



**Transcript – Cancer’s Ketogenic Kryptonite with
Patricia Daly - #339**



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Dave: Looking for a career in tech, maybe business data design or marketing, trying to get that promotion or raise, to excel in your career you need 21st century training and skills? General Assembly is the largest and most respected school worldwide for people seeking to grow their talents and master the marketplace. Whether it's learning remotely online or in person at one of their beautiful campuses, you can join the 350,000 people who had already gone the training needed to propel careers in tech and business.

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Speaker 1: Bulletproof Radio a station of high performance.

Dave: You're listening to Bulletproof Radio with Dave Asprey. Today's cool fact of the day is that in 1931 the Nobel Prize was awarded to Dr. Otto Warburg for discovering that cancer cells have a different energy metabolism than normal cells in your body and that tumors feed on sugars. In more recent years researchers figured out that cancer cells not only feed off glucose and fructose, they also use fructose to divide and multiply. It's one of the reasons that a ketogenic diet can be effective against cancer and we've learned now that tumor cells can't use ketones because they just can't use oxygen that way which is very interesting.

Before you go on today's show, if you're a regular listener of Bulletproof Radio you've heard me share the top 10 list of biohacks. Let's talk about number 9 fun hacks for the Bulletproof mind. It may sound weird but hanging upside down is a great way to hack your brain. Regularly inverting trains your brain capillaries making them stronger, more capable of bringing oxygen to your brain. It's a pretty straightforward thing. More oxygen to the brain means better performance for you.

I get my daily stretch and a good dose of brain oxygen with my Teeter inversion table which is essential for optimum focus, concentration and mental energy. It also just feels good and it's an effective way to keep your back in good shape. That full body stretch elongates your spine and takes the pressure off the disks so they can plump back up. Less pressure means more flexibility and less pain. If you have back pain, even if you've been lucky enough to avoid it, you need a Teeter to invert every day to keep your back and your joints and your brain feeling great.

For over 35 years teeter has set the standard for quality inversion equipment you can trust. There's an amazing offer just for Bulletproof listeners. For a limited time you can get the Teeter inversion table, the same one that I use with bonus accessories and a free pair of gravity boots so you can invert at home or take the boots with you to the gym. To get the deal which is a savings over \$138, you have to go to getteeter.com/Bulletproof. You'll also get free shipping and a 60 day money back guaranty and free returns so there's absolutely no risk to try it out.



Remember you can only get the teeter with bonus accessories and a free pair of gravity boots by going to getteeter.com/Bulletproof. That's Going-E-T-T-E-E-T-E-R.com/Bulletproof. Check it out.

If you haven't had a chance to check out the new Bulletproof collagen bars its time. We've got a bitter chocolate and vanilla max and these things have 11 grams of protein and this is protein that doesn't have the inflammatory amino acids that you probably get too much of. Collagen is a building block for joints and skin but they also have Brain Octane in them and only 2 grams of carbs that come from cashews. What you end up getting is something that helps you stay in ketosis and get in ketosis and actually raises ketones more than they should. It tastes amazing and it turns off hunger for crazy amounts of time.

If you haven't had a chance to try the new Bulletproof Collagen Bars, I'm telling you, you will never, never want to eat another kind of bar again because they turn off food cravings. They turn off hunger in a way I've never experienced. It took 2 ½ years to formulate these because collagen is a weird material. You'll love them. You can get them on Bulletproof.com.

Now today's guest is Patricia Daly. She's a certified nutritionist/therapist and an author based in Dublin, Ireland. She's worked with cancer patients around the world using a mix of traditional and complimentary methods, is a member of the British Society for Integrative Oncology and had cancer herself. She hacked her own cancer. She had eye cancer and got rid of it. She did this with the power of ketones and a few other tricks. Patricia, welcome to the show.

Patricia: Hi Dave, thanks a million for having me.

Dave: It's my pleasure because you've done something interesting. It's one thing to say "I'm a cancer researcher." There's lots of people doing research on cancer. In fact sometimes I wonder like "Why have we not solved this problem yet?" There's so many people working on it but at least we're all like running in circles and things like that to raise money for awareness of cancer maybe. Who's going to do something about it and there's nothing like having cancer to motivate you to do things. It's just similar for me. Like having obesity and realizing recommendations simply don't work and then doing something about it. I was really intrigued by your story there and I wanted to get a chance to talk about with you. Tell me about what happened. How did you become a cancer hacker here?

Patricia: As you said basically I tried the conventional route and then when this didn't really have the desired results that's when I started to hack the cancer exactly. I was diagnosed with malignant melanoma in the eye at the age of 28. That's exactly 8 years ago now. Initially really didn't much have an idea of what I actually was getting myself into. The treatment was very rough. I had a radioactive plaque sticked to the eye for 4 days. Initially it worked really well. The tumor shrank fairly quickly but then I had a relapse about 20 months later. The tumor within the space of a few months it just grew so aggressively that I had to have surgery again.

This time I had then proton beam therapy, another form of radiotherapy but much more aggressive and that was in 2010. So far so good. Obviously I had a lot of side effects, it is prolonged treatment and the tumor had moved so close to the optic nerves that they had to radiate the optic nerve. They said, "It's pretty much guaranteed" that's what they told me

“expect to lose your vision within 12 to 18 months.” Then fast forward to 18 months later, I had nearly lost my vision but not only that there was a lot going on in the eye. I had edema. I had excessive angiogenesis. The growth of lots of blood vessels. I had cataract. I had onset of glaucoma. Depression in the eye was rising.

My consultant said, “We need to do something. There are 2 options. We can try Avastin injections.” Avastin is an angiogenesis inhibitor straight into the eye or then if that’s not working down the line you have to look into getting the eye removed. When you’re very young ... I had 2 very young kids at the time. My son was 8 months and my little girl was 2 ½ and being faced with a decision like that on top of obviously all the chaos that young children bring it wasn’t easy but in a way probably it saved me as well. That I really started to research. I had started looking into the ketogenic diet in 2011 already just to set my options and my consultant saying “Just don’t do anything radical.”

Dave: Have some sugar. Don’t do anything radical.

Patricia: To make that very clear I had a really clean what we in mainstream medicine look at as a good diet. I started studying nutritional therapy a month after finishing radiotherapy in 2008. I had some idea but obviously the whole notion of ketogenics that’s just not taught in college. It’s starting to be taught but at the time forget about that. I did the usual. Lots of juicing, whole grains, loads of vegetables. Meat I pretty much ditched a little bit of oily fish. Just the usual. I didn’t have any processed foods. I didn’t have any treats as such that would ... cake and biscuits and stuff. It was really decent diet.

In 2011 I started researching and being from Switzerland I turned to a lot of the German research which was very much at the forefront at the time. Johannes Coy, he came on the plan as well. At the time Tom Seyfried and Dominic D’Agostino they weren’t as present online. It was mainly the German research and then I just gave it a go. My consultants said as well “Off you go. Try your radical thing.” We keep an eye on the eye literally. I had to go in for monitoring.

I think it’s fascinating with eye tumors and people just look at me “wow you’re a weirdo.” I find it’s fascinating because you can actually watch the tumor. I think it’s the only type of cancer, one of the only ones where you can actually look into and see, “Wow what’s going on?” Literally it was probably 4 or 5 weeks after I started I went back in and my consultant sat down. He looked into the eye and he said, “Wow it looks like the calm after a big storm. What are you doing?” Really he said it’s almost similar in effect to Avastin. Really reducing inflammation and angiogenesis and all of that. That was it.

I didn’t do it perfectly at the beginning. I was struggling because there hardly any recipes. The ones I had were very much dairy based, nut based and it wasn’t anything like the ketogenic diet that I follow now. I started with about 60 grams of net carbs a day. I just basically split 20 grams with each main meal and that was pretty much what I was doing but it still works. Even though it wasn’t the radical ketogenic diet which I find very interesting in hindsight now with what I know.

I had an extraocular tumor as well that was forgotten about and that completely ... it didn’t

respond at all to radiotherapy. It just stayed the same size. I had a CT scan last year because it was forgotten to be monitored and it's completely gone. It just disappeared. That was outside the eyes so I don't know if its classified as an eye tumor or a brain tumor. Not sure. So rare.

Dave: About 5 years ago I had breakfast with a guy who swore me to secrecy but he's CEO of a very sizeable company. He's been diagnosed with inoperable pancreatic cancer. This is what killed Steve Jobs. This guy is definitely a biohacker because the day of the diagnosis he's like "I'm going in ketosis like all the way ketosis." It took him about 6 months to shrink his tumor until it became operable. He never told anyone. He never told his family. He basically went into the hospital after it was operable, stayed in ketosis the entire time. Had it operated on and ketosis speeds recovery. He was basically back up on his feet in a few days and kept doing things and completely eliminated his cancer.

It's one of those things where he did a bunch of other stuff as well. You look at stories like that. That's supposed to be impossible like for you to just get rid of this cancer outside your eye that might have been brain cancer that people forgot to pay attention to. Like, "Oh!"

Dave: It just went away. That's cool. I hope listeners listening to this just realize how profound ketosis could be for cancer. Why is it so successful on cancer?

Patricia: The reason why the ketogenic diet was formulated we have to go back to the 1920s when realized that epileptic patients who were sick and had to fast that they stopped having seizures. They realized "Oh fasting could be really good for epileptic patients." It does something to their brain. That's how they actually came up with the ketogenic diet. It's a diet that mimics fasting basically. I guess there's so much research now coming out on the whole fasting as well, how much better in terms of inflammation, oxidative stress and also lots of other aspects in terms of properties of getting rid of rubbish in layman's term and that's basically probably one of the powers of ketogenic diet.

I think it's reductionist to say "It's just about blood sugars." Once blood sugars are low then the cancer cells can't be fed anymore. End of the story. They say, "That's too simple." I say, "Yeah of course it's too simple." It's a lot more. The ketogenic diet has in fact so many different pathways and I heard Dominic D'Agostino recently talk in a podcast that I think there's around 20 that we know of but there's at least as many that we probably don't know of yet.

Dave: Twenty pathways for ketones to effects cancer or just in general?

Patricia: Mainly also in terms of cancer as well that there are so many pathways that are important for cancer like insulin like growth factor and AMPK then how that's affected as well. The list goes on and on. Angiogenesis as was very well demonstrated in my example as well we also know that the ketogenic diet has an effect on gene expression. There's quite a lot of research going on there. That's obviously linked to cancer. There's a lot we still need to discover and we need more research definitely.

Dave: There's a convenient thing about ketosis for listeners who have never been in ketosis. There's an easy way to experience a little bit of it. When you do Bulletproof Coffee made with the right

ingredients Brain Octane is the largest source of exogenous ketones probably that's sold right now because so many people put it in their coffee. If you don't have a bowl of cornflakes with it, you can raise your ketones enough to feel the effects on your metabolism just by having a cup of Bulletproof Coffee with brain octane in it.

In fact if you're watching on YouTube I'm drinking my morning one right now. It's got collagen which is free of methionine or almost free of methionine which is one of the amino acids associated with extra cancer. I'm not saying methionine causes cancer. I'm saying if you get too much of it, it contributes to inflammation that contributes to cancer because inflammation lowers your mitochondrial function. The difference in the quality of my life from having some ketones present is enough that I probably don't have cancer right now. I have no idea. I can tell you I like how I feel when I do that and part of what I'm doing with Bulletproof is just showing people, "You're a better person when you have more energy in your cells."

The fact that you're probably not getting cancer and you have more energy in yourselves is a side effect." If you have cancer and you've heard this podcast or someone you know does, there's no excuse for not going into ketosis. You talk to your doctors and decide if there's some strange corner case but I would challenge a doctor to find a reason why you shouldn't try ketosis if you have cancer that's threatening your life. Ketosis is not dangerous compared to dying.

Patricia: That's the whole debate. You probably saw ... I hope you got a chance to look at the book that we just published The Ketogenic Kitchen that I published with Domini Kemp. The backlash we got is quite amazing. It is so in Ireland maybe.

Dave: Ireland, in the UK?

Patricia: Yeah.

Dave: I'm just going to be a little bit rude here. there's a lot of very fat politicians and the British ... I think they call them the British Dietetic Association that give you recommendations to make you diabetic and they just come out any time someone says high fat they always stand up and waddle around about it. I'm done with those people. I hope they're listening. Everyone listening knows what you guys are doing. You cannot hide. We're not going to be polite about it even though that's like the UK thing to do. No, sorry. Don't tell people to eat sugar. It's bad for them.

Patricia: Obviously it's a very new concept especially here. I think you guys in the states you probably and especially also in Germany, Switzerland. You go to clinics they're sort of "Wow you've been doing that for a long time. It's just ..." It's not even talked about. Obviously in integrated clinics not in the mainstream, it is intriguing how ketogenic diet is dangerous. I think there's still this massive mix up with ketoacidosis which I find really sad. That we haven't moved on.

I think that's one of the beautiful things about the ketogenic diet. We have a safety record from epilepsy and in epilepsy we have the randomized control trials. I know for a fact that in epilepsy we were actually about 10 years ago we were at the exact same stage and then we are with cancer now. Everybody said you're crazy doing this with epileptic patients. It's not safe. There is not enough evidence. I think we just have a bit of catch up to do in terms of the clinical trials but

it is happening and it's no point just sticking your head in the sand and ignoring the evidence that we have at the moment.

Dave: It's one of those things where doing chemotherapy versus trying ketosis. Maybe in ketosis and chemotherapy together they're willing to do some stuff is incredibly shockingly toxic for a 5% improvement in outcome and it costs hundreds of thousands of dollars. The difference is really not that big. It creates enormous suffering. You don't really suffer very much by trying ketosis. You might have sugar cravings for a couple of days as you get into ketosis and then you don't care about food. It's awesome. The downside is so small.

Patricia: I think we have to take it from an approach let's try and combine ketosis with conventional treatments because that's the only way to really get it into mainstream and Adrian Cech absolutely amazing work with her team showing how ketosis or even just giving it can be exogenous ketone bodies. We don't know but that's what they have been doing in preclinical trials and what effects this will have on radiotherapy and chemotherapy. The results are astonishing.

Colin Champ, he does a lot of research as well. Roger Clemens even just having like you said with the Bulletproof Coffee or a shake that raises your glucose in the morning before you go into radiotherapy that can make a distance that people don't have to put everything in terms of diet to have to absolutely radically change everything. Sometimes it's not realistic with somebody who has to start treatments. It can be just too much to face treatment to completely overhaul your diet, to have things in your fridge that you've never even head about or seen before. It can be a lot. I think we have to really take steps and take measures now to start integrating it into the mainstream. In my view that's the way to go.

Dave: It is. You're definitely a voice for pushing that. We know a lot about cancer treatment. If I have cancer right now I'd be cranking out my ketones. I'd probably be minimizing my carbs more than I am now. I would be talking with cancer specialists about what's most likely to work. I'd also be doing aggressive antifungal therapy because there's great evidence for that. Hyperbaric and things like that. The last thing I would do is just go on a special diet and hope my cancer goes away. That's the ostrich thing for cancer there. You look at all of the things that are likely to make you get better and you probably can.

Patricia: It's a whole cocktail of different things as you mentioned. Hyperbaric oxygen has been shown to enhance the effects of ketosis. There's so many other things that I have just learned bit by bit. I keep changing things and tweaking and implementing, doing more testing. How can I actually make this really sustainable especially and really optimize? I've just recently started to exercise a lot more again. I used to be semi-professional triathlete and trained a lot. Endurance training, the usual stuff and then carb loading until the cows came home. Sometimes I wonder, "Hmm was that a good thing to do?"

Anyway that's the past. I'm just trying as well. I haven't been exercising intensely ever since I was diagnosed so I'm only just recently noticed end of last year. I've started to see "What effects I have on ketosis and how do I have to adapt?" It's really almost like starting from scratch again which is exciting.

Dave: Are you going to stay in ketosis forever?

Patricia: I do really well on it. I keep monitoring. I have to go for regular ultrasounds of the whole abdomen as well because one thing with malignant melanoma in the eye is that it likes to spread to the liver. That's the first organ that it would go for. To some extent also spine or bones. I do regular ultrasounds as well just to make sure everything is fine. Some people say, "Kidney stones can be an issue." In terms of digestive function there's absolutely I mean it really so clean there. The girl who does the ultrasound she's always "Wow it's just really all very, very clean. Your liver and kidneys and everything. Absolutely not an issue." As long as I'm not running into trouble and my markers are all great, I'm doing my bloods regularly and check on other things. There's no reason why I wouldn't

Dave: This is a fantastic opportunity to ask you some more personal questions if you're up for it. I've been talking about ketosis for a long time and there's hundreds of thousands of people who have tried the Bulletproof diet. It's a cyclical ketogenic diet where I say, "Every week or 2 come out for a day." One of the populations that seems to benefit the most is women because some women in fact I would say more than half of women from a nonscientific sample size but just observationally tend to get adrenal dysfunction or hormonal irregularities if they stay in ketosis all the time.

There are others who are just like I'm in ketosis for 10 years and I love my life. I don't know what the difference between them. It's probably genetic. I don't know what else it could be. Have you had any problems with hormone levels or adrenal dysfunction when you've been in ketosis for a long time?

Patricia: It's an interesting question because I think my hormones due to my sports I've always been ... let's put it that way I've been lagging behind. I think I was 18 when I had my first period. Totally a lot of things going wrong. I was also thinking when I first researched it "Is that going to work for me because I obviously have this history of hormonal imbalances clearly." It's really interesting how my cycle is just perfect. I can almost set my watch ... I had never experienced that before on a carb based diet.

Dave: Was PCOS part of your issue?

Patricia: I don't think so. No, which would be there's some good studies into preclinical studies into PCOS and keto. I don't think, I could almost swear that that wasn't ...

Dave: It's interesting when we look at ketosis and cancer and then hormones because hormones have an effect on cancer. Ketosis has an effect on hormones. This is why hacking human body it's a complex system. So much of research is like, "I'm going to look at adrenals." It's like they're controlled by the brain. The brain is controlled by mitochondria. You just look at this where you look at using 10 different modalities for cancer all at the same time. The researchers and the experts say "This is my modality. This is the only system I work on." I wanted all of those effects at once because it's a complex system. Do you ever wonder about that?

Patricia: Definitely. I wonder how in oncology we're so focused on the tumor. What is the tumor doing and how is the tumor affected by this or that? I think that's part of the problem of our medical system at the moment. It's this compartmentalizing and just looking at 1 system alone and not being aware of the knock on effect it has on the entire body. That's why I love functional medicine which really connects it all and joins it off basically.

For me it's always been clear the more I learned about cancer and I studied it very intensely and read a lot of things about it. There's no one reason so why should there be one treatment. One thing that works so it's so multifaceted that we have to really attack it from so many different angles. I'm talking especially also about emotions. Instead of cre-cre energy. I'm a strong believer in stuff like that but also looking at when we talk about hormones.

When I get emails from my clients at 3:00 in the morning, what are you doing at 3:00 in the morning on your computer? You should be sleeping. There's some really simple things that people just don't know or they're not aware of them and they can make a huge difference. It's just piecing all this together and I think as a nutritional therapist or any practitioner you really have to be aware of this. Where do we start? Of course that's always the big question. As you say everything then has a lot of implications. I always had to laugh when my oncologist was in the UK. He's in San Francisco now. When I went for checkups, he usually came in and asked "So how's the eye?" I say, "I am fine. Thanks."

Dave: That's a great line.

Patricia: The accessory of the tumor is fine. You're going to tell me now what the tumor is doing and how the eye is doing but it's so funny. They just get completely focused on the body part where the tumor is. We know that the environment is equally important, the environment of the tumor.

Dave: That leads in 2 very different directions for the next question I want to ask you. I got to make sure I remember both of these questions. One of them let's talk about the environment. I am particularly concerned about blue light exposure and cancer and macular degeneration in people. I manufacture filters that I have on my phones that take out some of the blue light. The stuff that most suppresses melatonin.

We know melatonin is anticancer. If you're staring at a bright white iPhone before you go to bed or Android it doesn't really matter then you're suppressing melatonin. Melatonin in part helps you knock your cancer. You shouldn't be staring at bright white lights and you really should be wearing dark glasses and dimming your phone and doing all sorts of crazy stuff. How important do you think light is on the skin and in the eyes when it comes to cancer and cancer metabolism?

Patricia: I think it's hugely important. Not just for eye cancer but obviously and particularly for eye cancer. You mentioned melatonin which is one of the major antioxidants as well and hugely anticancer so I know a lot of cancer patients who actually supplement melatonin. I think it goes a lot further. I think there are so many effects of light especially light exposure. I think it's both extremes. Getting the light exposure first thing in the morning an obviously here in Ireland it's a little bit tricky sometimes. It's still bright.

Obviously it's the brightness and trying to turn towards the sun. Just having that in the morning it's almost like, "We're awake now." Then obviously in the evening just reducing the blue light. It's interesting that the World Health Organization they classify shift work or irregular sleep patterns as a probable carcinogen and I think that says it all. I was recently at a cancer talk and it was organized by the Irish Council Society. Somebody asked about "How important is sleep?" The person doing the talk said, "We're not quite sure, could have an impact."

Dave: Good god!

Patricia: WHO is super conservative.

Dave: We need more evidence.

Patricia: Yeah we need more evidence. We need more randomized controlled trials to actually show how the effect of blue light can really effect in terms of cancer especially. I'm a strong believer in it. I don't know if you're familiar with Dr. Jack Kruse. He's doing a lot of research into light and he's actually convinced ...

Dave: Isn't mostly Nick Lane? It seems like whenever I read Nick Lane's work, Nick is the one who's originating a lot of the ...

Patricia: Could be yeah. I'm not 100% sure. I'm listening to some of his ... its interesting how it affects ...

Dave: Nick was the originator of a lot of the stuff. He wrote a big paper in 2013 around eyes specifically light and mitochondria that kicked a lot of that off. I'm a huge fan of just going to the source on that stuff.

Patricia: Only very recently actually started to really look more into it especially when it comes to receptors in the eye and all of that and how it affects us. It's an area with huge potential when it comes to ketosis especially as well how to optimize.

Dave: For you after this I'll send you Nick's paper because it's specifically about mitochondria in the eye and around how light changes mitochondria. He's one of the top thinkers Nick Lane and Ling are the 2 who I go to. There's so much going on with the color of light. I have red lights I have for years and house at night instead of amber or instead of these other things wear unusual colored lenses and just do all this because the evidence is out there around sleep quality, around circadian signaling and specifically around what happens with cellular energy production in the eyes and just in the body.

I'm profoundly concerned about macular degeneration much less cancer because of the changes we've had with LED lighting. It's one of those things. When I hear an alternative cancer research they'll just say, "It's about your food." It is about your food. It's absolutely about your food. If you eat junk food your chances of getting cancer go up. If you get rid of your junk food and you're still looking at junk light the odds of getting cancer are really, really profound. I look at junk light as a problem one that I like I manufacture stuff to help reduce the impact on myself

but I simply don't believe that light is more important than food. What is most important is food and light helps to modulate what your body does with it.

Patricia: I agree.

Dave: Do you see cancer researchers in the next 20 years telling people "You've got to change your diet to be in ketosis." Do you think that's going to happen in your life? Let's say your life is probably longer than 20 years. I shouldn't say life in 20 years.

Patricia: I sincerely hope so. I think we're going in the right direction because there are so many really brilliant people working at it and motivated passionate people working on it. I think the preclinical data has become too compelling to simply ignore it. Whether it's going to be applicable for all types of cancer, I think that's the other thing we have to really study very hard which types of cancer responds best to the ketogenic diet. If you could find something and I know in some ... I was at a conference in Fulda in Germany last November and they're starting to do metabolic typing of tumors.

I think that's where it's going. Is that tumor mainly predominantly glutamine dependent or glucose dependent or a mix of the 2 or none? There are probably tumors that don't respond to the ketogenic diet. We just simply don't know enough about it yet. We have to study it. If somebody says, "I'm not trying the ketogenic diet. I have cancer but if you say it's not safe then that's not an argument." The safety argument is simply not valid. That's why I think any patient who has the support and who has the energy and the motivation to do it, I strongly encourage them to study and to look into it definitely.

Dave: Having cancer is not safe.

Patricia: No it's not very pleasant. It's not on my list of go-tos.

Dave: That's a great tweet. Having cancer is not safe. It's what it comes out to when they say ketosis you have cancer. Like, "Yup." It probably is because living isn't safe when you have cancer either. You've got to solve the problem.

Patricia: It's all a matter of perspective, isn't it?

Dave: Yeah. That was one question about light and the environment of cancer where it's a question of food and temperature and light and air pressure and oxygen and all the things that you can change as a biohacker if you want to. You can change the pressure. Sit in an ice bath, get in the hyperthermia chamber and ... I find almost no focus on those things in mainstream cancer research even though it seems like they should be. The other thing you mentioned though is you mentioned your energy and emotions and things like that. I'm all over that.

One of the biggest Bulletproof recommendations I have is really expensive. It's that every night before you go to bed write down three things you're grateful for. It changes your sympathetic nervous system which changes your metabolic state. It actually does. Do you meditate? Do you have a practice of some sort around managing your emotions? Do you think it has any impact on

cancer?

Patricia: It's an interesting question because I actually started chanting when I was diagnosed because I didn't just want to sit at home and twiddle my thumbs. I couldn't work obviously for a long time because I literally couldn't look into the computer without having some major reaction meaning I had to throw up. It took a while for the brain to resettle and to get used to looking into screens. Reading was out for a long, long time. I said, "I'm going to do chanting."

I was always drawn to Buddhism. Funny enough a lot of my friends in Dublin they were actually practicing. That's what I started. I did quite a bit at the beginning morning and evening routine. Now it's more moved towards I do emotional freedom technique and I do more walking meditation. In the morning after dropping the kids, I walk home to a nice little forest and that's where I do the grounding and just being basically and breathing.

For me I can't really have a really strong practice. It's really in terms of time management as well because I have 2 small kids and all of that. Incorporating it into my day and also breathing techniques I use a lot. Basically just coming back from time to time and just stomping all over the place and being totally immersed in work and just drag myself out of that especially running really helps and exercise helps me big time. These are my main techniques and I try to really incorporate and emotional freedom technique I do as well.

Dave: For listeners, emotional freedom technique is also known as tapping. You can check out like the tapping solution. It's a part of tapping. I've seen profound changes in people without cancer from EFT or from tapping and also from EMDR which sometimes uses tapping but doesn't. These are way of addressing those core emotional traumas that affect your metabolism like for lack of a better word. It's awesome that you've gone down all of those paths.

You mentioned grounding. I started talking about that as a treatment for jetlag. Like in 2010 I started blogging about it and people thought I was nuts. Now it's a little bit more accepted. A lot of people have kind of gone on to that idea. Way back in the day though it was considered pretty weird. I would fly from San Francisco to Cambridge, England. Every month I would spend a week there which is this horrible jet lag like some of the worst you can do flying east like that. I was doing all these experiments. If I get there, do I fast on the airplane or not? Do I exercise in the morning to raise my body temperature?

One time I exercised in the morning, one time it was actually sunny in the UK. There's a park. I probably got some sun exposure, probably had sunglasses on so it didn't count. I did yoga in the park. I was earthing. I just remembered this was 2008 or so before earthing had really come out. I remember exercise works but it wasn't ever exercise. it was the earthing, the grounding that worked. that was why I started ... I wrote about that early on and the last time I was in Germany I was there outside the hotel with my feet on the grasses, 48 degrees outside Fahrenheit and just cold. You do it because it works. you mentioned that you did that when you go for walks you take out your shoes and go for a walk somewhere and meditate all the same time?

Patricia: Yeah. I actually grew up not wearing shoes that much. My mom is still ... even in the deepest winter she's usually barefoot.

Dave: Is that a Swiss thing?

Patricia: I don't know if it is. I don't think so actually.

Dave: It sounds Swiss.

Patricia: It's a family thing. I'm actually myself partly just taken this habit as well. I like to be barefoot for whatever reason. It must make me feel better otherwise I guess I wouldn't do it subconsciously. Also just walking in the garden. I think it just helps even just connecting. Whatever you call it if its earthing or grounding I think it is a great thing but some people they probably would feel that weird taking off ... I'm on my own bed in the morning. I have it coming that way. It is okay but I think it's just this connection with nature that I really crave. It's always been there but I think with cancer it's become even more pronounced. Obviously growing up in Switzerland and pretty much a view to the mountains from the classroom that I think is just an innate thing as well that I have. That really helps.

Dave: It's hard to quantify that because in double blind trials for nature exposure they're all very forced and weird. Anyone who tries it for a while realize nature is a potent drug in it of itself, right?

Patricia: Yeah.

Dave: Good thing they can't write prescriptions to keep you from getting it.

Patricia: That's exactly it. I had to move a bit from the mountains to the sea now. Whenever I get a chance I go swimming in the freezing Irish Sea. Initially I find it really hard to even just get in the water. Now I'm pretty used it and I get in very quickly. I manage to stay up to 20 to 30 minutes sometimes. It's so life enhancing. It's absolutely fabulous.

Dave: There's lots of good reason to do that. I'm not far from a cold ocean but it's just long enough that it takes too long to get there and back when I have kids. I have cryotherapy though. I have a liquid nitrogen that cools the air. I used to weigh 300 pounds and 50% more than do. I don't know how many stone that is but it was a lot of stones.

I had toxin mold exposures which inhibits mitochondrial function way more than light or bad food actually. It's a direct mitochondrial poison and chronic Lyme disease and all these things. I don't have those anymore. Occasionally I breathe some mold or something but like it reverses very quickly. I just told this stuff because I'm kind of 180. When you realize how much control you have in your metabolism like, "Oh my god this is awesome."

When we talk about this like you're someone who's dealt with cancer and is looking at living a long time now that you've managed it. You're making changes to your environment in order to have more control or to make your body and metabolism that you want. What we do doesn't sound too dissimilar. I'm 1000% convinced that controlling your mitochondrial function is one of the ways that you can stave off aging and you can feel really good the whole time you stave off

aging. That's why I like my life this way.

Patricia: I think that's why it's so important that we start ... in cancer research we start addressing this question. Is cancer really a genetic disease? I actually really don't believe it solely is or whether it's a mitochondria, a metabolic disease. The work of Thomas Siegfried who's based in Boston is absolutely brilliant. He's showing as well that the major hallmarks of cancer there's a direct link to the mitochondria as well.

It really saddens me and it's very frustrating that not more money is being put into researching all this when it comes to cancer and that really every single cent on those is invested into finding more genetic mutations that we can possibly target with drugs. When we see the potential that if we just shift that mindset and ... It's a chicken and egg situation. What was first was it the DNA mutation or wasn't it mitochondrial damage? The nuclear transfer experiments I'm sure ... are you familiar with them?

Dave: Uh-hmm (affirmative).

Patricia: I think they're absolutely mind-blowing. When I first saw this I was "Holy Moses! This is just ..."

Dave: Some of our listeners probably ... walk them through for our listeners.

Patricia: Basically those are experiments where they had healthy cells and when they replicate you had 2 healthy cells. Nothing new. Then you have a cancer cell that is the nucleus is cancerous and also the cytoplasm. The area around nucleus where the mitochondria are is cancerous too. That replicates and then you have a cancerous cell. Not much surprise there. What happens though if we transfer cancerous nucleus so with DNA mutations into a healthy cytoplasm that's really interesting because then the cell replicates then and basically then the DNA or the cell is still okay. Its functional or its being basically apoptosis happens. It's still a functioning cell.

The tissue is still working as well if the mitochondria are healthy. What happens if the mitochondria are cancerous and those healthy nucleus with no DNA mutations? When that cell replicates then basically the whole cell then becomes cancerous very quickly. Actually we have it in our book as well. It's very nicely demonstrated there.

Also with comment sometimes I think it sounds a bit abstract and I explain it. That really shows it demonstrates mitochondria they possibly protect the cell from DNA damage and when the mitochondria when something goes wrong with the mitochondria then that's when we have a real problem when the cell replicates. That's why it's frustrating for us. This is not researched a lot more by mainstream cancer researchers.

Dave: There's so much going on. One of my areas of expertise is around mycotoxins as well as fungal infections and water damage to our environment. One of the things that we now know mitochondria does and this is going back to Nick Lane's work. Mitochondria use photons for signaling between each other like very brief bursts of light via photons. When you are exposed to mycotoxins that inhibit respiration that can be cancerous but if you have a fungal infection itself it affects light signaling between the cells. I'm a hacker by training literally a computer

hacker.

One of the things you do if you really want to hack a system is you mess up signaling between things. About 100 years ago we decided that we're mostly chemical beings. This was a big split in medicine where half the people of the time thought we were electrical, half that we were chemical. We're both. We're magnetic and we're light based and all sorts of other things. It's all simultaneous. It was that division where we focus especially cancer research is chemical, chemical, chemical and now genetic but they're forgetting about the signaling side.

As a hacker it's like that's how you disrupt the network. You just get in there and you gum up the way things talk to each other and pretty soon the whole thing falls down. That seems like a pretty good descriptor what's going on in cancer. I look for things in the environment like light or like fungal toxins you breathe that break the mitochondria and say, "What did that do to the whole system?" It breaks it.

Patricia: There's a care oncology clinic in London actually and they're looking quite a bit into antifungals as well. They're basically repurposing old drugs. They're using a mix of metformin and then also antifungals and very low dose antibiotics in case there's anything else and low dose statins as well very surprisingly which is perfect ...

Dave: That is surprising.

Patricia: Yeah which is very interesting that they're basically old drugs that aren't really ... I think they can't. They could potentially be patented again but they're run out of patent. They're designing whole cocktails and then basically just tailoring them to the individual. It also means that some people they ... it actually makes it a lot easier to follow a ketogenic diet that they can have a little bit more carbs obviously because they're on the metformin as well but for some people it seems to just work incredibly well. It's interesting that you mentioned the antifungals because it is definitely a big thing as well. I can't remember the doctor saying who ... instead of came up with the theory cancer fungus and ...

Dave: it was AV Constantini. I bought his books. They were \$500 in about 2006 from his daughter and they had to ship them from Germany. In fact he's one of the people who's informed me the most in my exploration of how the body works. It's amazing that you know of his work. Based on his work if I had cancer tomorrow, I would be doing all the things we're discussing here but I would also be doing oral amphotericin B which is a very, very old antifungal drug but it's one of the broadest spectrum heaviest duty ones intravenously. It saves people with AIDS quite often if it doesn't kill them because it's so bad.

Orally it's relatively safe. I just don't know where to get it because it's hard to find. That would be something that ... if you have cancer, talk to your doctors if you're listening to what I'm saying. There is definitely amazing research on what these things could do. Whether those drugs are mitochondrial, I don't think anyone has ever looked but maybe they are. I don't know.

Patricia: I think it's again an old cocktail of things. I think relying on one strategy too much is probably not wise when it comes to cancer. Also it's constantly changing. It's such a dynamic process like

some people they say, “Oh can you just design a ketogenic diet for my meal plans.” Then I just keep repeating them. I was like, “That’s not we need the way it to work.” You have to adapt. You are changing all the time. Your environment is changing all the time. I think this is so important to just keep very flexible and adapting whatever protocols you have especially with cancer patients.

Dave: One of my favorite guests on Bulletproof Radio was Glen from Alderspring Ranch. This guy is a soil biologist turned grass-fed cattle rancher. He describes how ... he had 100 square miles where he grazes his cattle. He says “The difference in my cows ... “and his cows taste better “is that his cows will look at the grass and they’ll choose exactly the tuft of grass that’s right for their body.” There’s a difference between what’s growing here and what’s growing here even if they’re 10 feet apart. They’re connected. They’re semi wild cattle.

I think we have some of the same stuff going on with those 2. Your body knows what it needs and the ketogenic meal plan that 1 person just thrives on might not be quite right for another person. They might still need ketosis but maybe they needed more broccoli. Who knows but if that’s what your body wants like give it more broccoli. Broccoli is good for cancer too.

Patricia: That’s the thing. There’s also no one way of doing the ketogenic diet. Like you say some people absolutely thrive on cyclical and others they’re fine in deep ketosis. Then there’s people who are actually doing really well on just low carb and they’re not necessarily in ketosis or doing maybe very, very light ketosis after fast a little bit. It really there’s no 1 size fits all definitely in the ketogenic diet. I think we also have to be careful that we don’t constantly focus on the macros and that micronutrients are sometimes getting a little bit forgotten about. For some people they’re just so focused on getting the macro, the carbs, fat and protein right that they forget “There’s a whole range of other foods that we should include and make ketogenic obviously.” I think that’s very important and that’s what I work on a lot as well.

Dave: Let’s talk a little bit more about macros because I have a book it’s the Atkins diet the original 1st edition of his book. I have it on a shelf right here somewhere because it came out the year I was born. It’s just a reminder that this knowledge is about ... I was covered in stretchmarks. I was obese because that knowledge was completely ignored and shunned even though literally tens of millions of people lost 100 million pounds on the Atkins diet before I was 12. It made a difference. It was the original ketosis diet used on a very broad basis even though we didn’t know why it worked and had mistakes in it. You could eat cream cheese and pork rinds all day long which I don’t necessarily recommend. What are the macros and what are the types of proteins maybe that people ought to avoid even if they’re hitting their macros?

Patricia: In terms of macros what we look at is and again this depends if somebody has to lose weight or has to gain weight. That always obviously then makes a difference in terms of the fat intake. If I work with somebody it’s obviously the goal is determined then the macros especially also if somebody is going to treatment for instance then I have to adjust protein probably a little bit. With carbs as well its usually what I find is starting ... reducing to 12 grams over maybe 2 weeks or so depending on where they start from obviously and then keeping it at the 12 grams for a little bit. That’s usually it’s around 4% of total calorie intake sort of on a standard ketogenic diet. Then protein is around 12 to 15% so not very high.

Again there's quite a bit of research at the moment being done into insulinogenic foods and protein rich foods. The amino acids as you mentioned earlier are probably a little bit less preferable. It's also interesting that there are certain foods that can ... they have no carbs but they raise insulin. I think that's [crosstalk 00:57:22]

Dave: Like whey protein and things like that or what are you [crosstalk 00:57:24]?

Patricia: Yeah. Also in terms of the cheeses. There seems to be a bit of a difference. The best ones seems to actually be the soft ones. Then the very hard ones some of them are a lot more insulinogenic. Then also beef seems to be more insulinogenic. Turkey apparently is highly insulinogenic.

Dave: Is that tryptophan or something weird?

Patricia: Probably. I don't know how many really very, very solid studies are being done into this and again it's probably like the glycemic loads where it is individual to some extent as well and people simply have to measure. It still is interesting that there are certain proteins that obviously then in terms of the insulin that has an effect on the ketone body as well. If insulin goes off, then the ketone bodies usually are affected as well. This is things that people have to test and I can eat certain cheeses and I see actually on the ketonix that my acetone so what we measure in the breath, the ketone body it seems to be affected. Not for very long but it is interesting.

I'm using the ketonix just to test certain food sometimes. The longer I'm in ketosis though the less it seems to really be a problem. I think also that's a very big question as well. How do we change the macros over time? I'm probably back at about 50, 60 grams of carbs again. I'm not down at 12 anymore. My macro has half shifted a little bit. I also have a little bit more protein because I exercise more than I would have had when originally when I started the ketogenic diet. I wasn't exercising and my focus was really on the tumor and cutting it right for the tumor.

I think that's the main thing. Then obviously fat is I always say it's the buffer. It is around 75 to 80% of total calorie intake but again if somebody is massively overweight, it's interesting that it's probably not really a super high fat diet but you have to restrict calories a little bit somehow if they want to lose weight obviously. Not for all people but for most. That's the buffer then. The fat intake really varies then from person to person. Some people I know they can eat almost endless amount of fats and they weight stays stable or it doesn't seem to make a huge difference and others.

I think especially women they really have to if they don't want to put on weight after a while on the ketogenic diet they have to keep a bit more of an eye on the fat intake which that's obviously a controversial thing to say. When I sometimes see "Everybody has to eat more fat." In the UK you probably heard its going on the past few weeks. I think it can be also a bit of a dangerous message because people think "I just put butter on everything but I don't change anything else about my diet."

Dave: That drives me nuts. If you're going to eat 4 croissants and wash them down with Bulletproof

Coffee, you're not doing it right. There are basic things you got to do around doing things. With that said, if you have Bulletproof Coffee you probably won't want to eat 4 croissants. That is a profound thing in it of itself, right?

Patricia: Yeah unless you have the 4 croissants first then you're still hungry, then that's the problem.

Dave: It is a major problem. My recommendations are really clear on that. Do Bulletproof coffee. Fat and protein in the morning. Don't eat carbs in the morning for anyone even if you're not on any special diet just because its inconvenient to be starving at 10:30. It simply makes the quality of your life better when you do that. If you're going to have your carbs, do them at lunch and more specifically towards dinner because they'll improve your sleep quality. You do this on a regular basis without any cravings, then maybe your fat maybe you're not but at least you have tons of energy all the time. That's a win.

Patricia: I think we have to be very clear with the message when instead of ... we are moving with the public health collaboration now in the UK. We are moving towards something has to happen with the food pyramid and everything. I think getting the message very clear is going to be very important to make sure people benefit.

Dave: Let's hope this episode of Bulletproof Radio helps to make that message clear that being afraid of fat doesn't make sense. Being afraid of some fat does make sense. All proteins are not the same. If you have cancer and you haven't thought about ketosis, you probably aren't considering all your options I think. I hope those messages are really clear.

Patricia: Yeah, exactly.

Dave: I have one more question for you. This is a question that every guest on Bulletproof radio has answered one time or another. If someone came to you tomorrow and said, "I want to perform better at everything I do in life." this is someone without cancer necessarily but someone says, "I want to kick ass at everything I do, what are the 3 most important things I should know?" What would you have to offer them?

Patricia: Stress levels, find a way to manage stress which is one of the things that is crucial for me. I find that as well. That's point number 1 first. We didn't talk about stress. I think that's a huge one or managing stress. The second one it probably would be something diet related definitely. Starting with getting rid of junk foods depending on where they start from and definitely looking at diet. The third one community. Make sure you surround yourself with people that give you something and you give something back to them that you have great relationships in your life. That will be the 3 things.

Dave: Beautiful list. Patricia, where can people find out more about your work and specifically your book?

Patricia: My website is patriciadaly.com. That's the main site that then leads on to I have a few really nice freebies as well when it comes to the ketogenic diet where people can actually just learn the basics and see "Is this something for me?" where patients and practitioners and that's



ketoforyou.com.

Dave: Spell that. Is that keto F-O-R-Y-O-U.com?

Patricia: Yeah exactly. The link that goes from Patricia Daly with the ...

Dave: Patricia Daly is P-A-T-R-I-C-I-A, Daly, D-A-L-Y, right?

Patricia: Exactly.

Dave: All of that will be in the show notes. It will be on the transcript of this. If you want to download the transcript or whatever else. Patricia Daly D-A-L-Y.com

Patricia: That's right. Then we simply have for our book The Ketogenic Kitchen I actually have it here. It's theketogenickitchen.com. It's coming to the states in September. It's going to be published in the states soon. Thanks. Is going to be on amazon.com as well. At the moment it's just in the UK and on the book depository but we're coming over now which his very exciting.

Dave: If you're looking for some more recipes you can use that are high fat and low in carbohydrate and delicious and full of vegetables that kind of recipes I recommend, this is a good book to check out. I look forward to be able to get in the US.

Patricia: Thanks, yeah. Great.

Dave: Thanks Patricia. Have an awesome day.

Patricia: You too. Thanks a million again for having me Dave.