell you that is not the case. You are far more powerful than you are led to believe.

Number two, this concept is maybe we don't even have to throw the baby out with the bathwater. We don't have to necessarily discard the concept of genetics and what role they play here, but we certainly have to not ignore the data that shows if you show the DNA of a particular nuclei and put it into a healthy, like a cancerous DNA nuclei into a healthy cytoplasm of another non-cancerous cell, that cell does not get cancer. That cell just does its thing. So that's one of the first moments, these mitochondrial transfers. And a lot of the research that started to show us wow, there's a lot more to it. So it's not about the mitochondria itself or the nuclei within the mitochondria; it's what it's swimming in. So that's what got me started thinking about this 26 years ago is what is inside my bucket that is causing me to have this dire diagnosis. You could put whatever diagnosis on that. It could be heart disease, it could be Alzheimer's, it could be diabetes. It doesn't have to just be cancer. So the bucket as the bucket is the bucket.

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So in that bucket we have ten things that I have found to cause an effect in 20 some years of my own practice for myself and tens of thousands of other patients that it just seems to work well for what I see and how to address it. So those ten items are epigenetics. I know you've had guests speak to this ad nauseam, but basically this is the blueprint we've been handed by the people that have come before us and we have to realize that this is dynamic. It's not stagnant. It might be your blueprint but you can certainly rearrange it and redecorate the room. So it gives you more power that most of our diet and lifestyle choices help our epigenetics work properly or cause harm. So epigenetics go into that bucket.

The other thing that goes into that bucket is just our metabolic, our fuel source, so our food. Are we putting in huge amounts of sugar? Are we putting in too much protein? Are we putting in too much processed food, GMOs, other Frankenfoods into the system? Are we putting in real live from the source food? The next thing, of course, we live in a very toxic planet today. It's hard to get away from all the toxic exposures, but some of us might be living on top of super fungicides unbeknownst to us and it certainly has come a long way that we can figure that out now and do something about it. Now, of course, you have the soil, our microbiome, which gets a lot of press these days. So the little guts that inhabit us have huge impact on how things move and work in our whole body. And then other things just kind of rattle them off. Our immune function, the inflammatory process, angiogenesis and kind of vasculature and circulation, hormones, hormones balance is huge, our stress and circadian rhythm -- I mean for crying out loud, circadian rhythm won Nobel Prize fame this year, so it's a big

deal. And finally, our mental-emotional soup, everything else goes in. So that bucket has ten different things filling it up at any given time and sometimes those items are really out of balance and we really have to do something about it.

Robb: Doc, it's interesting because you open this up in kind of laying one of this big kind of epistemological backbones of medicine, which is this thought that cancer is a genetically driven disease, yes, with some epigenetic inputs, and this whole metabolic theory of cancer really flips that on its head. It's not to say that genetics don't have a place in that, and correct me if I misrepresent this, but the theory here is that something goes haywire within the metabolism of the cell, most specifically in the mitochondria, and then based off of some genetic propensity, we may then see this whole process then slide into a carcinogenic state. Part of what's happening when we say the mitochondria is not functioning properly and we essentially have a substrate or energy depleted state, the DNA starts getting shuffled around because the cell is trying to figure out a way to literally kind of microevolve in that setting to be able to continue to live, and the result of that oftentimes can be cancer.

Now, you talk about a ketogenic diet within the book and some of the context to the Warburg effect and whatnot. In looking at the literature, there appear to be some cancers that seem to be pretty amenable to a ketogenic diet, there are some other cancers like melanomas come to mind that seem to be emboldened, and the ketogenic state or fasting seems to kind of press that DNA shuffling program again. What are your thoughts around all that? Like what is the kind of boundary of where the ketogenic diet has efficacy? Where do we have some challenges with it?

Nasha: It's such a good question. First of all, there are amazing people out there doing amazing research, and the thing that I want to really differentiate here is there is a lot of interesting data coming out of the lab, coming out of the Petri dish, coming out of the animal model, coming out of the cell line study. That is very powerful. We need that information to inform our decisions. But I'm here to tell you I'm a clinician, that I was a patient first and I've been in the field for a very long time, and I've worked with tens of thousands of patients and hundreds, thousands of different cancerous processes in different types because there's not a single cancer. You have ten breast cancers, and they're all very different.

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But basically, I have personally and my colleagues who also practice in metabolic approach have seen great, great outcomes in all tissue types, all tissue types of using a ketogenic diet because it's not simply turning off the, oh, gosh, I guess the metabolic part of the ten hallmarks of cancer. It's not just impacting that. It's impacting the other nine hallmarks of cancer. So it's inducing a ptosis. It's changing DNA replication. It's changing the proliferation cycles. It's enhancing

the effects of other therapies. It is a lot bigger than just oh, this just starves the cancer of sugar.

So in a Petri dish and in some of these models, animal models that may not have the same metabolism as humans or maybe don't even have the liver in the model itself, which is where all this process is happening in our bodies, you can see some data showing that it could be tumorigenic or carcinogenic of having ketones on board. But clinically, because of the way I test and assess and retest and assess over and over again, I can watch the cancer markers change, I can watch the rest of the terrain, values change on the labs, I can watch tumors get smaller on scans, I can watch people's lives come back to them. It doesn't matter if it's melanoma, if it's breast, if it's ovarian, if its brain, if it's liver. I've seen it be very effective in all tumor types in my personal career.

To speak to what some of the science is showing, yeah, I think the possibility is there in anything. But the reality in my world, what I've seen is that I find that nothing pushes back an aggressive cancer process better or faster, or nothing enhances conventional interventions or even nonconventional interventions better, and that the overall ability to stabilize someone in like a cachectic state, for instance, I've not seen anything work better. I've been at this a lot for a very long time. I only really started actively using the ketogenic diet in my practice in 2010, even though I've been using it on and off and in different cancer types over the years, my first one being a GBM in 2000, and then for myself, of course. I started using that over my own recovery. But basically, it's relatively new. I tried everything else long before I tried a ketogenic diet with cancer patients, and simply stated, I don't see anything work better.

Robb: Fantastic! Yeah, it's interesting because there is a pretty vocal group of folks who they're pretty antagonistic to the whole ancestral health idea, and it just kind of it seems to go part and parcel of anything that kind of paints a ketogenic approach in a nonfavorable light, particularly with therapeutic interventions. Man, they're all over it. My position on this has long been that even if we had a scenario which you seem to be suggesting that even my assumption here may be misplaced, but my assumption has historically been okay, maybe we have a scenario in which under a baseline circumstance of just nutritional intervention, a ketogenic diet may not be the ultimate solution per se like a malignant melanoma, but what if we used adjunctive therapy like chemo and radiation because we do know that the ketogenic diet tends to strengthen the normal tissues, it still tends to be a stress for the cancer tissues. So that may end up being in that win. We really haven't investigated that. You have a host of other interventions including using some things like mistletoe extracts and whatnot, which I definitely want to dig into.

But it's interesting how certain many people are about the inefficacy of this approach despite not looking at it at all. Like we're very much still in that clinical part of this story, and it's folks like you who are in doing this day in and day out and then generating clinical notes, and those are observational, but it's from that observation that then we start getting pilot studies and efficacy studies and eventually RCTs and whatnot. It's just fascinating and kind of frustrating for me when you look at the really pretty terrible outcomes of cancer treatment over the last 40 to 50 years, like we really don't have a lot of huge successes to hang our hat on. So anything that looks like it could be beneficial, it seems like we should kind of kick the tires on that, but that's kind of a controversial topic.

But you mentioned a term in there, cachexia. Can you talk about what that is? And then maybe that's a little bit of a lead-in also of why most oncologists are super worried about a ketogenic diet in that context because a ketogenic diet is usually associated with weight loss.

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Nasha:

Great. Oh, I'm so glad I have the opportunity to talk about this because it's another big myth you know oncology in that cachexia is a metabolic muscle wasting process. It is completely driven by inflammation and angiogenesis just poor metabolism, let's say, so mitochondrial dysfunction at its core. The funny thing about this is you can take a truly cachectic patient which we can look at someone and think that they're cachectic or not depending just how they look, but we actually can do laboratory testing to know if they're in a true metabolic state of wasting. Again, I test a lot, so I am watching things very, very closely and I change course as needed, things on those labs. I never guess. You don't have to anymore.

But basically, with regards to a cachectic process, it will not respond to a high caloric intake and especially a high carbohydrate caloric intake. So the words, the language the doctors in oncology centers and the nutritionists and the nurses use with my patients is they'll say we don't care what you do, just don't lose weight. That's one of them. The other statement they make is eat as much as you can and want and food doesn't matter. And then they really encourage them to get six packs of BOOST or Ensure which is a Frankenfood all the way around. There is no food in it. It's all chemicals, it's all synthetic, and it's all high fructose corn syrup and gluten. So not a good idea if you're trying to avoid perpetuating an inflammatory metabolic process.

That is huge and that has been our strategy all along is so let's overfeed it and see if we can stop it. You don't. Once somebody becomes cachectic, that's often actually the beginning of the end. It's actually more the cause of death in cancer patients than the tumor or the cancer itself because they simply starve to death. That metabolic shift is a real thing. It takes away hunger and it takes away the

ability to digest very well, so it's a whole metabolic process and not just calorie in, calorie out.

That being said is when I started seeing that in patients with congestive heart failure, with HIV and AIDS, with cancer, in my medical school training, instead of giving somebody an Ensure or a BOOST, we would start to put them on these sort of high fat coconut milk, MCT oil based shakes that stabilize things tremendously. Now this is before it was on every corner that you could talk about ketogenic. This is back in the early to mid '90s. So what happened over time is in my own practice I started to formulate these sort of medicinal shakes. In fact, for a period of time my husband and I owned a supplement company called Thrive and we had a formula called Metathrive which was basically a powder powdered MCT oil-based formula that people could make their own, non-toxic BOOST and Ensure shakes, and we started to see patients having incredible responses, incredible responses to it. So over time now, people like Dr. Don D'Agostino is actually doing some research on cachexia with ketogenic diet because a lot of people are scared to use it, because you're thinking oh, my God, they're starving. We can't lose any more weight. Being skinny is one thing, being metabolically wasting is another.

A story that I help educate doctors and patients on is look at World War II. When the soldiers liberated the victims from the concentration camps, many of these people had been in an extreme state of starvation for a very long time, and what ended up happening is most of them had gone into a state of cachexia because they overshot the intermittent fasting window of it being metabolically effective to help you. They were on the total starvation side of things and their metabolism and their chemistry shifted as such. So what did we do as well-meaning soldiers when we liberated them? We handed them all candy bars. We lost thousands of people in a matter of those weeks coming out of the liberation of the camps to something called refeeding syndrome. This is a real thing. In fact, it's a very dangerous thing. So I encourage your listeners to go and look it up. Refeeding syndrome is deadly. So these folks, their metabolic process was such that the sugar just exploded the already metabolic vulnerability that was there.

That's the same thing we're doing when we give somebody a can of Ensure or a can of BOOST or tell them to go out. In fact, in the ACS guidelines in their little booklet that might have changed in the last couple of years, but one of the first recommendations like go have an angel food cake or ice cream or Oreos. I mean I'm not kidding you. Those are the recommendations of how to fatten yourself up on avoiding cachexia. And yet, what we find slows down cachexia is a high-fat diet. Depending on some people's chemistry, some will need a little bit more protein, some will definitely need to be more on the ketogenic anti-cancer protein stage, which is a little bit lower. We alter that based on the individual. But ultimately, that's the only way I've seen that you can really turn cachexia



around is getting carbohydrates completely out of the mix and going full force on the fat. Even if they lose a few pounds, they're still changing the mitochondrial metabolic process.

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Robb: Fantastic! Doc, I've been a big fan of ketogenic diets for a long time. This was really my foray into ancestral eating and I've been kind of in-out around that ketogenic state for almost 20 years. Because of my Brazilian jujitsu practice I tend to do 75-150 grams of carbs a day on harder training days. Interestingly, I still seem to be in ketosis more often than not. I kind of cycle in and out, but it's a pretty easy process for me. Clearly, ketogenic diets are super popular right now, but they do have some challenges for people, like if they are exercising at a pretty high clip they can be problematic. There are some other things that pop up, like to what degree should folks use a ketogenic diet as a prophylactic approach to preventing cancer?

Nasha: Well, first of all, I think something you said was really powerful in that you can still eat a fair amount of carbohydrate and not pop out of ketosis. What that reflects, Robb, is that you are metabolically flexible. So what I encourage patients to do is create metabolic flexibility, and then cycle your life around whether it's around workouts or holidays or travel situations. Now, mind you, this is in the non-cancer patient, but the day-to-day of what you're doing when in your relative good health and you're just trying to use this to keep it that way, getting yourself by challenging yourself first to get metabolically flexible, everyone's sort of threshold will be different. So it might take you a few days, a few weeks or a few months to create that metabolic flexibility. By that I mean that you can regularly, routinely deplete your glucose levels and increase your ketone levels, and then stay pretty solid that you're not thrown off with certain foods. Like maybe you can have a sweet potato and it doesn't throw you off kilter or start to go back to your nice dark skin berries and not go out of ketosis. If you are a person who has two berries and you go out of ketosis, that's still showing me you're not metabolically flexible. So you may have to prime the pump for a while until you can be Robb-like and be able to enjoy higher carbohydrate days and still see trace ketones or moderate ketones on your urine or after a night of fasting. That's where all of our bodies were meant to be. That's where we were. That's how we have been until we started really dumping sugar into the gas tank starting around the 1850s when we started processing flours and really started adding it to everything. The interesting thing that happened, in 1850-ish we were eating an average of 30 grams of carbohydrate a day. Isn't that amazing? We were eating ketogenic without trying. It was just the way it was. Today we eat 30% of our diet. It's a big difference.

Robb: Oh! Okay. I was like holy cat! Really? Okay, that makes sense.

Nasha: So 30% of the diet in the mid to late 1800s was carbohydrate. Today that is over 70% of our diet. That's a big shift in a relatively short period of time. So what's it's done is it's gummed up the work. It's like literally pouring sugar in your gas tank. You might be able to sputter down the road for a little bit, but you become less and less efficient, and then you might have to get out and push the car et cetera. That is the state of health in our country and in most of the world today. So I really invite you to explore putting your body into a more metabolically flexible state in order to be truly preventative from all the big things that get us today, which is cancer, cardiovascular disease, dementia, diabetes are the biggies and they're all driven by sugar.

Robb: Love it. I love it. Doc, what are your thoughts around genetic testing? Like folks go in, they do a 23andMe, maybe they go in and do something specific like a BRCA1, BRCA2 genotyping and the information comes back and it's like oh, you've got BRCA1 or some of these other hosts of cancer-related genes. Some celebrities like Angelina Jolie had a prophylactic bilateral mastectomy based off of this finding.

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It's interesting for me, when I dig into the literature around things like Huntington's disease and BRCA1, BRCA2, if you search for these things and you use the term evolutionary advantage with Huntington's, you find that these people have lower rates of infections, they tend to have more offspring, we didn't really see this disease state until modern times even though this genotype has been with us for a long time. Going back to epigenetics, I have this sneaky suspicion, and people will say well, when you get older, it increases your likelihood of these diseases. That's true to a degree, but humans also have a powerfully selected tendency for long age because of the complexity of our culture. It's called the grandmother effect. So I don't buy that we show up with damaged goods per se. We do have potentialities and plusses and minuses. If you're very light-skinned and lived at the equator, you'd maybe get sunburn more easily than somebody who's darker-skinned, but that's not a good or bad thing. It's a relative kind of deal. But what are your thoughts around the genetic testing and then what's kind of the implication of having a "cancer" gene?

Nasha: Oh, such good questions. First of all, I want to differentiate the two. Our genes, such as like looking for the Lynch gene or the BRCA gene or the ATM gene or even some of these others, like you said the Huntington's or cystic fibrosis gene, some of those things are a little less dynamic and that they're kind of like this is what you're born with and you have a much higher risk. We see lots across the board. You have a definitely higher risk of manifesting symptoms of these genetic difficulties. And then we have the epigenetics which are like little hiccups, little kind of you know, they're a little vulnerable, but you can definitely have a lot more control of helping those turn on and off at will with thoughts, with mood, with movement, with avoidance of certain toxicants, medications, et

cetera. So you definitely are more powerful at directly impacting those. The others may be more challenging to change if at all, but you can still often support them, if you will. So I think that's important to start there.

Number two, the idea that we can somehow outrun our gene like any TM mutation or Lynch mutation or a BRCA mutation, which are simply methylation and DNA repair hiccups. Which again, if you are coming from a genetic somatic theory, which is now I think round, then that's a little bit scarier. But when you're like me and people like Dr. Peterson and Dr. Thomas Seyfried and many, many other people growing in the field of research and clinicians, when you understand it as a metabolic mitochondrial disease, you know that if the mitochondria are happy and healthy and in a good number and volume, that the potential for those damaged or that kind of deck of cards you were handed to be played is really unlikely. You cannot express damaged DNA because the damaged DNA is based on the health of the mitochondria. So the mitochondria are healthy, the DNA is healthy.

It's still going up one stream. Our culture is still very seduced by the idea of I'm just going to go cut my boobs off and that will prevent me from getting breast cancer. Well, I'll tell you what. I have had seven patients who have died of metastatic breast cancer after prophylactically removing their breasts because of having the BRCA gene because they simply were not told that okay, just cutting them off makes them have kind of a sense of security that's really a false sense of security and that the body has cancer cells in it at all times. If you don't go in and dig around and clean up that bucket we talked about in the beginning, the terrain is still the same whether you have those breasts or those ovaries or not. So the right conditions are still there to have the damaged mitochondria that lead to the damaged DNA that lead to the diagnosis of that condition.

So I think that's where we're still getting really screwed over by the media and by well-meaning health advocates and famous people that are putting money in the pockets of surgeons and reconstructionists and people running the tests and all the equipment and all the things that go along with having your new bras and everything. I mean there are people making a lot of money off of that Angelina effect, and the sad thing is that no one is looking upstream and that's where the attention should be given. That's where I do love testing is because knowing that you've got the BRCA or the ATM or the Lynch or knowing what your epigenetics are gives you the knowledge to know what it's going to take to clean up and out and replenish your bucket all the time so that you don't have the broken mitochondria that leads to the broken DNA that leads to the disease.

Robb: I like it. It's interesting and I don't know where you are in this, it'd be interesting to get your thoughts, but for like that breast cancer potential, and I believe it applies to some other endothelial-derived cancers as well, but there was some

research that suggested that simply taking a baby aspirin every other day could reduce one's likelihood of breast cancer by like 50 or 60%. I think that ties in to some of that angiogenic effect which maybe you could talk about. But are you familiar with that? Do like that as a potential mitigative intervention? I know that we should probably go to bed earlier, not eat so much sugar, but as a pretty low-risk intervention, what are your thoughts around things like that?

Nasha: Well, there's absolutely a ton of research on this and there's a lot of organizations out there and researchers that are showing exactly what you said, that an aspirin a day, we sort of think it was more for cardiovascular, but we're finding it's for other things. But I am still that person who goes back upstream and say well, why is it effective? What is it doing? Because still, an aspirin is still going to cause harm to the microbiome, it's still going to cause harm to the lumen of the gut, it's still going to turn your GI tract into Swiss cheese. Some of us have certain epigenetics that make us more sensitive to salicylates or to the effects of blood thinners or different things. So it's not like a blanket let's put everybody on an aspirin.

What it does tell me though is hydrate, make sure you're getting your omega-3s up, get the damn omega-6s much lower or out of your diet. Maybe if you want to be taking something on a regular basis prophylactically, a proteolytic enzyme might be a good idea because aspirin won't go after the fibrinogen, and fibrinogen tends to be one of the biggest drivers of a cancerous process. So having things like fish oil fibrinogen, natural COX-2 inhibitors such as turmeric or ginger, those are the things that I would rather you have taken in every single day versus that simple baby aspirin which, of course, it was like oh, it's simple, it's over-the-counter, it's cheap, it's easy, but it had just as many side effects with it as anything else and so it can cause harm. I think we need to think about well, what's the mechanism, why is it working and let's go that route instead.

Robb: Right, right. No, I love that more nuanced approach. But even within that story, like the notion that the bulk of the population if they just did a baby aspirin they could potentially dramatically reduce their risk of developing say breast cancer in particular. That's a very well-hidden topic within standard cancer circles, and to your point then, asking the question well, what is aspirin doing and what else could we do to affect what aspirin is actually up to without some of the side effects. But you know we're not even at that level. Like still basically you have to be a private detective to discover that aspirin even has efficacy in this stuff.

Nasha: And we still understand its mechanism of action much less asking those right questions.

Robb: So Doc, clearly this is a multifactorial story. You've already alluded to that. We've talked a good bit about nutrition, but if somebody holds a gun to your head and they're like do one thing to reduce your cancer risk, what is it?

Nasha: Wow! That's easy. I don't even have to think that. Joy and laughter are really powerful immunomodulators. They are very powerful cell signaling to the epigenetic cell signaling modifiers. They oxygenate your body. They release endorphins, which have a lot of anti-inflammatory effect. They connect you to another. The oxytocin release is huge for our HPA access, for our neurological functioning. It stimulates BDNF, so it helps the brain expand and make new neural pathways. It is good stuff.

Robb: I love it. I was expecting sleep or circadian rhythm, which clearly re important, but laughing sounds. Who was the guy that had a terminal cancer diagnosis? Was it Cousins? And then he just bought a bunch of humor books.

Nasha: Yeah, I think that is.

Robb: And he sat down and like laughed and laughed and laughed and he was cancer-free throughout the rest of his life. I think he lived like another 40 years or something. I like that and there's so dam much good material on YouTube these days with standup comedians and whatnot. Whatever type of twisted stuff you find funny you can find a lot of it these days. So I really like that.

Nasha: Actually, you gave me a good laugh this morning because one of your friends or a few of your friends gave you a post of JP Sears with the jiu jitsu. I'm still laughing hysterically. Watching another JP Sears video always makes me laugh.

**[0:40:38]**

Robb: I see what that guy does. I've kind of devoted my life to helping people, but there's this irony that if you can make people laugh, like that's everything. When you look at my wife and you look at me, you're like why on earth did she go for him? I could cook, I have warm feet, and I made her laugh. So that's kind of the back-story.

Nasha: Oh, good! That's a good one. You could make me blush.

Robb: Yeah, when she got chronically cold-footed because at this point she was still vegan and not profusing quite as well as she should, I came in handy during the winter. So I was basically a foot warmer and somewhat of a diversionary tactic for her.

Nasha: Nice. So good.

Robb: Doc, I love the work you're doing, so impressed with what you're up to, impressed with this book. Remind folks what the title of this book is, where they can track it down and where they can find you on the interwebs.

Nasha: Great. Well, the interwebs, you can find the book *The Metabolic Approach to Cancer* which I co-authored with my colleague Jess Higgins Kelley. She runs Remission Nutrition which is fantastic, very cancer-centric nutrition coaching, so folks were feeling like they need a little more help in getting a handle on how to apply the diet to their cancering process. She's a great resource for that. If someone wants a little more help going deeper into the whole terrain to understand how and why they got here, let's look inside the bucket together. That's [optimalterrainconsulting.com](http://optimalterrainconsulting.com). And then also on Facebook you can find Optimal Training Consulting, Remission Nutrition and *The Metabolic Approach to Cancer* all over the place so that you can keep following what we are up to.

I know you made mention to this earlier, but I do want to just put a little plug out coming out September 2018 since we didn't get to the topic today on mistletoe. You are in luck because fall 2018 we have a book coming out on mistletoe which I'm very excited about.

Robb: Fantastic! Well, let's get you back on the show when that thing drops, and we'll chat some more and then dig into the magic of mistletoe. Usually, people think about either smooching or some vague idea that if you ate a lot of the mistletoe it would probably do you in. But I have been following the research on it and it's a fascinating adjunctive treatment in this cancer story.

Nasha: Definitely, definitely. It's just a fun little thing since it is kind of a holiday-centric. People know it as kissing under the mistletoe, but it goes way back to kind of ancient times and that mythologies around it say you could be given a sprig of mistletoe to go into the Underworld to bring back your loved ones and they called it the kiss of life. So thinking of just sort of the timing, so winter solstice, the darkest time of the year, it's often got a lot of death association. It's interesting that we bring back the light, we bring back life with a kiss of mistletoe.

Robb: Fascinating. I like it. I like it. Dr. Winters, thank you so much for coming on the show and again, looking forward to seeing you in real life again. We got to both attend Ancestral Health Symposium up in Seattle. I mainly did janitorial work; you actually did some speaking, so aces in their places on that. But are you going to be anywhere else doing speaking engagements coming up soon?

Nasha: Yeah, I'm going to be speaking at the Acres Conference, which is super cool in two weeks in Columbus, which is the biodynamic organic agriculture. What a cool venue because I get to talk about the inner soil to talk about how we can

heal ourselves with the outer soil. So that's a cool thing coming up. And then next year I've got a bunch of talks in the Appleseed, speaking again at Low Carb USA in San Diego in July, I'm speaking at a big huge mistletoe conference in September—that's when we're unleashing the book. That's in Germany. Speaking at a big international naturopathic conference in July in London next year. And then also I believe, hopefully, getting an abstract into the Metabolic Therapeutics Conference. It's always been on by D'Agostino and his team. And then also hopefully, Ancestral Health again. I really love that venue. So I'll be busy. I'll be busy.

Robb: Okay. Well, I look forward to seeing you again soon, and thank you again for all your hard work.

Nasha: So appreciate it. I just love you, Robb. I'm a little bit star struck.

Robb: Thank you. My wife will cure you of that immediately. She'll be like, "He's an idiot," but yeah.

Nasha: Right on! All the best. Thank you so much for the opportunity.

Robb: Thank you. Talk to you soon.

**[0:45:08] End of Audio**