

Announcer: Bulletproof Radio, a state of high performance.

Dave Asprey: Today's episode is profoundly cool. You're going to hear from a doctor who doesn't believe in PTSD. He's got a really convincing case for that. You're going to learn what to do if you get hit in the head. You're going to hear from a special forces Green Beret about his experiences with traumatic brain injury. You're going to learn a lot of things you could do to manage inflammation in your brain. This episode is one of those you want to listen to the whole thing because it's just nonstop information that you can use. I had a fantastic time doing this interview. I think you're going to love it. Listen through all the way and get all the benefits.

You're listening to Bulletproof Radio with Dave Asprey. Today's cool fact of the day is that there's some new promise for traumatic brain injury patients who have lost memory function. You'd be surprised. There's a lot of people listening, maybe even you, who have had traumatic brain injury at some time in your life and you don't even know it. We see sometimes up to 90% of people who are doing the 40 Years of Zen brain training with evidence that they've been hit in the head but they're still functioning, but there's something that isn't as good as it could be.

It turns out in this new research, DARPA, the research arm of the Department of Defense is trying to hack brain function in a program called Restoring Active Memory, which is funny. It stands for RAM which is computer memory. What they did is they used electrical stimulation on the brain which isn't that new. They haven't always had the best results. There's a lot of variables you can play with. The researchers here looked to these variables and figured out why. Many times when the electrical stimulation is put across to your brain, the brain is processing its own electrical impulses and it gets interrupted. In fact, it could even impair it.

In this new DARPA research, they figured out that using eSIM only when the injured brains in the process of forgetting how to move to the next cognitive step fix the problem. If they did the stimulation right after they detected low level in coding states recall, performance improved. Basically, when the brain was starting to drift, they'd zap it to tell it to pay attention. If you feel like you can use a jolt when you forgot something, well, it turns out you might actually be on to something and your brain would agree with you. I've used the electrical stimulation myself for many years. I think it has helped my brain to do what it can do today.

There's all sorts of different types and sorts of different research. To look at what the brain is doing and then apply the electricity to something that's totally new and maybe really groundbreaking for a lot of the things that are happening in both healthy brains and injured brains. Speaking of brains, before we get into

today's show, if you have another chance to check out NeuroMaster, it's a new Bulletproof supplement. You ought to check it out. This has an ingredient that's shown to significantly increase levels of a compound called BDNF, brain-derived neurotrophic factor. These are key neuroproteins for neuron creation and synaptic brain plasticity. Exercise is one way to raise BDNF or NeuroMaster can raise it four times more than exercise. I recommend you do both, that's what I do. You can find it at bulletproof.com. It's called NeuroMaster.

This episode of Bulletproof radio is brought to you by Squatty Potty who brilliantly has us all talking about pooping. Everybody poops and their mission is to help you poop better one stool at a time. Humans were designed to squat when pooping and two-thirds of the world still does. The Squatty Potty stool puts you in a natural squatting position for a faster, better and more complete elimination. Your colon's sweet spot comes with a squat. This is the only position in which the puborectalis muscle fully relaxes. That's the muscle that keeps your poop inside until it's go time. When the colon straightens out, it allows for complete elimination without straining.

Squatty Potty is not meant only for people with gut or colon issues. The Squatty Potty stool is the best addition to your bathroom routine to help you prevent issues and maintain good health. Get that toxic crap out completely and you'll avoid some of the problems down the road. I love my Squatty Potty and I use it daily, sometimes more than once. In fact, now they have a travel portable version to aid with the miseries that come with travel constipation. Guys, I'm not kidding. I actually do have a Squatty Potty and I really like it. It sounds a little bit crazy but it's totally legit. Get your butt over there and receive a 20% discount by going over to squattypotty.com/bulletproof. Get your discount of 20% off by squattypotty.com/bulletproof. I'm serious. It's actually something you should have in your house.

All right, I'm super excited about today's show because we've got two guests who are pretty amazing. The first is Dr. Mark Gordon, who's a clinical professor at USC. He's a medical director at the Millennium Warrior Angels Foundation Traumatic Brain Injury or TBI Project. He is recognized as a top leader worldwide in something called interventional endocrinology, what you and I would call anti-aging medicine, an area where I spent 20 years running a nonprofit. He wrote a textbook recently entitled *The Clinical Application of Interventional Endocrinology* which is about as easy to read as the title might suggest because it's a real textbook, not the sort of book that you have out there.

This guy is basically a clinical badass, you can say. One of the reasons he is such a thing is that he himself survived traumatic brain injury and spent the last 14 years looking at what happens between mild TBI or concussion and hormonal dysfunction that changes your personality, decreases mental functioning and even causes physical decay. By the way, I've had a couple of big hits to the head including a titanium kneed to the side of my head about a year ago. I did have to really step it out myself because I felt some of those changes happening. I'm excited to see what I can learn here for my own uses today.

Our second guest, who is on the show at the same time, is Andrew Marr who is a Special Forces Green Beret. He received a TBI in combat. He is the founder of the Warrior Angels Foundation and wrote a book that's coming out soon called *Elevate: The Way of the Warrior Angel*. He is co-host to The Warrior Soul Podcast. WAF, which is the Warrior Angels Foundation, and Mark Gordon are working together to correct just this huge problem of TBI in our veterans and in other people in general. Just from a personal perspective, I'm really happy to have them on the show to support WAF because so many people come back from combat who might have been killed 30 years ago and instead they're not dead but they're rattled.

They're not just emotionally rattled. They're physically rattled inside the head which reflects itself emotionally which is a different thing. To be able to recognize that and do a research is profoundly important for bringing people back all the way to where they're capable being.

Guys, welcome to the show.

Mark Gordon: Thanks Dave. Appreciate being here.

Andrew Marr: It's a pleasure Dave, thank you.

Dave Asprey: Now that first voice you heard was Mark and the second one was Andrew. You can tell because Andrew just sounds like a Green Beret, I don't know...

Andrew Marr: We'll take it.

Mark Gordon: When you see him, you'll know he is Green Beret. He's just towering.

Dave Asprey: Yeah, towering. He got the cool tats and definitely looks like he could squeeze me in his bicep.

Mark Gordon: You got it.

Dave Asprey: Speaking of watching him, if you want to watch this episode, you can go to bulletproof.com/youtube and that will take you right to the YouTube channel where the show is listed. I want to jump in on just the far-reaching impact of traumatic brain injury and to get their ... from a medical perspective, what is the definition of a traumatic brain injury the way you see it now Mark, given your own experience and given your clinical experience?

Mark Gordon: It's a great question because there's a lot of confusion about what really is a traumatic brain injury, TBI. People think that it's being knocked down unconscious or being knocked down not necessarily unconscious but waking up or getting up and being confused, headache, nausea, and vomiting. What we're finding is that only happens in about 15% of the people ...

- Dave Asprey: Wow.
- Mark Gordon: ... but 85%, it's mild form of traumatic brain injury where they get knocked down and they stand up. They brush themselves off and they go back into the game or you're watching MMA and you see these guys getting knocked down, they stand up and do it again. Traumatic brain injury has a spectrum. The group that we look at is the 85% which is the mild form. What happens either immediately to over 17 years which has been documented is the initial physical trauma, being hit, whether or not it's a baseball bat to the head.
- Yesterday, I had someone who was hit in the back of the head by a hardball while playing baseball, or a motor vehicle accident where they don't hit their head but they are thrown forward and back and maybe the back of the head hits the back of the seat. What happens over time is they start developing changes in personality, which again can take up to 17 years. What the underlying cause of that is the process of inflammation. It's the inflammation that is now being looked at very closely as being precipitating cause for things like OCD, depression, autism, bipolar, schizophrenia. Inflammation is the key. That's why products like NeuroMaster which increased BDNF is a significant approach to addressing the inflammation.
- Dave Asprey: Inflammation is something that I target. Everything I do in the Bulletproof diet, my anti-aging regimen, just after learning from many, many experts and losing a hundred pounds of weight and getting rid of the arthritis I've had on my knees since I was 14. Any time you see inflammation, a muffin top around your pants that wasn't there yesterday, that's inflammation. How do you know if that inflammation is mirrored in your brain and is it going to be worse if you had a TBI?
- Mark Gordon: Well, it is mirrored in our biochemistry. We have a panel of 28 biomarkers that we do. The biomarkers are relative to how the inflammation interrupts the chemistry of the brain. We do neurosteroids. Neurosteroids are the hormones that are produced specifically by cells in the brain, whether or not it's we call glial cells or neurons, the actual neurotransmitting cells. There are three chemical tests that we've now added to our protocol which looks specifically for inflammation in the brain and body. One of them is called IL6, Interleukin-6. Wikipedia has a great discussion of it.
- IL-1 beta and tumor necrosis factor-alpha which has been focally looked at for causation of psoriasis, Crohn's disease, rheumatoid arthritis and there are medications that are out there, injectable medications, to adjust that one inflammatory chemical. We have a lot of chemistry, from glutens, as you well know, glutens causes inflammation. They create a cascade of inflammatory products that lead to the bloating of the body and influence the brain. The gut-brain, as you well know, are connected.
- Dave Asprey: I know that if I do stuff that makes me inflamed, I'm much more likely to act like a jerk. When I was inflamed all the time as a young man, I actually did act like a

jerk pretty much all the time. There's in me a core association between inflammation and me doing things that I don't like doing. I can see it with my kids that they do stuff that makes them inflamed. They don't sleep as well. They look puffy when they wake up. They're little hellions. Most of the time when they eat the right stuff and they're not inflamed, the way all kids are which is they actually want to be nice and they want to learn and grow. How do people know if, all right, I'm feeling off today ... how do they know if it's inflammation or something else?

Mark Gordon:

Obviously, having a physician who deals in this and having them checked out would be the best way to do it. Speaking about this Interleukin-6 and what you said about change in personality, there are studies that are looking at generic inflammatory diseases for one, rheumatoid arthritis, for two, lupus. They see a pattern of psychological changes in these people from psychosis to depression and it's all due to a chemical Interleukin-6. You get a cold, you feel smarter or less smart?

Well, if you feel less smart like 99% of the people who will admit to 1% who will say I'm brilliant all the time, what happens is the Interleukin-6 interrupts an area of the brain that deals with our cognition and where intellectual caution comes from IQ. It decreases the intellectual caution. Simple phyto from plant-based product called DHEA drops the Interleukin-6 production and can improve that fogginess that you feel during the cold or during any inflammatory process.

Dave Asprey:

Would you recommend that if people are feeling brain fog from a short-term injury or short-term response to an infection, maybe taking 5mg of DHEA just to deal with the brain fog?

Mark Gordon:

We do about 25 to 50. It's all based upon laboratory testing, 5 mg is a good start, 50 mg is a great area. Research that's been done at UCLA and elsewhere for multiple sclerosis, 1,200 mg of DHEA to help treat it. Chronic use of it, you don't get cold. I've been sick 9 days in 17 years.

Dave Asprey:

I took DHEA for the first time when I was 18 years old and I'm 44 now, so while ago, but I look like I'm 30. No, I'm kidding. What I found was it actually really negatively affected my sex drive. Since then, there's been three or four times because I'm an anti-aging guy where I'm like, I'm going to try DHEA. Every time, I grow man boobs like almost instantly. I found that in my own aromatization pathways, this is how our body converts testosterone to estrogen pretty much. If I take DHEA, I can get estrogen. I looked, I'll grow a round butt if I do that for two months. It's disturbing. I've just cautioned people listening. I want to get your take on that but just caution people listening, get your levels tested if you're going to go on DHEA especially for longer term. Anyway, that's the warning. You don't want man boobs like me.

Mark Gordon:

That's a good warning. In your unique case, there are two pathways that DHEA gets metabolized. One, the left pathway we'd call it which goes through androstenedione to estrone and on the right side it goes from DHEA to

testosterone and then to estradiol. In people who have an accelerated conversion from DHEA to the estrone, we give them 7-Keto DHEA which locks that. Then you get the benefit of immune stimulation and more thermogenics from the liver and fats.

Dave Asprey: Should everyone just take 7-Keto. I've heard more often women should take 7-Keto versus regular DHEA.

Mark Gordon: Women are more prone to the side effects of DHEA. If a woman only takes 7-Keto, she'll shut off her DHEA and lose the benefits so you need to have a combination of the two. Again, you said it right on, you need to be tested before you start anything.

Dave Asprey: All right, thank you for that. I've got to say this, DHEA is a powerful hormone just like taking testosterone. You can buy it at Whole Foods. This is one, as a biohacker, not to mess around with without lab values because it may take you a long time to get everything put back together. Again, there's no reason not to spend 150 bucks to get your hormones levels. It's not that expensive, just do it. If you're listening to this, I'm going to do what Dave does, seriously, do that, all right. A stronger warning is I know how to give given the benefits that you talked about.

Now, we got Andrew on the line and what I'd like to do Andrew is have you tell me about what happened to the extent, you can talk about it with your TBI. Really specifically, I want to know what did it feel like when it happened and what did you feel in yourself afterwards and then what did you do working with Mark to turn your brain back on and then how did that lead you to work with Mark for WAF? Because I think a lot of people listening who maybe haven't had a full on combat TBI or don't understand the pressure of TBI, didn't understand what happens both at the moment and in the steps afterwards. Your experience could be really illuminative for all of us.

Andrew Marr: Great, happy to share it Dave. Again, thanks for asking and having us on. Like you said at the beginning, I was the Special Forces Green Beret so my specialty was explosives. Furthermore, I was the breacher for my team so I was charged to putting surgical explosive charge on a denied point of entry downrange in combat. That could be a door, that could be a window, that could be a wall in addition to taking care of what's called improvised explosive devices, IEDs. I was literally over the entirety of just under 10 years in Special Forces, what we call short for SF. I was in and around explosion on a routine basis. Before that, I was a college athlete so I played college football.

I was only knocked unconscious one time in combat and it was brief. I remember I came to, because we were outside of the building. I couldn't understand why I was prone with my face down. Then I couldn't understand why the sun just got blotted out from the sky because it was about noon. I thought, oh my God, I must be in a room or some building and there's an earthquake or it's collapsing on me. I put my hands up and I realized really

quick, we're not inside but still I couldn't figure out what was going on until bullet started wheezing by my head and incoming rocket propelled grenades are coming in which triggered me to say, "Okay, we're fighting."

I was right back at it, right back into the fight and we did what we had to do to get out of that situation. Afterwards, I never really had any issues, any noticeable problems or complaints until about six months after my last trip. This time, I had been on a number of combat deployments. Again, never had any symptoms related to behavioral health issues, cognitive issues and the physical derailment that soon followed. Six months later, out of nowhere, the first thing that happened Dave was I lost all libido and that was as a 32-year-old young, very fit individual which struck me as odd. I just kept on moving.

I figured, you know what, my body had took in the beating over the last six months and it's just going to take some time to come back on line. From there, I just got completely depleted of any energy to get through the day. As a high energy individual, zonked, gone. I couldn't even muster enough to get out of bed. From there, I started to have cognitive difficulties, memory difficulties. The really hard part to deal was this for the first time ever, my thoughts and my actions weren't in alignment and I couldn't figure out why. When I raise my hand and I said, "Hey, I need some help."

What that got me through the military medical model was being that high performer in situations of life and death and waking up six months later finding myself on 13 medications. I was alcoholic. I couldn't go to sleep. I couldn't stay awake. My wife was nine months pregnant with our last child or fifth child. She had to ask me if I could keep my drinking down for the day in case she went to labor so she wouldn't have to drive herself to the hospital. Things only got worse from there. That was a cycle where I went from a high performer, no prior problems with any of the things I just talked about to life completely off the track, resorting to alcohol just to try to maintain some even kill throughout the day.

Dave Asprey: Did you think of it as a personal or moral failing because you just weren't trying hard enough?

Andrew Marr: No, absolutely not. Based on past experiences, I had this standard of performance where I was set on performing and contributing to the best of my abilities and so I knew that wasn't an issue.

Dave Asprey: You knew that wasn't it. You're a rare bird there. Most people feel when that happens, they're like, it must be me. Maybe I'm just not trying hard enough. There's a lot of guilt that comes with that. You knew something was wrong and you knew it wasn't a core issue with you. You're like, what the hell. Okay, so that's where you were at. That's actually a really an unusual and almost an enlightened perspective on where you found yourself which is probably a gift that's why you're doing what you're doing now because you maintain that. What did you do next? You're in a dark place, you're self-medicating and you're

medicating with doctors. You don't like what's going on. Your thoughts and your actions don't match, what happen next?

Andrew Marr:

Well, I came to a crossroad. My wife went to labor at the same time as our son had a genetic condition in his neck that swelled up to the size of a grapefruit. We took them in to the emergency room. My calf, my right calf had been killing me at that point for the last three days. Well, it turns out I had a massive deep vein thrombosis, a blood clot in my calf that broke off into both lungs. I wouldn't take any attention on myself until my son, who had to go into emergency surgery up on the fourth floor of the hospital where my wife was giving birth on the second floor.

I'm going back and forth at the same time while my son is in emergency surgery on his neck, Becky is giving birth on the second floor, and I have blood clots in my calf, in my lungs. I'm dragging my leg at this point because it's not working. I was in such a bad state that I remembered being at my son's hospital bed. I took the last powerful opioid that I ever took. I chased it with an airplane bottle of whiskey which was my normal. I made my son and myself a promise and I said, this is going to go one or two ways. If I keep on this same path, it's going to kill me and it's going to ruin everything I love.

I can then decide if I'm going to continue to just wholesale, take everything that the medical model is given me, or I can decide to act and channel all this negativity and hate that had grown up and channel that into something productive. For me, Dave, that was, I can no longer be a Green Beret because I've had too many head injuries. I want to be a father again and I want to get off this medication. I want to find a way to get back to my pre-injury status and help others to do the same thing. That line of thinking is what pulled me out of it. I started to go outside the military medical model. I had to put in for leave because my unit wouldn't support me to get outside help.

We had to get new credit cards to pay for all the different treatments. But I didn't care, because I was going to find a way to improve myself. Taking those steps got us some press, Mark read it. He contacted me and he basically said, "Hey, we've been treating TBI successfully not only in the civilian population, but in the veteran population now for a few years." He passed me some information of podcasts he had done with Joe Rogan. This was what? End of 2014. I never knew what a podcast was. I was busy fighting wars and doing whatever. I just said, "Okay, I'll listen. I knew who Joe Rogan was."

I listened to that, and he had a navy corpsman on there who basically had...he was on 17 medications. He had a bad go in Afghanistan, got gunshot, shrapnel to the face, attempted suicide, heard Mark talk through one of the media programs, got on the protocol. Within eight weeks, he was off of 13 medications and performing at a high level again. I can now say that that gentleman is supported through the foundation. He is off all medication, and acting and screenwriting out in LA. That was the first time I said, this isn't special to me. There is actual underlying condition that's been validated and backed by

science. And if you treat the underlying condition just the way that Mark outlines, things get better. That's exactly what happened to me. Now, we have over 200 cases that we've helped through the foundation and Mark's done 1600 times through the civilian practice. It's well documented, and that's how we merged up and had the idea to bring this on a bigger scale to try to help more people who needed it desperately.

Dave Asprey:

It feels like a software problem, but it's really a hardware problem. You fix those going on in the brain. All of a sudden, all of the stuff that you thought was a higher level or I decided to this, I didn't do it, but it shifts. I had a similar thing. I had chemically induced brain damage from living in a house with toxic molds before I have these other TBIs and a lot of the same effects, similar behavioral things. Alcohol, I was just maybe more inflamed, it made me feel worse. That was another thing for me. Your thoughts and your actions just don't align and you don't know why. When you address the brain, everything gets better.

When you hooked up with Mark ... or maybe I will ask Mark. Mark, when you guys first hooked up, to the extent we're not violating HIPAA or something since you're both on the line. What do you do to take a look at a guy like Andrew who has this obvious history of TBI? What was the first thing that you would do from a test perspective? I'm asking this because people listening are going, maybe this is me, maybe I didn't go that far but something changed a year after I got in a car accident or whatever, I fell and hit my head golfing, or whatever. What's the first thing that you did?

Mark Gordon:

The first thing that we do across the board regardless of the causation for their TBI, whether or not it's x-ray exposure, medication, chemotherapy or bicycle or a skateboard accident or skiing or waterskiing accident or snowboarding, these are things we've seen recently, is we run a biomarker panel. It's taken me 12 years to develop this panel and to interpret it. I just got finished writing a software package. I used to be in computer programming. It analyzes the labs and gives us whether or not the level of the hormones fit within what is optimally healthy.

Now, unfortunately, in traditional medicine or conventional medical thinking is that if you have a range of a hormone between 10 and 90, if you come in at 11, you're normal. That's not normal, even though you have symptoms, because we're not treating the person's, the person's complaint, we're treating numbers. Our protocol is person specific, every individual stays an individual and how we assess them based upon commonality of interpretation. Then what we do is based upon the results, we've put them on a protocol that might address some of the missing hormones or neurosteroids with an added steroid or testosterone or in a woman estrogen or progesterone.

Then some of the supportive hormones that are not being utilized adequately enough like pregnenolone, DHEA. What happens is, we put them onto a protocol. Now, in Andrew's specific case, he drove up from having visited a brain trauma center or some place in Southern California, came up, drew his blood

and I did what was called a testosterone provocative test or provocative testosterone testing. It's a way that I can see in a very short period of time how well that a patient will do when we get their testosterone levels to a normal physiological level. This isn't anabolic steroid body building level. This is a human being, a human's level not a steroid.

Anyway, so I gave him a shot. He left to go back to San Diego, I think it was. He had to hit the 405 Freeway. Now, anybody who knows the 405 Freeway, that would cause someone who is on edge like Andrew was to explode, to lose it. He's driving on the 405 listening to music realizing, I'm driving and I feel nothing. Why don't you tell us Andrew exactly what transpired after the testosterone?

Andrew Marr:

That was just it. For the first time in 18 months to two years I was without anxiety or depression. To me, I didn't have a reason to have anxiety. I didn't have a reason to have depression. It just didn't add up to me. I had this fist coming out of my stomach at all times. Within two hours of the injection, gone. It was like I was back, like somebody took a led apron vest off that I used to wear at the Dennison, I could breathe again. I called my wife as I'm going down on the 405 and we had a conversation for about an hour. It's the first time that we had talked and my replies were just more than yes or no, in over 18 months or two years.

Those were some of the immediate improvements that we saw that just continued to build upon us as we got the whole protocol going. You know Dave, like Mark is saying, just succumbing to anger and rage as a response to things that just don't dictate that type of response. I remember once I was with my wife and three little ones at a fast food restaurant and this is just a good example of how it can get out of control when the brain is not firing on all cylinders. There was some young guy out there about 18 years old who is making a scene and using foul language, threw his cup on the ground. For some reason, I thought I had to right that wrong.

I went up there and I told him to pick up the cup. He used some expletives. I told him to pick up the cup again. He said the same thing. The next thing I remember was I backhanded him and he fell on the ground and I picked him up and I threw him in the oncoming traffic. This is horrible, horrible behavior, something that I would never do in my right mind. That's when it dawned on me when I looked back and I saw my wife breastfeeding and my two other little ones in absolute shock and horror. I realized, you know what, if I can't get it right, not only am I in trouble or my family in trouble, people that I come across on a routine basis aren't safe and that just depicts what can happen when this inflammation runs ramping and out of control.

Dave Asprey:

The testosterone thing is profound because when I was 26, I went to see an anti-aging doctor. I weighed 300 pounds and it wasn't muscle. I had exercised my ass off six days a week, an hour-and-a-half a day. I couldn't lose the weight no matter what I ate. I went in, and I had lower testosterone than my mom. It was just in the floor. When I got on testosterone and thyroid, it's similar feelings

like, wow, I feel like myself again. I have the energy to bring it. I've been on testosterone for about 16 in the last 20 years. I went off it when I was experimenting with the Bulletproof diet just to see how it worked.

When I first went on the Joe Rogan show for the first time, my little jar of testosterone came in front of me because this is bioidentical, physiological replacement not, "I'm going to get jacked, dude". We ended up not even talking about it. It was interesting because it's such a meaningful thing for people to understand. Testosterone isn't something for guys who wanted to get swelled, you can use it or derivatives of it. It's actually a neuro hormone. It's valuable for men and for women. We're talking in large right here about testosterone for men but a woman who gets TBI, whether it's in combat or just in life, is there a difference? I mean, they still need some testosterone. Does it matter or is this more about progesterone for women?

Mark Gordon:

No. Women need testosterone. One of the lack of information for the general populace is the fact that we look at estrogen and testosterone and progesterone as being gender hormones or reproductive hormones. Well, it turns out that the way that we get 90% or 91% of our guys and gals to stop being anxious is through use of one product called pregnenolone which ends up dropping the inflammation of the brain, improving nerve conductivity and they feel better in a short period of time. There are other effects of pregnenolone, progesterone, testosterone, estradiol, and dihydrotestosterone. It drops inflammation.

We've now found that testosterone stimulates the immune system, specifically the cells called CD4 and CD8, which help defend us against bacterial and viral infections. Then it drops all the inflammatory chemistry in our body and stimulates the anti-inflammatory component of our body, which is part of the immune system. What we're finding is not only are you getting the libido benefits, the muscular benefits but you're getting the enhancement of all these other pathways. An article that came out a couple of weeks ago which echoed articles that had come out in the past is if you're timid or you have a startle response. You know, someone claps their hand, you jump or you hear a car backfiring and you see someone thinking that they're being attacked like a veteran who comes back and they call that PTSD which I don't believe in. It's due to this hormonal deficiencies, and they found specifically where they work in the brain. Women need it just as much as men, but dosing differences, the amount is different.

Dave Asprey:

When you're looking at numbers on these panels, by the way one thing, any time I'm working with an executive client which I don't do a lot of these days, because I've running a big there here these days but just with Bulletproof readers and listeners. If we're going to get lab tests, getting an advance hormone panel is really important so you can see what's going on. They always tell you, you're normal for your age. I'm like, I'll not normal for a 30-year-old when I'm 140. Do you ascribe to that philosophy?

Mark Gordon: Well, you're right on. This is why we use the 25 to 35-year age group. Look at 25 to 35-year-old male or female. They're in tip-top shape for the majority. That's because their hormones are in optimal level. As we age, because of trauma, because of medication, because of poor nutrition, because of lack of exercise, what happens is we start decaying in the levels. When we take the blood level of the 70-year-old and we see it now at 100 where at 25 years of age it's 800, we say, that's normal for an 80-year-old to be at 100. Let's put everybody at 100. When we take the 80-year-old, I'll tell you, we have a 77-year-old and we put him onto hormonal correction, he is now on the backyard chopping wood in Boston, Massachusetts. He's now having sex again with his wife and he is communicating. He's feeling calm as can be. One of our oldest Vietnam veteran that we've sponsored, incredible improvement.

Dave Asprey: I love that answer. If you're listening to this and going, well, that's cheating. You're using testosterone or whatever. Yes, it's cheating. You're supposed to die after you have kids and get out of the way for them, unless you want to do that for God's sake. Yes, get your levels and if you're levels look like an old person and you don't want to be an old person, then do something about it. All right, I got off my soapbox. Thank you for saying that.

Now, last year at Burning Man, I took a titanium kneed to the side of the head while being launched on a bungee cord towards another person from 10 feet away in the Thunder Dome.

Mark Gordon: Yeah, it's Burning Man.

Dave Asprey: It's a very common TBI thing. It was worth it, that's all I can say. I still maintain that I won. However, my opponent, who shall remain nameless, she thinks that she won. Anyhow, within five minutes of this I'm like, "Okay, I can't look in these blinking lights, I'm nauseous, I need to lie down". Unfortunately, I camp with a bunch of anti-aging and naturopaths and all. I went back and I took all the Fish Oil anyone had with them right away. Within 36 hours, I was on a high dose of progesterone as a short term course for treatment. I took every mitochondrial enhancer I had.

Fortunately, I manufactured them with Bulletproof - so 10 KetoPrimes, 10 Unfair Advantages, and anything to prevent that short term damage. I recovered faster from this than I have from my previous TBI, much faster. I did some neurofeedback to get my brain back on, before and after neurofeedback things and it helps. I have \$100, 000 neurofeedback gear right over there off camera. I ran a neuroscience thing in Seattle for executives. I have resources that other than ... I don't know who else has that weird stuff. This is the most valuable thing I know of, is control of your hormones, control of your biology, and control of your brain because it lets you do what you're here to do. That's why I invest way more than I should. What else should I have done? The reason I'm asking this is I'd like to learn because I'm going to Burning Man again next week.

Mark Gordon: Hopefully you're not going to get hit in the head with a titanium knee!

Dave Asprey: Yeah, I'm learning that one. I'm going to wear a helmet the whole time. I've got like a sumo's, I'm kidding. I do want to know that and also everyone listening. If they take a whack in the head, which does happen whether you plan it or not, even if you're not a MMA fighter or a pro sports player, whatever and we got lots of those guys listening. What should a normal person do?

Mark Gordon: What you did was very right. We found that carcinoids which are the Omega's, which are the fish oils are extremely good. A colleague of mine, a fellow military veteran, Michael Lewis, wrote a book called When Brains Collide. His thesis was on omega's. We know that omegas have one component, EPA, DHA. DHA is neuroprotective and helps to protect the entire chemistry by dropping chemistry. In addition to that, alpha-lipoic acid, NAC and acetylcysteine which helps the brain build glutathione which is the key free radical scavenger anti-inflammatory component that we have in our brain which rapidly is utilized to protect.

By regenerating it with NAC, it helps. The mitochondrial benefit, a lot of the inflammation knocks off mitochondria, so you lose energy production which is called ATP. When you lose ATP, what happens is, you open up these channels on neurons that leak in calcium that kills the cell. You need to increase your production of ATP or maintain mitochondrial functioning and things like CoQ10, PQQ, quercetin, all these things help to upregulate the protective mechanisms in the brain and the maintenance of energy.

Dave Asprey: I'm glad you mentioned glutathione. Bulletproof manufactures a liposomal glutathione. I took all of that, I had in my possession as well.

Mark Gordon: Whishk!

Dave Asprey: Exactly, all of it. PQQ is one of the components of Unfair Advantage. That's the stuff I was pounding. By the way, I write up a lot about ATP in Headstrong which is my most recent book and how you can have that stuff. Do you have, other than your medical textbook which by the way some of our listeners probably order on Amazon right now, because some biohackers like me, yes, this is what you read before bed. Do you have a favorite, most accessible book about this stuff that you might recommend for listeners who want to know more about that?

Mark Gordon: "Interventional Endocrinology" as you stated, came out in 2007. In 2015, I came out with "Traumatic Brain Injury, a Clinical Approach Diagnosis and Treatment". There are 10 chapters in it and one of the chapters is all about supplementation. It tells you the science, references, how to take it, when to take it in terms of supplementation. Then there's a chapter about the laboratory, which talks about here's what you need done in the laboratory and here's how you interpret them. Throughout the book, there are a lot of cases, so that if you read the cases, you can parallel it to your own experience in terms of either the entry or the laboratory results. You can become knowledgeable in what you should do in case you get a trauma or hopefully there's some physicians out

there who look at it and consider getting the book because we need more docs to help us in our network.

Dave Asprey:

We do. I would love to see every doctor out there when they're dealing this one as behavior change and this clear symptoms of inflammation. They should be asking, have you've been hit in the head? They should also be asking by the way, do you have water damage in your house? Because you can turn on all this brain inflammation from toxic mold and the treatment are funny enough, almost identical. There are some toxin binding you do with one versus the other. Turning on mitochondrial is important. What I'm going to do in the show notes, I'll include a link to the new version of that book so people who are listening don't have to try and remember when they're driving or whatever.

Then, I'll see if it's possible, I'll chat with you offline and see if we can get an excerpt to share on the blog, or to do a summary or something like that. Because I think this is the kind of stuff that people listening to the show, it's just valuable and stuff they'd care about and it will definitely drive a very substantial number of physicians listening with radio. It should drive some of them too, just add this to their tool set. Because it's not what you learn in medical school. My wife Caroline's a good trained doctor. You can always spell ATP if you're a doctor, but that doesn't mean you know all the Krebs cycle because we probably don't understand half of it still. Now, all right, so now we know what to do for hit in the head which is just a valuable thing. Everyone listening ... by the way, whiplash, same as getting hit in the head, pretty similar?

Mark Gordon:

Whiplash is called coup counter coup. It's an acceleration, deacceleration injury. What happens is, the brain sits in a fluid, suspended in a fluid. When you have a whiplash, the head gets thrown to the back and then to the front and then to the back and then to the front. That's how we end up getting frontal lobe trauma which deals with our ability to make wise decisions, the executive functions, the decision making area. In the back, it can influence your visual field. You have people who have spots and funny zig-zaggy shapes in front. That's from the posterior, the occiput, being hit in the occiput. Then their ability to forget that this is a dog, no, it's pair of glasses.

They can have visual agnosia or ... not agnosia but can't relate what the object is to its name. That can happen from frontal and posterior lobe, temporal lobe too. It's important, whiplash should not be looked at as a neck problem but should be looked at more as a head problem with a secondary of the neck strain.

Dave Asprey:

Awesome. Whiplash is a head problem and to some extent in that problem. You said some earlier that actually surprised me. You're sitting here on the line with a combat vet and you're saying flat out you don't believe in PTSD.

Mark Gordon:

Absolutely.

Dave Asprey: You got to go deeper on this.

Mark Gordon: That's why I threw it out to you. You're a smart guy, you picked up. Here's the issue, if it really was PTSD, then why are there 150 veteran suicides a week. They're all on the medication, why they still having an issue with suicide? These were suicide antidepression medications, why? Because the medication is not addressing the real issue. This is not a psychiatric issue. If you look at the Department Of Defense's definition of PTSD, it's someone who's been exposed visualizing or seeing ... visualizing a very negative situation, someone getting blown up, someone getting shot, themselves getting shot.

This creates a psychiatric issue. We're forgetting the very basic issue, there's head trauma associated with every single one of these guys. When we go back, the 200 people that we've seen plus the 1,400 civilians, each one of them has had one form of another head trauma. What happens is, and the analogy I use if I may, is you have slow leak in a tire. You fill it up. You stop at the gas station, you fill it up periodically. Then you go back on to the freeway, you drive. It gets a little bit low. You go and fill it up again. Now, you're on the freeway, it's hot outside, the asphalt is hot and the tire blows and you turn into the center divider and your car blows up and you're dead.

You could have treated it at the beginning when it was a pinhole leak in it, or you can wait until the PTSD and you crash your system. This is a continuum of TBI, traumatic brain injury. The inflammation slowly eats away a connectivity between the brain that regulates how you respond to external scenarios. The limbic system and the amygdala are areas of the brain that when I say to you, hello, you don't go chasing after me or the guy throws the cup on the floor and you don't go and pick them up and throw them on the incoming traffic. When there's disruption of the control mechanism in the brain, the CPU, you talked about RAM, I'm talking about the brain as the CPU. If you break lines or you don't have the throughput and the output in the CPU, you can't communicate with your peripherals.

Dave Asprey: Got it. If you have a hardware problem, you can get symptoms of PTSD. I've spent a lot of time with people who have ... especially early childhood trauma. The brain, end of the day, the prefrontal cortex is a pattern-matching system that is profoundly powerful. If you get a pattern match that says, when you see a pattern like this, it's a life-threatening situation...but it's not. You can take someone who has that. If you believe that definition of PTSD, you can put them through EMDR. You can teach them heart rate variability training. You can put them through neurofeedback, which is my favorite tool for that stuff.

You can reset the pattern so that they no longer have physiological signs of stress, like changes in heart rate variability or changes into a more of a beta-EEG state. Isn't there some pattern association with PTSD that's different from a hardware-caused PTSD? Are there two flavors of it, or you just flat out believe it's always hardware?

Mark Gordon: I believe it's ... and 99% of the time, it's hardware. Yes, you'll have someone who says, I've never had head trauma which I see on a weekly basis. Then when I get their lab results and it says, you've had head trauma and they stop and they think, yeah, when I was three years of age, I fell off the first balcony. The head trauma is the precedent for the predisposing factor for developing what we call PTSD. It's because we missed the process that happens poco a poco, little by little that eats away at the brain and allows for. I just said that they've now autism, bipolar, OCD, schizophrenia, all inflammatory-based. Depression, anxiety, inflammation, where's the inflammation coming from? Because I saw someone shot or I saw someone get into a ... all right, that's what caused to change my brain to be inflamed? No. You have to have a hardware physical trauma.

Dave Asprey: You're saying that the trauma or potentially chemically-induced trauma but something that causes inflammation in the brain is a requirement for people to then have these pattern mismatches that they can't sort through normal.

Mark Gordon: Absolutely. That's the bottom line.

Dave Asprey: That's a very, very interesting and intriguing perspective. I see when people turned on inflammation in the brain, somehow they can radically work through stuff that they were stuck on before with their tools that can ... maybe they're just addressing symptoms but things like EMDR. I've seen people with profound inability to function do one session. An EMDR, if you're listening and you haven't heard me talking about it in another episode, it's a form of therapy where you move your eyes in a certain way that puts your brain in a reset mode so you can see what the trauma was like and break the pattern that you're in. It can be really effective. You're saying that they only had to do that because there's a pre-existing inflammation in the brain.

Mark Gordon: There's a pre-existing and when you ...

Dave Asprey: Okay, I could buy that.

Mark Gordon: ... teach people meditation or you use the QEEG or you do electrostimulation of the brain, what will happen is, it will temporarily improve the situation whether or not it's by dropping cortisol level. Cortisol just increases the inflammation and irritation that drops the thyroid hormone and it drops testosterone. In dropping those two, you have a sudden improvement. I mean, you have an acute improvement in the condition. I was keynote speaker at the International Symposium for Neurofeedback and Research and gave a lecture, which is online on our system, which talked about every single one of the psychiatric labels that we have and their association in the medical literature, in the peer reviewed literature of hormonal relationship to it.

The testosterone and 310,000 articles in depression, then 103,000 articles with the estrogen and depression, growth hormone depression, all these articles.

They're using the QEED and they're getting good response after 40 sessions, after some incredible 80 sessions. Then they have some people who don't hold it. Once they put them onto hormonal correction, they need less sessions and they hold it a lot longer. All these other modalities have benefits but you have to make sure that the fundamental foundation of the hormones in the brain are correct.

Dave Asprey: I'm absolutely loving this. Part of the protocols we do at 40 Years of Zen is a five-day intensive neurofeedback thing but we have a chef on site, cooking stuff with brain octane which raises ketones. Ketones lower inflammation in the brain, increase mitochondrial function. They're on a full stack of mitochondrial enhancers because I can get two to three times more neurofeedback sessions per day before they crash and because people get results better.

Mark Gordon: [crosstalk]

Dave Asprey: You just explained something ... I couldn't tell you all the reasons but I knew some of them. You just filled in a few missing pieces and knowledge for me about why it works when you're doing all the mitochondrial enhancement versus not. What you're saying that matches our data, we can see on a 24-channel clinical scan, "When were you hit in the head?" You say, "I don't know." You ask them three times and they'll ... "Yeah, when I was three, my mom dropped me," or whatever. It's just old stuff or maybe it's recent stuff. It does matter. One thing that a good neurofeedback tech will do is they'll run different protocols to show the brain this is what's going on in there. You're saying if you don't address the inflammation in the first place, those things don't work as effectively.

Mark Gordon: Correct.

Dave Asprey: It takes a lot of sessions. Well ...

Mark Gordon: I think ...

Dave Asprey: Hallelujah. I'm starting to agree with you. I thought I was going to have to yell at you about saying PTSD wasn't real but you're saying ...

Mark Gordon: You can yell at me. I don't care.

Dave Asprey: I actually don't yell. I've dealt with my brain inflammation. I don't need to yell about this kind of stuff. There's going to be like, "What!" I get what you're saying. I think for people listening, if you have inflammation in your body, you have inflammation in your brain. If you smacked your head, you got inflammation in your brain. Anything you do that increases mitochondrial function throughout your body will reduce inflammation. Inflammation is a byproduct of poor mitochondrial function. In your practice and in your research

at USC Mark, what are the top inflammatory things that people are doing that are working against their brain?

Mark Gordon: First off, I'm no longer at USC.

Dave Asprey: Sorry, I saw you ...

Mark Gordon: That was ...

Dave Asprey: Thank you for correcting me there.

Mark Gordon: ... in the past. It happened what? Last two months ago, which is fine, they were a great institute to be associate with. One of the things that people do that increase inflammation, first off, is glutens and their microbiome in their gut ...

Dave Asprey: Amen.

Mark Gordon: ... they're not taking care of the gut. Now, a break right here and tell you that my daughter who's a naturopathic. I have three daughters. My daughter who's a naturopathic, Alison Gordon, is one who put me on to you.

Dave Asprey: Cool.

Mark Gordon: She said, "You got to go and talk to him. You guys will get along great. He's in the microbiome." Her specialty is microbiome in brain. She works as a consultant with us, with the Warrior Angel Foundation. It's all about fixing the gut. You need your probiotics. You need to stop the junk you're taking, the processed chemicals that we're taking that only add inflammation to the lining of the gut which releases Interleukin-6 and tumor necrosis factor that goes right into the brain and starts this incredible cascade in the brain. Excessive alcohol, cigarette smoking, not doing exercising, I like my one cup of yogurt of week. I've cut down on my dairy a lot.

Some of the dairy is good unless you're eating goat-based stuff which I don't particularly like. Anyway, poor nutrition, poor exercise, consumption of the wrong things, a lot of antibiotics. People ... I've got a viral infection, give me an antibiotic. Exposure to dental x-rays, even taking the panorex of the mouth can lead to damage to the area of the brain called the hypothalamus that controls the pituitary. You have to be careful about that. The mold is an incredible thing, your black mold, the aspergillus mold and everything. This ...

Dave Asprey: I got a quick plug there for you and for our listeners. The mold thing took years of functional time away for me, moldymovie.com is a documentary that you will love. I interviewed 12 doctors and 12 people who had it. Anytime you have someone who doesn't believe when you say mold, you tell them to watch that movie. They'll understand. It shows that personality changes and all that that come from inflammation. If that's not in your tool set to convince the

recalcitrant patient, you got to have it. For people listening, if you don't know about this, I don't talk about that much. It was a huge project, moldymovie.com. It's either free or we'd charge it like four bucks or something. It's the most important movie I can imagine. I got my soapbox there. Keep going.

Mark Gordon: Yeah. That's good to know.

Dave Asprey: Okay, that was your big list there. The things that are causing inflammation there and thank you for putting mold on there. Mercury amalgams, is that as bigger problems people say?

Mark Gordon: Half of my family are dentists. They're pulling out the amalgams. One of the things that we're seeing in our veterans coming back is that a lot of them have mercury or lead toxicity. That interrupts the cascade of hormones from pregnenolone, DHEA. It stops the progression of the DHEA to testosterone as well as mood, brain function, energy level. It interrupts and inhibits it. It's very important to have that checked.

Dave Asprey: I'm going to ask a real controversial question here, aluminum.

Mark Gordon: Okay, got it.

Dave Asprey: The reason it's controversial is when aluminum is used as an adjuvant in certain vaccines, it's there to cause inflammation which so many people, adults who get vaccines are to be worried about, kids?

Mark Gordon: Vaccines ...

Dave Asprey: I'm not asking to say vaccines are bad. I'm just saying, is aluminum in vaccine are bad?

Mark Gordon: Shots! You just took away my power there.

Dave Asprey: I'll keep on the spot, you're a doctor. I get it.

Mark Gordon: Well, aluminum in Alzheimer's disease, I'll talk about that and then as adjuvant, to enhance the wave that an immunization works. You need to really shake up the immune system, that's why they have things like DPT so that they work together and they stimulate an overwhelming amount of inflammation in the tissue that goes into the brain and create its own problems. From the standpoint of 15 years ago, if not more, they said stop using aluminum because it's associated with Alzheimer's disease. That's not the case. It turns out is that zinc deficiency, when you're zinc deficient, your body automatically absorbs aluminum as a replacement. That's how you get the accumulation in the brain. The reason why zinc deficiency increases Alzheimer's is because zinc is an important component to stop Alzheimer's, just like testosterone is, estradiol is, pregnenolone, progesterone are. Aluminum has its place.

Dave Asprey: Now, I want to switch gears and ask Andrew a question. Andrew, I've had the opportunity to talk with various Special Forces guys, navy seals and people who are pretty heavy duty operators. Almost to a tee, they have described more than one time a night of intense alcohol followed by rehydration with a couple of bags of IV saline and then going back out. There's lifestyle factors that are part of being in the military. When you just run in at full speed and it is life and death on a regular basis and it goes from ... I don't know, like nothing to so much shooting at me and then back. Do you see the food situation in the military and alcohol and other things like that as being something that maybe made your TBI worse or maybe it is just a systemic problem and what's going on in the military? Or is this something that's shifted over the last few years?

Andrew Marr: Yeah, it's a great question Dave. I do think it's a systemic problem if you look at nutrition, meals ready to eat.

Dave Asprey: Good God.

Andrew Marr: These are things that are 50 to 75 grams of sugar. It's all processed. If somebody is getting a good dose of that, over a six-month period, they have other environmental toxins, maybe they're close to a burned pit, you know what I mean. Maybe all the heavy metals that were released from discharging weapons nonstop.

Dave Asprey: Depleted uranium kind of stuff.

Andrew Marr: Absolutely, absolutely. Even the food that they cook, it produces inflammation just like we were talking about. These things do not set up to people that we send in harm's way. This not set them up for success. It makes them more susceptible to brain injuries and chronic inflammation.

Dave Asprey: There are so many that just drives me nuts because it's an act of service. They don't pay you so well in the military. You go out there, they invest a lot in a soldier. Then they save a few pennies on food. You could take someone not just out of military service but you can mess up their brain for the rest of their life because you saved a nickel on an MRE by substituting even more margarine for the one monounsaturated fat that was left in there kind of thing. It feels like somewhere an accountant, not a doctor, is making those decisions.

I'm really hoping that when they get a holistic view, maybe using machine learning or something and just say, you know what, investing in food for troops is one of the cheapest ways to have troop readiness and to cut cost in the military. I sure hope they get because man, I see that. You saw that as well in your service.

Andrew Marr: Yeah, yeah, absolutely. Now, that's why we're working so hard to get this information out there. In my last deployment day of 2013, there was no talk about brain health or good cognitive brain functioning. Now, we put out just a

plethora of information through stuff that you're doing and other like-minded people where that's no longer the case. Individuals can take the power back and make their own decisions and say, "I'm going to take these precautions to set myself up for success."

Dave Asprey: What do both of you think about mild ketosis as a thing to do? I know guys who are in deployment who order a brain octane which is a product we make that increase ketone levels after you take it. It's a source of exogenous ketones. There's always some background of ketones present. I do it every day, I give it to my kids. Is there something to be said for mild ketosis or extreme ketosis when you're dealing with TBI or when you want to prevent TBI?

Mark Gordon: I'll tell you my version of it. Ketosis has a benefit and that benefit is removing what we call reactive oxygen species which are free radicals. In normal metabolism which is mitochondria-producing ATP, the energy, it spins off these inflammatory products called reactive oxygen species, reactive nitrogen species. It's believed that that is harmful to a brain with TBI. Putting someone into mild ketosis has benefit of dropping that. That's on the traditional conventional side that Andrew and I have this conversation quite often.

On my side, when you starve the brain of sugar which is what runs on, you run the risk of causing your cells to die faster because the mitochondria needs carbohydrates to run and make the ATP. From one side, you're stopping the reactive oxygen species that can lead to damage. On the other side, you're starving the cell that causes the damage.

Dave Asprey: Your brain cells can all run on ketones not sugar, right?

Mark Gordon: Yeah, they can. If you're talking about someone with a traumatic brain injury, they're not in the healthy range, they're now in the damaged range. It's like putting a ton onto a car with no tires. You're not going anywhere.

Dave Asprey: I can tell you what I did after I hit my head, I did not cut sugar. I don't normally eat sugar but I didn't cut carbs out of my diet at all. Because having glucose present is actually good for the glial cells, the immune cells in the brain. They like glucose more than ketones.

Mark Gordon: Correct.

Dave Asprey: Neurons like ketones more than glucose. Brain octane lets me have ketones present and glucose present at the same time. I'm like, "I think I want all energy pathways available and turned on because I just took a hit to the head". That was the back of the envelope equation there. I really hope that message being sent. Because the idea I'm never going to have a carb again, I find in [inaudible] going in and out, having mild ketones present. Because I'm using this external source from Brain Octane, that's what makes my brain run best for years.

Whereas when I did my three months of zero carbs, I didn't like how I felt at the end of that. It wasn't right. All right, that was cool.

Mark Gordon: Yeah, I agree with you on that one. It's going to be a blended diet. There are some good carbohydrates in it. Then is mild ketosis, not extreme ketosis as you said about being off sugar for three months. That would kill me in a day. I'm hypoglycemic anyway.

Dave Asprey: You're an anti-aging doctor and hypoglycemic, come on, you can act that.

Mark Gordon: Hey, sometimes it's genetics.

Dave Asprey: There you go.

Mark Gordon: Good excuse.

Dave Asprey: Now, we're up against the end of the show. I want to ask each of you a question. I think, Andrew, I'm going to ask you this question first. It's a question I've asked to everyone who's been on the show. Based on your life, all the stuff you know, stuff you've done. If someone came to you tomorrow and said, look, I want to perform better at everything I do as a human being, what are the three most important pieces of advice you have to offer to me? What are the three things that matter most?

Andrew Marr: Well, Dave, great question. My experience as a Special Forces Green Beret has taught me that in situations of life and death, there's no time to sit and contemplate a response. You will default to your most foundational level of training. My suffering as it turns out was ultimately self-chosen. My dad unwittingly gave me some great advice and he said, "Son, I can't understand everything that you've been through and I know you're hurting, but if you could find a way to make your new mission in life about somebody else - helping somebody else - well then I think you'll find that would be able to help you."

I took that and I molded it into what we did with the book, in which we want to give this message to other people who are travelling similar terrain. What I found through that Dave is, one, if you want to come out of physical trauma or suffering, you need to decide to live a life worth living. For me, that was decide to live a life worth living again. From there, you need to define your life's purpose, your mission, your why. It's going to be personal to you and it is a solo mission. If you can figure out your why, then you need to determine your how. You need to figure out how you can plan, prepare and perform to the best of your abilities when the situation calls for.

I think Nietzsche said that, "If you have a big enough why, you always find the how." I found that to be true in my life, both as a Green Beret and post Green Beret. Lastly, dedicate yourself to something bigger than yourself. I was bruised. I was battered. I was bloody, left for dead, label through the VA as 100%

disabled with 32 disabilities. It started with a decision. Then it turned into a thought, and habits. We are our thoughts and our habits. That's the process that I put to turn my life around, and then with Mark to help us to bring that same level of healing to others. That would be my recommendation Dave.

Dave Asprey: Beautiful. Thank you for your service both in military and what you do now. It makes a difference.

Andrew Marr: Thank you.

Dave Asprey: You mentioned your book, is this available yet?

Andrew Marr: Yeah, "Tales From The Blast Factory". The publisher did the name which I think is pretty good. It's available through eBook right now and Amazon and the paperback will be out in January 2018.

Dave Asprey: Is there a URL people should go to, to know more about that?

Andrew Marr: talesfromtheblastfactory.com, we just sold the movie rights that would be doing a documentary film on that first. Then we will look to doing the feature film later.

Dave Asprey: Awesome. You guys know where to go to get that book and to check it out, it sounds like it's going to be a great. I haven't had the chance to look at it yet.

Andrew Marr: I'll get you a copy.

Dave Asprey: All right, thank you. Now, Mark, same question. I want to perform better everything that it is to be a human being. What are the three most important things I need to know?

Mark Gordon: Great question obviously. Three most important things to know is yourself. You have to have a sense of how you feel well and how to attain that sense of wellbeing by either meditation, nutrition, making sure your hormones are correct. To make sure that as you are learning the skills or the knowledge of how to be better, to share it. What I do is about sharing that knowledge freely to people who can go and take it and to embellish passing it on, pay it forward. Lastly is meditation, calmness, appreciating that things will go wrong in our life and that we shouldn't be so overly reactive to it.

Step back and take a minute and see how we can improve the situation to embellish the situation so the person who you're interacting with understands that there's a better way. There's always a better way. We have to make a difference by being the difference.

Dave Asprey: I absolutely love it. Now, where can people find out more about your work? What the best place for them?

Mark Gordon: The best place is www.tbi, traumatic brain injury, tbimedlegal, M-E-D-L-E-G-A-L, .com. That has all the information, couple of hundred articles with people who want to read a little bit more. go there and get it. You can get access to the book and I think I'll have in the next week, they'll be the first chapter of the book, traumatic brain injury will be posted so they can download it. It's the first chapter. It's an overview of the whole book, chapter by chapter. If you want an abbreviated read of the book, you just read chapter one.

Dave Asprey: Awesome. There's a ton of info for people listening. The one thing I haven't ask is if people feel called to support the Warrior Angels Foundation which is helping veterans come back from these TBIs. Where could people learn more, where can they donate? What the story?

Mark Gordon: Thanks Dave, we appreciate that. They can get our information and all of our social media and everything through www.warriorsoulagoge.com, that's A-G-O-G-E .com. Everything they could ever want is on that website.

Dave Asprey: Beautiful. Well, guys, I think you've added a huge amount of value today, just letting people understand how prevalent brain injuries are in society. The story of where it can take you from being an extreme high performer to what the hell just happened and then how to come back from that is profoundly cool. Contextualizing hormones is part of the brain, part of brain function not just part of muscle is profoundly important, just for everyone listening to understand. I'm really grateful. I had a fantastic time chatting with you guys. Thanks for being on Bulletproof Radio.

Mark Gordon: Thank you Dave.

Andrew Marr: Thank you Dave.

Mark Gordon: I appreciate it.

Dave Asprey: If you enjoyed today's episode, you know what to do. Actually, there's a lot of things you could do. You go to bulletproof.com/iTunes which will take you right to the iTunes page to leave a review of this episode where you can leave five stars and say, this is worth my time, because that's what the show is about. It's about you and about doing stuff that's worth an hour of your time. You can also go out there and check out the books or the websites that are two guests today just mentioned and consider picking one up. If you're a doctor or you know you have TBI in your family or you have it yourself, you might want to pick up a medical textbook. You don't have to know everything and every word.

There's enough in there that you can go, wait, now I know enough to go on and meet with my doctor who probably hasn't even read this book, and ask the right questions and to demand the right treatment and to demand the right lab panels and things like that. It is your right to do that. You're the guy who writes that check to your doctor. If your doctor says, they won't order an inflammation

panel when you know you hit yourself in the head, there's a very simple two words that you have at your disposal. Those words are, you're fired. I've used them with doctors and it's okay for you to do that. If you're a doctor listening and that offense you, I apologize. Read the damn books so no one will ever say that to you, all right?

Thanks everyone.

Andrew Marr: Awesome.

Mark Gordon: Right on, right on.