

Announcer: Bulletproof Radio, a state of high performance.

Dave: You're listening to Bulletproof Radio with Dave Asprey. Today's cool talk of the day is about elephants and that's because elephants almost never get cancer, which is kind of surprising given that they grow really large and they live a long time, which ought to provide more opportunities for the cells to turn into cancer cells. The reason for this is probably a newly described gene that was brought back from the dead that they think is now protecting them from disease. When scientists looked into the elephant's evolutionary history, they found a defunct gene called LIF6 that somehow got turned back on 59 million years ago when elephants started to get really big. It's found only in elephants and their relatives. It's triggered by another gene called TP53, which puts cells out of commission at the first sign of damage before they turn cancerous. The TP53 gene makes a protein that protects cellular DNA damage and signals for the cell to basically fix itself or die, which is what we want our own cells to do. Elephants have 20 copies of the TP53 gene compared to just one in humans and other mammals like us.

Dave: Studies where they looked at autopsy data from the San Diego Zoo in a database of 650 elephant deaths found that just about 4.8% of them get cancer and for humans, it can go as high as 25%. What that means is that not only do I want to be part elephant because of the cancer thing, but elephants have a good memory and they live a long time, so maybe my spirit animal is the elephant, not the naked mole rat. I'm still trying to figure that one out. If you like Bulletproof Radio, I'd love it if you took about 10 seconds and went to bulletproof.com/iTunes, which will take you straight to Apple, so you could just leave a five star review and say, "Hey, Dave. I laughed about your elephant joke there."

Dave: Today's show, as you know, I'm mastering the art of foreshadowing very, very carefully here, might have something to do with cancer, but not just something about cancer. We're going to be talking with a nationally board certified naturopathic doctor, a fellow of the American Board of Naturopathic Oncology, and someone who also studied acupuncture and Oriental medicine and is licensed in both of them. I'm talking about none other than Dr. Nasha Winters, who is the author of *The Metabolic Approach to Cancer*, which was a bestseller in 2017 and really one of the great books on cancer that's worth reading. She's based in Durango, Colorado and is the former CEO of Optimal Terrain Consulting, where she taught people about highly personalized integrative oncology care.

Dave: The reason I have her on the show today is that we're not just going to talk about cancer, although frankly, a large percentage of people are facing that sometime in their life, but we're going to be talking about ketones and metabolism. Funny enough, all of us have metabolisms, so this is a highly relevant show. Dr. Nasha, welcome to the show.

Nasha: Thank you so much. It's a joy and honor to be here. My husband's a little bit jealous, I'd have to say. I told him I'd give a shout out for him to you, so yes.

Dave: Well, tell him I said hi.

Nasha: Okay.

Dave: I would've come there to Durango in person to interview you, but I have PTSD around Durango. You want to know why?

Nasha: Yes.

Dave: When I was around, I don't know, eight or 10 or something like that I was sleeping in a log cabin by Vallecito Lake. I woke up with a vampire bat feeding on my neck. I grabbed the thing. I was on the top bunk bed. I thought it was a mouse because I'm thinking vampire bat, they don't live here. I went to throw it on the floor to kill it or something and it bit my thumb and when I threw the floor, it never hit the floor. I'm like it's pitch dark. I don't know where my flashlight is. I'm trying to wake up my sister and she didn't believe me. No one believed me. I'm like, "No, there was something. It bit my neck." Finally, I was insistent of we got flashlights and we caught the vampire bat. We took the vampire bat to Mercy Medical Center. You know where this is, right, because you work-

Nasha: Actually, it's right by my house or the old one, yeah.

Dave: We brought it there in a plastic pitcher from the hospital, actually, and it's just kind of flopping around, a bat halfway injured. We called every rabies expert in the country. They all said pour ether in there so we can freeze the bat and look at its brain to see if it has rabies. We're in the ER. We pour ether into a plastic pitcher with a vampire bat inside it. Ether melts plastic, so what happens? You have a half dead bat covered in plastic goo on the floor, flopping around, every nurse up on chairs screaming and I'm sitting there with two little V marks on my neck. This actually happened. I'm the only person ever to have bitten by a vampire bat and it was in your hometown, Nasha.

Nasha: And you've not been back since, which I don't blame you.

Dave: No, I haven't. I grew up backpacking in Colorado. Anyway, that's my favorite Durango story ever. Now everyone knows yes, I've actually been bitten by a vampire bat and it explains so much, doesn't it?

Nasha: Oh, my gosh, and funny thing is this year, my cat brought us a vampire bat to the house a few weeks ago, which my husband-

Dave: An actual vampire bat, not a New Mexico bat?

Nasha: An actual vampire bat, oh, yeah. Then my husband kept it in a little box in our bathtub and I kept telling him it's time to put it elsewhere, so he finally did move it into the greenhouse and it finally took off. We have had an outbreak of rabies in bats in our community, so I'm laughing that you're having this story, but yeah, so ...

Dave: Because they're not native.

Nasha: ... PTSD is really ... I know. It was huge. I've never seen anything that's so big in the bat world because we're used to seeing really cute, little, furry, like little mice with wings. Oh, no, this guy was horrific, so you're giving me PTSD just hearing your story. Dave, before we go further, everyone does this. It's so common, but my name is with a long A, Nasha. Think echinacea, Nasha.

Dave: How could I not know that, Nasha? I should've checked before the show.

Nasha: Because everybody does it, even my relatives, so you're normal, I guess.

Dave: Where is Nasha from?

Nasha: Oh, my gosh, named after an ex-girlfriend of my dad's before he met my mom. It's a Turkish name. He was stationed in Turkey and my mom and my dad probably never thought I would learn about the actual origin of my name, so it's pretty funny.

Dave: I was going to say Russian. That's why I did it, but anyway, Nasha. I've got it. Thank you for telling me.

Nasha: Yeah, no worries.

Dave: All right. Now everyone else knows how to say it right, which is great.

Nasha: Yeah, exactly.

Dave: Now, you have an interesting background in that you've studied both Western and Eastern med. Every time I've talked with someone who's studied both sides, they're always better off than someone who knows one side or the other, but generally, isn't it sort of like the mark of shame for a Western doctor to study acupuncture because everyone knows that's a bunch of BS, right? What drove your decision to be one of those doctors who doesn't just wear a lab coat and give out drugs?

Nasha: Well, my decision to not just be one of those doctors, which is what I initially planned to do, was thanks to those doctors sort of falling far from the pedestal in my own journey of health. I was very, very sick at a very young age and Western medicine, despite my being enamored of it and wanting to study it and in premed for it, failed me and so I had to frankly save, one of my patients calls it Save Your Own Ass University. That's what I had to do. The Eastern-Western blend for me, because I started in that scientific realm, made sense to bring them both together and I cannot imagine a life without both in the sandbox with me.

Dave: It's a really common driver for some of the very best healers and doctors that I know who have just a broad-spectrum view of healing. They'll say, "I'm going to do whatever works and if I don't know why it works, if it works reliably, I'm okay." It's usually people who got really sick and I see it over and over. A lot of doctors, whether they're from one tradition or another, if they haven't faced it themselves and had to say oh, my god, I

need something from outside the box, I look at what you do as sort of the mixed martial art of medicine.

Nasha: That's perfect.

Dave: It really is, this idea of well, I have to win because someone's going to die here if I don't win and that someone is me. You're willing to do something well, that wasn't in the karate tradition. It doesn't matter. You kicked the guy in the knee, whatever, so thank you for having the courage to do it and the courage comes from I don't want to die, which is cool. What happened that made you so sick?

Nasha: Stage IV ovarian cancer happened at 19.

Dave: At 19.

Nasha: Yeah, and missed for it was actually right around just two weeks past my 20th birthday when I got the official news that I was spending my entire 19th year on this planet in and out of ERs over and over and basically being pegged as that crazy, histrionic woman that was in our ER a couple times a month for months and months on end and so by the time I filled up with eight and a half, nine liters of ascites and was in end organ stage and looked like little stick arms and legs with a giant Buddha belly, finally someone decided they should probably do some other scanning and imaging and blood testing.

Dave: Wow, so that would definitely be a failure of Western medicine.

Nasha: Yes. Yeah.

Dave: One of the things I learned when I shot moldy, that I commune around toxic mold, was that in medical school, they teach you that if a patient has more than maybe five symptoms, by definition, they're a hypochondriac because diseases don't do that. Is that what you were facing?

Nasha: Totally. I'd show up and they just kept funneling me into this well, she's got to have just a little histrionic behavior. She's got to just have an STD. She's got a lot of pelvic pain. I was the zebra. No one was looking for a ovarian cancer diagnosis in a 19-year-old in 1991, 1990, '91. I mean, just in the last couple months, I've seen a six-year-old and a nine-year-old with stage IV ovarian cancer, so we know things have changed in the last couple of decades, but 27 years ago, that wasn't the case. You're right. I just got kind of pegged as and they always thought I was a drug seeker despite me saying, "I can't take these drugs. They make me terribly sick." I'm like that's even worse and, of course, years later, when we learned about epigenetics and I started learning about that and myself, it explained why every medication I could've ever taken or have ever taken has backfired horribly, so been a living experiment ever since.

Dave: The whole drug seeking thing, it's annoying. My wife is a drug and alcohol addiction emergency medicine doctor from Stockholm. She does fertility work now, but she tells me these stories. Drug seeking is real, but when you have someone who has an actual

problem, it's within the doctor's necessary behavior to do that. I had the same thing. I went to a psychiatrist when I was going to work. I'm like, "My brain isn't working. Something's wrong, really wrong." It turns out yeah, I had mold and some other stuff, no blood flow in the brain, etc. He thought I was just oh, this guy wants Adderall for business school. God, I see these all the time. When I walked in after he saw the lab data, he's like, "You have the best camouflage I've ever seen. Inside your brain is total chaos. I don't know how you're talking to me." I'm like, "There. Now will you give me some drugs and the drugs you gave me made me feel like crap." Right?

Nasha: Right.

Dave: This is [inaudible 00:11:45] work, but it's that same story. No one believes you and you have to come in almost with your fists in a ball, like I'm ready to fight, but you actually have to partner with a doctor to make anything happen, so you got to find the right doctor who's going to at least believe you.

Nasha: That's huge. That's huge and so part of the strategy for staying well today is having your team, your power team of your healthcare providers. You should never lean on just one to help you get through this.

Dave: Yeah, having a collection of people you trust who know your case is important, but it's expensive and it's different when you're 19 and you're dealing with oh, my god, something's really wrong here. Thought you were going to do it. A lot of people don't hit that until their mid-30s, but the sooner you have a couple people you really trust who are going to keep you on this is going to work really well.

Nasha: Yeah.

Dave: Now you're 27 years after this big thing. You've written some powerful books about what's going on with metabolism and cancer. You actually gave a talk called Empowering the Powerhouses: Biohacking Our Mitochondria at a cancer conference. I'm like you go. Go Nasha. This is important stuff because some percentage of cancer is not genetic, which we used to think it all was and, in fact, it's mitochondrial or, perhaps, fungal. In your clinical experience, your belief, and it's okay if you cite studies, it's okay if you say, "This is what I think," what percentage of cancer is caused by epigenetics or the environment around us or our bodies responding to it versus genetics versus some infectious thing?

Nasha: Oh, I love that question. I've never had it quite asked that way. Most people just say, "How much is genetic?" We kind of focus there because that's where we've been hanging out for 70 years. Really, the answer, and there are studies and I won't cite them right now, but they're in our book and other places, but we actually are able to show that probably 90 to 95% of our chronic illness, which includes cancer, is epigenetic mitochondrial damage-centric in nature and not actually a genetic hiccup that is absolutely out of our control, which means that we are far more powerful than we've been led to believe.

Dave: It is the core definition of biohacking is changing the environment around you and inside of you so you have control of your biology. What's missing from the conversation around epigenetics is that what are the smallest parts of the body that sense the environment first? They're mitochondria. They're not just powerhouses. They're sensors.

Nasha: Exactly, exactly.

Dave: They're driving all these other behaviors and I agree, it's got to be 90% plus from everything I've seen, but I've had a guy on the show says, "No, it's all genetic. Here's all the data and within five years, with just looking at our nuclear DNA, we'll be able to fix almost all cancer." I just didn't believe that, but if you believe his assumption that cancer is genetic, then what he's saying is totally true. How do we know if we're looking at the right assumptions when you go about solving a problem? What's your thought process like when you're writing a book or when you're doing that?

Nasha: Well first, I think one thing that came to mind when you shared the story of talking with this guy, I heard that lecture. I heard that interview by the way, so I'm intrigued because I want to hear all aspects of it. I don't ever throw everything out. It's all pieces of the data come into the sandbox with me. One of the things you started the talk off today with the elephant story and you talked about the TP53 gene. Okay. This little guy is damaged in about 50% of the population, meaning it's not behaving as the best gatekeeper of our genome as it should, already, in 50% of us living on the planet today. That's on average.

Nasha: When you add insult to injury such as you had to take a round of Cipro or you just took a massive amount of chemotherapy or you just had a major mold or fungal toxic exposure, that poor gene gets even more shut down. It gets even more suppressed. That little gatekeeper, partially what that guy is saying is true. He's just looking one or two steps downstream and yet, what we actually are starting to find is you need to back it up a few steps to realize that our DNA, our genes will not be damaged or will not be irreversibly damaged if our mitochondria are healthy enough, vital enough, efficient enough, effective enough to protect that process, so I think that he is still straddling that world that's still very gene-centric because it's been a 70-plus year experiment. It's hard to let go of, but ultimately, we need to back it up a little bit further down to what is protecting those genes to begin with and that comes back down to the mitochondria.

Dave: Well, we're definitely in agreement there on this mitochondrial importance. For me, cancer is one of the many things, but I couldn't find anything when I was writing Headstrong. Diabetes, yeah, mitochondrial, they can't use sugar. It's not an insulin receptor thing as much as it is an energy use thing. You look at Alzheimer's, you look at heart disease, you look at Parkinson's, everything is mitochondrial. Even your response to an infectious disease, if your mitochondria work well, you're going to kick its ass and if they don't work well, it's going to kick your ass.

Nasha: Exactly, and what you said earlier, like the TP53, if that's not doing its job, it does not discern the unhealthy from the healthy cells and when the unhealthy cells start to pick up momentum, it can't do anything about it and so the mitochondria are, in fact, the

garbage collection and removal system. They are the first line of apoptosis for any damaged cells, whether that's from an infectious nature, a chemical assault, a stressful experience and so when you asked how do I assess this, in all my clients, I start with this questionnaire.

Nasha: Actually, the questionnaire is in the book *The Metabolic Approach to Cancer*, but that's 20-some years of me figuring out that there's kind of 10 main patterns, probably, that folks are dealing with when those little mitochondria decide to go on sabbatical. That includes things that go into their mitochondrial bucket of things like stress, blood sugar imbalance, hormone disruption, circadian rhythm disruption, chemical stressors, circulation issues, so angiogenesis, as well as just are you oxygenating well, inflammation, immune system issues, microbiome, ginormous. It's all of these facets. If you ignore any one of them, chronic illness can still keep on trucking down the road. You have to keep looking into the garden and plucking the weeds as you go and amending the soil all along the way.

Dave: One of the things that you look at in your overall the way you deal with patients and this is on your website and it's in your books and all, but you talk about ACE scores, adverse childhood events, emotional trauma as a child related to cancer. You're not wearing a burlap sack and you don't have dreadlocks, so how can we have this conversation? You know what I mean? That's considered so hippy. Walk me through the science on that because that's totally real, by the way.

Nasha: It is. It is. Right now, you could actually do a score for your experience with the bat in Durango all those years ago as one of your adverse childhood events, but all kidding aside, when I started ... After my diagnosis, I was a biology-chemistry major prepping for med school. That was my track, but after my diagnosis, I had some survival experience that made me understand that a lot of my cancer diagnosis came from a lot of trauma. I don't know how or why, but that was very intuitive for me because it was definitely in 1990, 1991 not talked about. I wasn't in dreadlocks. I didn't have a tinfoil hat. I was a scientist first, but like you said, I needed to save my life.

Nasha: At that time, I started running across the work of people like Bruce Lipton, like Candace Pert. This was at a time when the concept of psychoneuroimmunology was new to the stage. That conversation had never happened before. In fact, after my diagnosis, when I was sent home to die because I was too sick, they didn't even think I was well enough to take chemo or anything else. That's how shut down my organs were, totally jaundiced, the whole bit. I was sent home to die and so I went to the library and instead picked up a book called *Quantum Healing* by Deepak Chopra in 1991. You got to remember, I'm a kid from Kansas originally where evolution is not allowed to be taught in the school system for years and years to coming to a place where I've got this Indian doctor telling me that you can make a shift, a paradigm shift, in an instant. I read that book in two hours, sitting on the floor, bawling my eyes out in the library and started to explore things that he talked about in that book and stumbled across the likes of Candace Pert, these amazing microbiologists and Selma [Leck 00:20:58] a physiologist that are out ...

Dave: For people listening, Candace Pert is the woman who discovered the opiate receptor in the brain and just this amazing NIH doctor. I didn't get to interview her. She passed

away before I had a chance, but I did interview Bruce Lipton and she's I would call her the mother or grandmother of psychoneuroimmunology, which is looking at what happens in your emotional body and how it affects actual receptors on your cells. Her own life is this sort of angry scientist evolving into yes, I do meditation and now everything changed. Her book, *The Molecules of Emotion*, is something everyone who listens to the show should read.

Nasha: Yeah, life-changing, life-changing and so because of her, I changed my major from chemistry-biology to psychology-biology. That became at that time, in the early '90s, a self-constructed psychoneuroimmunology major. I have never looked back and so that is what drew me into the realms of Eastern medicine and philosophy. That's what drew me into the realms of psychology, psychiatric issues, which just caught me on fire and frankly, gave me a path to traverse through my own process.

Dave: You mentioned trauma and pelvic pain, particularly in women. I work a lot with functional medicine doctors and people like that and a few of the more progressive ones who are dealing with things like endometriosis and just otherwise unexplained pelvic pain, some of them, off the record, are saying, "Dave, I think 90% plus of the time there is a history of abuse, emotional or otherwise, and that that's the missing gun and that if I don't do something to either treat the patient or get them to treat it with some sort of trauma release thing, no matter what medical interventions I throw at this, the body won't let go." Does that match your understanding of the world?

Nasha: Not only does it match it, it is precisely where it came from. It is precisely what inspired me to go into the mind-body aspect of this and it's also been my experience of working with, at this point, tens of thousands of patients over 25 years and asking that question. I have found I could probably count on one hand of people with a history of pelvic cancers of any kind or pelvic pain or some type of process along sort of the lower jawl from a Chinese medicine perspective, I've only maybe found a handful that actually claimed to never have had any sexual trauma and so it really correlates very well.

Nasha: To come back around to the ACE score, the adverse childhood events, it's just a simple questionnaire, 10 questions about particular experiences had before the age of 18 that we know changes epigenetic expression and causes things like breakdown of our TP53 function. Basically, for every yes you have on that 10 questionnaire, your likelihood of having a chronic illness or cancer in adulthood goes up 20%. Just with maybe a little TMI, but I had a 10 out of 10 on my ACE score and no wonder. That's like a giant aha. In fact, learning that about myself because this information started being studied and put out there in the '80s, so when I started looking for this in the '90s, I found it and frankly, it was a life raft for me because it helped me actually feel not so traumatized to deal with a trauma and luckily, I stumbled upon the first EMDR practitioner in [inaudible 00:24:45] ...

Dave: No way.

Nasha: ... in 1991. I mean, come on. She was way ahead of her time. I mean, there's so many moments that aligned in my life, an acupuncturist and this private doctor that had brand

new started in this town that everyone thought were kooky, hippy folks that frankly are part of my story of health and healing.

Dave: It's awesome that you're willing, able to talk about that. I've seen enough times, too, where there's people say, "Oh, I had nothing bad happen," but I run 40 years and people do really deep altered states work with neurofeedback and all and I've seen at least one person there and a couple people in other similar things where they come out of this really deep meditation, go, "Oh, my god. I just remembered I was abused for five years and it was totally missing from my consciousness," so some of that happens. There's some people who they got an infection and they didn't have any trauma, but the trauma removal techniques today are much stronger, if people know trauma exists. EMDR is a very powerful one. For people listening who haven't heard of it, eye movement dissociative response and this is a thing you do with a therapist. They move your eyes back and forth, put your brain in trauma reset mode, and you can let go of stuff.

Dave: If you were 10 out of 10 on an ACE score, you can, at least, I can quite often you look at someone and you can sort of tell if they're carrying a lot of trauma and anxiety because it's how you sit. It's how your eyes look at ... People who do that kind of work, you can tell. You don't really have a lot of that going on. I'm looking at you over Skype. If you were 10 out of 10, so you were a highly traumatized person through no fault of your own, but you've done a lot of healing work that I suspect was not medical. You mentioned EMDR. What are the other big things that let you become who you are today, which also, by the way, means removing your cancer risk, but walk me through the technologies you used to just drop all that old crap that wasn't yours in the first place.

Nasha: Wow, that is interesting. I've touched on this in a few podcasts, but I've never been asked to put it all in one container. EMDR was critical. The other interesting thing and I love that your wife works or had a history of working in addictions, I put myself through college working as a CAC drug and alcohol counselor and night shift, so that should also explain why it took me a little while to figure that was a problem. Interesting in the Four Corners where I worked at that time, we sit on four Indian reservations. At that time, it was a residential, in-house drug and alcohol center, as well as a psych unit, so we had-

Dave: It's a super poor part of the world with lots of drug and alcohol problems. I grew up in New Mexico, so yeah.

Nasha: Oh, so you know it? That's right. You're right. Your neighbor, so right there, but what happened, though, is we had a lot of shamans as part of the healing for these, so I would be invited to sweat lodge. I would be invited to ceremony. I would be invited to things that again, I'm from Kansas, okay? My grandma, when I went to naturopathic school, said I was going into witchcraft, so just to give an example here. This was very new world for me, but because it was part of my job, I was exposed to things and had experiences and saw things that were, frankly, not possible. Part of seeing that helped me realize I didn't have to be put into a box of possibility either, that anything was possible, so that definitely informed.

Nasha: Then another critical piece that landed in about the same time was an experience psilocybin cubensis and-

Dave: Mushrooms.

Nasha: Exactly, and so to me, the combination of a rewiring of my brain that was critical for me to realize the types of grooves I had built with my neurochemistry were so deep and so obstructed that without something to lift me up and see what was around me, that ability to see the possibility of my own healing was, frankly, impossible. The groove was so deep with my trauma history. Those were, to me, if I had to pick top three, those were it and since then, 27 years later, I've kind of tried it all on for size. I'm fascinated by ways that we can re-circuit our psychology, re-express our epigenetics, upregulate, and so I kind of jokingly say that naturopathic doctors were the original biohackers and that's why I was so drawn to you and your work is you were taking it from like I'm taking it from old school, nature cure, Eastern ways of being. You coming from the tech world, it's like we are finding a really cool common point and actually, the center point to me looks like we are landing on the science that seems to be the intersection of a lot of these pathways.

Dave: There is a lot of dogma on both sides, so there's the I don't know if it's called ultra hippy, ultra I would never touch a pharmaceutical. I would never use technology. Oh, gross, keep your cellphone away from me. Then there's the flip side, which is well, there isn't a double blind clinical trial funded by a drug company, so clearly, it can't work and, therefore, you're a bad person. I came from that world, actually, but when you look at the data from either side, you end up with this fact that sometimes drugs work. There's really good things you can do with Western medicine, but if you ignore all the soft stuff, the data shows it doesn't work.

Dave: Your answers are, thank you for the courage to just say it, yeah, I did EMDR, I did mushrooms, and I saw a shaman and I got better. In my own path, let's see, what did I do? I tried all the Western stuff that didn't work. I went to Tibet, learned meditation from the masters. I did ayahuasca with a shaman in Peru. I did a lot of holotropic breathing and I did a lot of neurofeedback and got to where I am today also by removing old traumatic patterns. I see CEOs. They come through the 40 years in stuff. There's no one without traumatic patterns that are affecting how they treat other people that they're entirely unaware of. Some of them have a lot. Some of them have a little. It seems like these are things, they're not infections, but they're things that are not working well in your software instead of in your hardware. When you fix those, the hardware works better. You agree?

Nasha: Oh, my gosh. It was so beautifully said and I think that you're spot on that we all carry some degree of an imprint of some trauma of just like the bat in Vallecito. We joke about that, but you're probably a little flinch-y in mountain cabins in the middle of the night at times.

Dave: I've been to the bat caves in southern New Mexico there and yeah, I don't have a thing about bats, but I have my own set of things from being bullied and even traumatic birth. You've delivered 36 babies. I've only delivered two. They were mine. I had birth trauma.

That was a core part of the way ... I don't think the world's a dangerous place. I didn't believe that necessarily, but my nervous system did, so until you get over that crap, you're probably going to act like a jerk.

Nasha: Well, just it keeps putting you into same patterns over and over again. When someone keeps saying, when I hear a patient or, frankly, myself say why does this thing keep happening to me or why do I keep ending up with the same type of friendship, relationship, job situation, yada, yada, yada, that's when you have to look inward because the common denominator of that is you. That's hard. That is the most difficult ... That's why the last chapter of our book is on the psychology side of it because it is often the hardest and scariest Everest to hike of all the things. People love to do the tangible, measure out their food macros and check their blood ketones and even take their little questionnaires. They love that, but when we start to talk about crawling into the muck of it, that's not so easy.

Dave: That's why for me, neurofeedback worked really well because you have a data-driven lie detector. You're like oh, I guess I can't hide from that because the sounds get quieter, so then it forced me to face every inner demon. At this point, if I have any of that stuff, I'm like I'm wiring myself up. I'm going to go in there and knock that out, so I don't want to have unconscious reactions to the world just because why would you do that?

Dave: You mentioned something pretty powerful in there, something that I'm a huge fan of and early supporter of and that's ketosis. I've noticed that when I have ketones present, even just low level ones, my ability to meditate, to do healing work on myself is much better. That's emotional healing work, but you're talking about in your book especially how ketones are just fundamental to cancer, so let's shift gears a bit. We know emotional trauma matters and ketones also matter. Tell me about ketones, why you think they work for cancer, how you use them, and just what's your approach.

Nasha: I think when we start talking about, so a little backtrack again. In 1990, 1991 there was no Dr. Google. In fact, I worked in a library on work study. There was the Dewey Decimal System.

Dave: I remember it well.

Nasha: In my small liberal arts school, we did not have a fancy library, so we got all the defects, so what I had access to were very old textbooks and in those old textbooks, while I was leafing through what is cancer and what the heck do I do about this because no one else was going to save me, I stumbled across the work of Otto Warburg.

Dave: Oh, nice.

Nasha: Thank you for not having modern technology so I could look at something from the 1920s that had gone out of favor after Watson and Crick got cranking with their double helix. That being said is I started to understand I could manipulate the engine of my body with the fuel sources that I provided it, whether it was fasting, which was an old nature cure approach, which that was also free because I was starving undergrad

student, so that was a really good way to approach it. At that time, the only information out there available to cancer was Gerson as kind of a raw food vegan, but when you actually look at the father Gerson approach to modern Gerson today, they are very different animals. If we want to cover that later, we can come back to that, but ultimately, that was this place I started adapting within myself. I started bringing on fasting very early on and it made the biggest difference of any tool that I threw at my cancering process. It stabilized things immediately in my own body.

Nasha: Let's fast forward all these years later that what I-

Dave: I saw you did there, fast forward. That was funny.

Nasha: Oh, bop-bop. I went to medical school in 1996 and decided that cancer would never be part of my practice or part of my experience. I was wanting it out of my life as much as possible. I didn't even tell. In fact, it's only been in the last couple years that I really shared my story because of the reaction I get from doing it the way I did it. That being said, my first week in private practice a gentleman comes in in a wheelchair unable to walk, unable to talk, in excruciating pain, sent to me for pain management with acupuncture. Okay. I realized right away that his parietal lobe is bulging out and it becomes very clear to me what I'm actually dealing with. He had been diagnosed with terminal brain tumor, was given days to weeks to live because his ventricles had closed down on his CT scan. I thought I was just doing end of life supportive care.

Nasha: Now, he was seizing unbelievably. Nothing was touching it. He was on every pharmaceutical you could imagine and the only thing I knew to do, per the literature, even though I'd had my own experience with this, was a ketogenic diet. This gentleman lived 18 more months on a ketogenic diet, basically me pulling it out of my ass in 2000, 2001 because there was no Miriam Kalamians or Thomas Seyfrieds or Travis Christoffersons in the world to guide us on this. I was petrified, but there was nothing else. I was end-of-life care, so I thought well, if anything, one of the things I was reading about ketones was its antiinflammatory property and his brain was clearly inflamed. This man, within weeks, within two weeks, was out of diapers, out of a wheelchair, able to talk, able to have quality of life. In fact, the weekend before he died, he was up in the high country looking at the fall colors with his family and he died peacefully in his bed with his three little kids and his wife next to him, just a whole different experience than the excruciating exit he was initially taking before we met.

Nasha: The universe had a very different idea for how I was supposed to work with patients and cancer in particular, which, at that time, I knew if I said I'm putting people on ketogenic diets, I would get stopped before I got started. I'm a naturopath in an unlicensed state, ketogenic diet. Still today it is very controversial, so all I did was talk about I put people on low carb diets and that was the safety mechanism of what we called it and that, even then, everyone thought I was batshit crazy saying things like low carb diet. Oh, sugar has nothing to do with cancer. We still weirdly hear that, despite the mountains of evidence speaking up to that otherwise.

Dave: That's just crazy pants at this point, like someone who says that, it's like do you read?

Nasha: Exactly, like maybe remove head from butt to take and it drives me crazy. Ultimately, that has been kind of the foundation of the work that I've done. What I witnessed long before Travis and Thomas and Dom D'Agostino, all these guys came to the table was that this had an impact on many mechanisms, not just lower sugar to starve cancer. In fact, that seems to me like the bottom of the ladder.

Dave: Cancer can eat ketones, too.

Nasha: Well, at least in laboratory, in cell lines. We don't really see that in humans. I do fight that one a little bit because I've been doing this for so long. There's a lot of BRCA patients, a lot of colorectal patients, a lot of prostate patients, breast cancer patients that I keep hearing out there saying oh, it's not good for these patients. I'm like then you should talk to the hundreds of mine that are still kicking on it.

Dave: The antiinflammatory stuff trumps that effect. It's not like you need to starve the cancer. You need to turn the metabolism on it and ketones will do that, so I'm with you there.

Nasha: It's just this little change in the pedal to the metal on this, so ultimately, what has happened is people like Dr. Adrienne Scheck's work are able to now show that ketones impact all 10 of the 10 hallmarks of cancer. We don't-

Dave: Walk me through the 10 hallmarks.

Nasha: Okay. Well, forgive me while I pull out my book because my brain does it to my patients population in a very basic conversation about the theory-

Dave: I get it. I pull my book out, too, because it takes thousands of hours to write a book and it doesn't mean you memorize every hour. I get it.

Nasha: Yes, that piece, and for me, it took two decades, so there you go. Number one, sustained proliferation of cells. Hello. There was that TP53 conversation we had in the beginning. You don't have something to turn that off. One of the things we noticed is that ketones upregulate TP53 activity in the way we want it to. Number two, insensitivity to antigrowth signals, so they become like little rogue toddlers who just ignore anybody telling them to put their shoes on. They just ignore you, forget any signals coming their way, and they just do their own thing. That's a hallmark. Another hallmark is the evasion of apoptosis. Now, that comes directly down to the mitochondria. The mitochondria are in charge of apoptosis.

Dave: Which is, basically, programmed cell death of cells that are bad, for people that don't know the medical term.

Nasha: Exactly. Then limitless replicative potential. Now, we all have this sort of inner you should be able to recycle this particular cell a certain number of times before it gets worn out and dies and moves on, but with cancer cells, it doesn't do that. They recycle, but they get weaker and weaker and more rogue and more mutated and more difficult

to kill and more difficult to see across the board, so that's another one. Sustained angiogenesis, so one of the coolest things we've learned about ketogenic diets is that it seems to cut off that vascular blood supply to the tumor. Again, another challenge we have in conventional oncology. We have about 26 different mechanisms of angiogenesis and we have one or two drugs that we throw at it and ironically, it's like a whack-a-mole game, so we might shut off one, but frankly, we wake up the other 25 sleeping tigers.

Dave: Don't you actually want angiogenesis for longevity?

Nasha: You do. That's the trick here is that-

Dave: Hold on. I'm just going to take a little bit of oral nicotine.

Nasha: Speaking of ...

Dave: Which drives angiogenesis, which is good for you, unless you have cancer, in which case maybe you ought not to use it. Anyway, sorry. I'll get off my nicotine horse there.

Nasha: No, get on that nicotine horse because the body is wise to say these cells over here need it. These cells over here don't, but when we bring pharmaceuticals sometimes into the mix, we try and completely turn on or off a switch and yet, we are these complex, dynamic beings that sometimes we need to heal a wound and sometimes we need to let the wound know that it's healed and done, so that's a biggie that keto kind of gives a smart bomb of you need to stay, you need to go in the process. Then a couple of the others, the ability to metastasize. That's a biggie because once we get to the metastatic world, it's really challenging to drive this process back. Once we hit a stage III or IV in Western medicine, you've got an average of anywhere from five to 12% are still here across the board cancer types in five years. I like to overcome those statistics.

Dave: I'm working with a guy who and most of the people he's worked with can turn off all metastases within two weeks. He has patents of drugs in his name and he's terrified to put the stuff out in the world.

Nasha: I'm sure he is. I'm sure he is because even when we see the power of ketones on this, people get attacked and ridiculed and not to ever say, I mean, while we still have a couple more to go on this list, the ketones by themselves are the trick. They make the cancer cells and the cancer process vulnerable so that other therapies ... It's the Trojan horse and so it carries radiation to its target. It carries aromatase inhibitors to its target or PARP inhibitors. It carries certain chemotherapeutic agents to its desired target with better cell death and better support of the healthy cells in marrow to keep the terrain vital so that you don't take it all out with the napalm of the cancer treatment.

Dave: That's beautiful. Keep going on your list. This is golden.

Nasha: Cool. Cool. Then this is the one that everyone thinks ketones are all about is just the reprogramming of energy metabolism. That is one of the 10 hallmarks of cancer and it's a biggie, biggie, biggie, biggie, but we're all super hyperfocused on that alone and on

that alone is being the reason why ketones work or the reason why ketones could potentially be used as fuel for cancer. If you just simply ignore that one, the fact that it touches all other nine is pretty compelling and so avoidance of immune destruction and immune detection, which is huge because cancer starts to cloak itself from the immune system and hide and basically evade the immune system and evade natural killer cell and dendritic T cell activity. It just can kind of Wonder Woman bracelet it off. We need that to be vulnerable to our immune system, which is actually what treats the cancer, not the cytotoxic agent that we might be putting into the mix, so people might get beautiful cytotoxic reduction, but ultimately, if the immune system is not up and running, the cancer will be back bigger and louder than ever after the process.

Nasha: Then tumor-promoting inflammation. We kind of hit off the conversation around my very first experience both personally because I had massive angiogenesis and massive inflammation with ascites. That's all ascites is is an inflammation and angiogenesis, so that really helped me. By fasting, I cut off supply chains to that. Same with this gentleman with this parietal lobe bulging out when he came into the clinic in a wheelchair. We quieted that inflammatory fire very, very quickly and very powerfully and sustainably.

Nasha: Then finally, genome stability mutation. This circles all the way back to the beginning of our conversation. We now understand ketones to be HDAC inhibitors, to be epigenome express, like help our epigenetics express better and avoid expression where they're broken, if that makes sense. That's kind of put weird. Maybe you can help me reframe that, but ultimately, it has a direct impact on our epigenetic expression.

Dave: That is an epic list of 10 things. If you're listening to this right now, you can see why you might want to read *A Metabolic Approach to Cancer* if you're dealing with it in your family. This reminds me of something. In the very early days of *Bulletproof*, I had a guy reach out and I had coffee with him at the Rosewood Hotel on Sandhill Parkway. This is where all the big VCs are. This guy was, just for confidentiality, he was a C-level officer of a Fortune 400 company. He was diagnosed with pancreatic cancer, the same stuff that killed Steve Jobs. Thank you low fat, high carb diet. Can I just say that?

Nasha: Right. Mono apple fast and mono carrot fast. Yeah.

Dave: Sorry, that doesn't work very well, so we lost a great one that way. This is a very dangerous cancer and it was too big to be operable. I'm talking to this guy and he was very well-read. He'd found my little blog at the time and said, "Dave, I just want to tell you what happened." He said, "The day I got the diagnosis, I didn't tell my family. I don't want my kids to worry. I didn't want my board of directors to worry, so I went full keto. I didn't eat any carbs again. I did that for nine months and I went in to do chemo to shrink the tumor so it could be operable. When I did chemo, I was in ketosis the entire time and they wouldn't do insulin-potentiated therapy, which is when you inject insulin with chemo to drive it into the cancer cells further." He said, "So I just told the oncologist, 'Look away,' and I shot insulin into myself to do it." In nine months, he shrunk the cancer by 2/3, so it was operable. He went in for an elective procedure, had it removed. Never told his family, never told anyone, but he completely saved his own life in a year from

something that was a sure death, painful diagnosis. I think the technical term for that is talk about balls.

Nasha: Exactly.

Dave: He was like I am not going down like this and he just did everything right because the knowledge was out there. This was probably eight years ago. The knowledge was there and it's way more out there now than it was a little while ago and it's ... I found your book to be pretty amazing because you got all this stuff in there, including the dealing with old trauma patterns. Thank you for looking at it the way you have and I've seen this work in people where if you listen to what your chemo only guy is going to tell you is basically, you're screwed. Write up your will. It's not necessary anymore. You may die of cancer. It still happens, but you also ... He used chemo and you used chemo and there's so many other well, if I had cancer, I would do Gerson therapy or I would just go on ketosis and hope for the best. What do you say to people like that? I already know the answer, but I want to hear you say it.

Nasha: Well, actually, I didn't use chemo and so I freak people out. This is actually why I never really told my story while I was in medical practice in a brick and mortar practice is because as a naturopathic doctor, I'm already scrutinized as it is and everybody they're going to come to me and I'm going to tell them no way to conventional therapies and everyone raw food, raw juice, vegan. That's what people assume I'm going to do until they sit down with me and realize I'm a scientist first. I'm a woo-woo nature doc second. Actually, I think they're parallel. I think they stay on the same plane exactly. I look at the patient. I treat the patient and their patterns. I never treat cancer or cancer tumors. I treat the terrain imbalances. That is what those 10 chapters are on is each of those 10 patterns. My process 27 years later still with the tumor in my right ovary, still have lesions on my liver, still with peritoneal implants, and carcinomatosis, still dealing with lovely edema when I fly from lymphedema from all that pressure buildup from that ascites really blew out my poor things, but your Vibe plate, which I'm standing on, by the way-

Dave: No, are you really standing on the Bulletproof Vibe?

Nasha: I'm telling you, like I said, I stand on it between clients because my edema will get terrible all day long, but that has been one of the hugest changes in my lymphedema was that purchase.

Dave: Oh, my goodness. Cool.

Nasha: It's like a little plug for you.

Dave: Thank you. Well, vibrating your whole body is going to move lymph. You just know it is, right?

Nasha: Exactly. That's right. My poor little vessels were so damaged from all that pressure for so long that they just never got quite their own groove and that, as I've gotten older and

stand a lot and travel a lot, they got weaker and my edema has gotten worse, as lymphedema will do. I introduced your plate a few years ago and it's like a miracle has happened, so pretty cool thing here, but ultimately, I had to be very careful about sharing my story. Interesting for years, the most people who came to see me were just saying, "I want you to enhance my conventional therapy." Now the pendulum is starting to move where most people are coming to me saying, "I don't want to do any conventional therapy."

Nasha: You're going to find for me that I'm likely somewhere in between because I don't tell you oh, this is your cancer and this is how you treat it. I say let's look at the burden. Let's look at the whole terrain and let's see what is absolutely specific to you from your epigenetics, from your genomics in your tissue assay, from your blood levels, from your current state of wellbeing, from the other cofactors, co-infections, co-traumas, etc. that you're dealing with because sometimes we might need a bigger piece of equipment to push this back. Sometimes you don't have to be that aggressive depending on the situation and so we don't have to guess anymore, Dave.

Nasha: I think that's one of the coolest things you mentioned a moment ago. We've come to a time that I think it's irresponsible, negligent, and, frankly, malpractice if people are not being offered an integrative approach to their cancer. We know too much to know that we can absolutely enhance the effect of conventional interventions or even decide precisely what conventional intervention is warranted for that person at any given time and we can absolutely overcome the horrible statistic of 70% of cancer patients that have had cancer will have a recurrence. That's atrocious and I won't play that game. I am committed, as I am on my own 27 years out, I'm still always looking under the hood. I'm still exploring what works, what doesn't work for me and still tweaking my metabolic fuel, if you will, constantly and helping my patients learn about that for themselves and help them adjust accordingly for, hopefully, decades to come.

Dave: It's beautiful to hear you say that and there's this inconvenient thing called the standard of care. There are many doctors, especially oncologists out there who would like to be doing some of what you're doing, but they're terrified that they're going to lose their livelihood because oh, the standard of care isn't ketosis, so if I do this, I'm putting my family's food at risk. Do you see changes in the standard of care? This is what insurance companies say doctors are allowed to do, basically. Is that going to get fixed or are we all just going to be like I'm sorry, I only go there if I broke my arm. I just pay out of pocket for all the good stuff.

Nasha: Well, that's my life, what you just described right there, but ultimately, two, three years ago, I would've said we're effed. There's no chance this is ever going to change. It's hopeless. I'll just keep doing what I'm doing. People will eventually find me or colleagues like me and we'll just quietly keep doing what we're doing. There's been a change and it's thanks, frankly, to people like you, Dave, because it wasn't doctors changing it. It was the tech world changing it because people like metrics. They like to measure things. They like to quantify things. That's how I've always done it for myself and that's why my patients loved it because they had instant feedback of what I'm doing is right on par or not and adjust accordingly.

Nasha: Now that metrics are the hot thing and epigenetics is the hot thing and precision medicine initiative is the hot thing, now the conversation is such that I have conventional entities, big, huge academic universities and well-known oncologists and oncology researchers coming to me to say, "Can we measure what you're doing?" I go to conferences now where like I just was at Low Carb USA and 50% of the audience this year were doctors and a handful of them, there was an NIH doctor there. There was radio oncologist there who I met last year and she's on fire and changing the climate in her Chicago hospital oncology ward and more and more like that. We keep finding each other now, so in the last two or three years, there's been an explosion of even our conventional docs are starting to see that this doesn't have to mean either or. It can be a powerful and and that even if you can't do beyond standard of care yourself, you certainly want to partner with someone who can round out the whole team approach.

Dave: I interviewed in the last six months a guy named Dr. Chris Smith, who's a neurosurgeon and cancer doctor who said, "Well, I just started using ketosis just in the last year. I'm new to this, but the results my patients are insane. I wanted to find someone who was very Western and just said you know, I opened my eyes up this way." It didn't take him 10 years of practice. He said, "Well, I want people to get better and so maybe I have to be more experimental." It doesn't take much to establish a tipping point of disruption where you see enough of these traditional people do it and all of a sudden, if you then apply the 1960s standard of care stuff to 1/3 of the cancer doctors doing it, there aren't enough cancer doctors and at that point, the industry will be forced to change.

Dave: That's why this interview is really important because hundreds of thousands of people are going to hear this and there are a great number of doctors who listen. Maybe they'll pick up one little tidbit that wasn't chemo and say, "I'll just add a little EMDR to my practice or refer out." That's how change happens. I just feel like the internet podcasts, social media, it's not possible to take two entire generations for something to come out like Warburg's work. It's been resurrected and it's taken five to 10 years for people to be able to, say, at least know who he is.

Nasha: Totally. Exactly, like not resurrected, but also built upon. He took it down the road as far as he can and now this generation is grabbing the baton and taking it further and going deeper. We've learned so much even since his time and I'm hopeful that in my lifetime, I'm going to see a whole nother iteration of this and it is the folks like this oncologist and that in Chicago who's also become a friend and her experience where they really were like you're not allowed. The RDs all ganged up on her at the hospital and now they're having her write protocols because it's simple. You can't have it both ways. You cannot both tell the patient that diet doesn't matter, so eat whatever you want, and then tell patients don't do keto diet because it's dangerous or doesn't work. That's this weird, schizophrenic place that we're hanging out in right now. That's the wave we're on, so that, I think, is where we are starting to get to the tipping point, as you described, that now people are saying well, if it doesn't matter, then I'm just going to try maybe just to take even some exogenous ketones 20 minutes before my radiation therapy and see if I can not puke my guts out for the next few days. Simple things like that.

Dave: That alone is a benefit. You said only one more iteration of this stuff in your lifetime and I got to ask are expecting to die soon?

Nasha: Oh, god. Well, see, that's the thing is I think my brain is still ingrained in thinking that it takes two generations to change this, so thank you. Let's reframe that because it is happening exponentially now, so maybe I'll get to see 10 or 12 more.

Dave: That's actually what's going to happen. Everyone listening needs to know that, that the speed of change, it is exponential right now and when you look backwards, like wow, that curve is kind of flat and you look forward it's kind of flat, but it's pointing up, so we are going to see massive quantum shifts in all this stuff just in the next five to 10 years. That's why when I say I'm going to live to at least 180, I think I'm being conservative. That's why there's an at least there because I know we could do 120 without any of the cool tech that's already happening. Now I've got to ask you this. Have you done stem cells on yourself yet?

Nasha: I have not, but I have one of my friends is a pretty famous stem cell doctor down in Mexico and he teaches all over the world and has done some pretty amazing things. He's definitely talked to me about it, but I've always been a little bit nervous with a cancer history, cancer diagnosis. The research has not really been done. Maybe you know, but I keep looking into it and I'm not seeing anything that compels me to feel safe to do it for myself or cancer patients. However, I have seen miracles with patients with MS, ALS, Parkinson's, lots of brain trauma TDI issues, wounds, injuries. I definitely know there is an absolute, absolute place for it. In my mind, there's got to be some way that we can manipulate our cancer stem cells with this, but I'm a little nervous to try that one on myself because things are going so well.

Dave: I can understand that. I've done an enormous number of stem cells from a variety of different things, products. I'm a human guinea pig. Also, this whole 180 thing takes work. One of the things that's really promising for cancer patients is natural killer cells. I've had my blood taken out. I've had my natural killer cells cultured for almost two months and then all injected at once, which I did it because I want a young person's immune system and I have a huge history of toxic mold exposure, obesity, autoimmunity, all sorts of crap and you know, it seems to work. That is actually an anticancer thing, but given what you've got going on, you need to get stem cells to heal all the crap the cancer did to you, right?

Nasha: [inaudible 00:59:59]. Well, that's why I use mistletoe.

Dave: That was my next question. You totally ruined it.

Nasha: Oh, frick yeah. I'm sorry.

Dave: Tell me about mistletoe. You got that mind reading thing turned on.

Nasha: I can't help it. It's always been like that.

Dave: Mistletoe is one of those things I've been looking into it for years. People keep sending me stuff on it, but I haven't actually tried mistletoe, so why the heck other than to get kissed would people want to use mistletoe?

Nasha: Anthroposophical medicine, which was built on the philosophy by Rudolf Steiner in the early 1900s with this concept of looking at the world around you in deep observation and starting to see how the outside world reflected to the inside. I'm being incredibly CliffsNotes on this. There's a heck of a lot more to it than that, but one of the early observations that Rudolf Steiner made was the concept of the law of signatures, which is he had observed a tree in nature that had this big ball centered into it. He looked at it for a while and said that kind of looks like a tumor, so I'm wondering if that could treat a tumor. That's how things from Ayurveda. That's how we learned from the vedic-

Dave: That's how shamans work, too.

Nasha: Totally, and then down from the Chinese medicine herbalists and then down into the eclectics hundreds of years ago. It's worked that way, but he somehow, I mean, the guy had to have channeled or something because somehow he knew to take some of the extraction of the leaves that only bloom a couple of leaves in the summer and a few of the berries that only fruit in the winter, unlike any other plant in the animal kingdom, also a clue, as well as none of their branches or roots ever touch the ground. They all grow inward and they're out of sync with the seasons. It kind of sounds a little bit like the hallmarks of cancer that we now know of today.

Nasha: He somehow knew to take a little bit of those, put them basically in a centrifuge and grow them, then create an extract and then inject it. This started happening in 1917 with the work of an oncologist, [Dr. Eda Vegman 01:02:02], of that time and now a hundred years later, it is the most studied integrative oncology therapy in the world. It's over 2500 studies, over 250 that we would call good per Western medical standards. There's a clinical trial that I helped get the IRB going and still consult on a lot at Hopkins that started in February 2017. We are, knock on wood, looking at four more starting in this country within the next 16 to 18 months. It has one of the most profound ways to stimulate a low grade fever, so it has ways to stimulate natural killer cells, natural T cells, dendritic cells.

Nasha: The other biggest piece, and this is where it gets a little woo-woo, it's where you bring the science to the woo-woo, is that resets the rhythm. What I believe is happening and one of the things, really, I promise you it all comes together, you talked about the ACE scores. We talked about trauma. We talked about people with extreme trauma have downregulated opiate systems, so we know in people with trauma and people with a lot of chronic illness, they tend to have downregulated endocannabinoid and endorphin systems. What I believe is happening and where I'm getting some really cool, groovy immunology interest around the world to do some research is that I believe the mistletoe is upregulating both endorphin and endocannabinoid system, so it is resetting and restoring the rhythm. Yeah.

Dave: You realize with that sentence there's probably about 5000 young, happy, CBD oil entrepreneurs listening to the show right now and they're all thinking about mixing mistletoe with CBD oil, so look what you just did, Nasha.

Nasha: Oh, golly, well luckily, you can't mix this little guy. The lectins are so vulnerable, it can only be injected. Can't mix with anything else because it gets easily degraded if we take it orally or if we mix it even with an IV bag of certain nutrients.

Dave: Oh, so even liposomes won't work for it. Bummer.

Nasha: So see, good. I just cut that off at the pass.

Dave: Good, no. It's making stuff that doesn't work and thinking it works is actually not good for people. We talked about Steiner and my kids are in a Waldorf school, which comes from his philosophy. Here's the deal that Steiner a lot of people don't know about or Steiner, if you pronounce it properly. He, since he was a little kid would see glowing things and he saw stuff most people don't see and he never told anyone until he was like 40 or something. He's like, "Well, I know the world works this way because I've always seen it, but I was afraid to tell you guys because you wouldn't believe me anyway."

Dave: People could say oh, great, you got a crazy person except the people I know who've done very advanced meditation practice, the shamans and even certain people who don't have any training, they have brains that can see stuff that most of us can't see and I know what those brainwaves look like on an EEG signal. Their brains are different and they can see different things. We know birds and bugs can see colors we don't see and we can measure all these fields we didn't know existed a while ago, so I'm just willing to say maybe he's crazy pants, but this stuff seems to work and I'm happy to do crazy pants stuff that works. All I care about is did it work? If it's all placebo, okay, fine, but I don't think that's what's going on. That was maybe why he could do this because when he looks at a tree, he probably sees like hexagons and elves. I have no idea what he saw, but whatever it was, he got some data and then he tested it.

Nasha: Yeah. Yeah. I love it because frankly, that's where you have to even think about chemotherapy, for instance. It comes originally from plant medicine, so like the Pacific yew tree coming from taxol. Those are just examples that some of our most toxic plants in nature, when you repurpose them, you can then make them some of the most potent and powerful medicines. Same idea with the concept of repurposing drugs today and the other medication that somebody with a trauma history and a lot of the medical history that I had that helped upregulate that we know works in upregulating endorphin system is low dose naltrexone.

Nasha: This is what's interesting is we see that LDN and mistletoe have very similar personalities in the body and in the behavior. When you even put them together, there's an even bigger synergy. I am excited about the future of the type of research we can do with repurpose medications along with this or things like psilocybin or micro dosing with these medications or the concept of just fasting with these processes because we've been using mistletoe as an adjuvant for a hundred years with conventional chemotherapy with zero negative interactions as an adjunct. 85% of Germans and 65% of the rest of the EU will at some point likely be placed on mistletoe before, during, and after their diagnosis and treatment or longterm prevention and

maintenance program simply because that's been used there readily for a hundred years.

Dave: That is so cool, yet we don't hear about it much here in the US and it would probably save money and improve patient lives. That's okay. We just heard about it in the US now.

Nasha: You'll hear about it much more by the end of the year. We have a book coming out, 17 authors from seven countries sharing their experience of mistletoe, everything from inter femoral to intraperitoneal injections to doctors completely reversing Chernobyl thyroid cancer and do right up into the thyroid gland to doctors using it for Lyme disease, for Hepatitis C eradication in San Paolo, the biggest hospital in South America in Brazil using this to treat pediatric cancer cases and Hepatitis C. It's amazing and global and we are so far behind here, so we're excited to bring some fresh voices to the table soon.

Dave: Does mistletoe work intravenously?

Nasha: That's what we have some of the biggest impact on, aggressive cancers and aggressive Lyme conditions.

Dave: Should I just use it once a year in my quest to live to 180 just prophylactically?

Nasha: You just freaked me out. That is exactly how they're starting to use it and do studies on it as kind of a vaccine, a longevity, quality of life anticancer vaccine.

Dave: Hook me up. Where do I get some?

Nasha: We will hook you up.

Dave: Nice.

Nasha: I love it.

Dave: I'm going to Burning Man next week. I don't think it's illegal to, "Hey, man, you got any mistletoe?"

Nasha: Hook you up there. One of my colleagues, he's actually one of the head medics there who has trained in mistletoe with me, so I might have you two talk.

Dave: All right. That'll be awesome. I have no idea if I'll be dressed as a unicorn or not, but it'll be fun. I'm not really going to-

Nasha: Oh, come on. You are a unicorn. You are a unicorn.

Dave: Oh, thanks. On that note, Nasha, I got one more question for you.

Nasha: Sure.

Dave: If someone came to you tomorrow and said, "Based on everything you know and as a human being, as a medical professional, whatever you've experienced, I want your advice. I want to perform better at everything I do as a human being. What are your three most important pieces of advice? What would you offer?"

Nasha: I'm kind of simple and I've been asked this. My rote comment to this would have been historically to find your joy, find your life purpose, and express what you are grateful for, but I kind of clump those in one these days because they happened for me simultaneously and most people who practice any one of those find that. The other thing that I think is really critical to our very survival on this planet is to get outside. Get off the grid and lay on the ground or swim in the ocean or stare off into the stars because the average American today spends less than 15 minutes a day outside. We are so disconnected from the rhythm of the nature around us that it's no wonder the cell signaling has gone wonkers, so our circadian rhythms are upside down and inside out and, of course, even looking at you, I've got my little blue lenses through this, but we can still use the power of our technologies, but we have to enhance our response to them. I believe that that's people like you, Dave, who helps teach us how to use our technology wisely. Those are my three biggies, circadian rhythm reset by getting outside, finding your joy, purpose and gratitude, and knowing how to take us to that 180 year place responsibly and ethically, as well as in the best health possible.

Dave: A beautiful, wonderful answer. Thanks for just coming out there and just laying out all 10 of those pieces in your book because it's much easier to pick one and say, oh, let's just look at this one thing, but we know our bodies are systems. We know that if you have a problem with the body, it's a systems problem and to modify a system, fixing one thing usually doesn't quite fix it. You might have to do three things at once, so I very much respect the work that you're doing and the book that you wrote, which is called *The Metabolic Approach to Cancer*. Thanks for being on the show today.

Nasha: Thanks so much. What an absolute joy.

Dave: If you liked today's show, you know what to do. Head on over to your favorite place to buy books and pick up a copy of *The Metabolic Approach to Cancer* because you'll learn something about what's going on in your mitochondria even if you don't have cancer and it's not something that is a part of your life. Most of us at this point know people who have cancer. It is an endemic problem and it doesn't have to be the way it is now. There are so many things that are affordable, much more affordable than traditional cancer treatment that improve quality of life at a minimum, probably it will make you live longer or maybe even just get rid of the cancer all together, which would be the goal. This is a seminal work in the field. You should read it and it's approachable, as well. It's not too sciencey, but it tells you what's really going on. If you really like this episode, you could also go to bulletproof.com/iTunes and leave a review or leave a review for a Bulletproof product on Amazon. I look at reviews because they tell me whether what I'm doing is useful for you, so give me five stars if it deserves five stars. Thank you.