

EPISODE 373

The Pillars Of Aging & How To Stop A Zombie Apocalypse - With Guest Dave Asprey

You are now listening to The Model Health Show with Shawn Stevenson. For more, visit themodelhealthshow.com.

Shawn Stevenson: Welcome to The Model Health Show. This is fitness and nutrition expert Shawn Stevenson and I am so grateful for you tuning in with me today.

When I was a kid I used to read stories about people searching for the fountain of youth, searching for immortality. And I think there was a TV show, I think it was called "Highlander" I know some people that are saying like, "Yes, it's Highlander," and just geeking out on that.

But it was just like this immortal warrior and just had this really interesting vibe and connotation to it like this is what's possible. And even though humans have been seeking out this virtual fountain of youth for a long time, obviously no one has quite figured it out yet.

But here's the thing. What we know in our current science is that we can live a very long time. And this goes back to an episode that I did with Dr. Bruce Lipton, a cell biologist and the author of one of my favorite books of all time "The Biology of Belief".

And he was able to keep cells, human cells alive 10, 20, 50 times longer than they should be by simply changing the culture that the cells were in, changing their environment and keeping their environment clean and up to par, up to date.

And so his experiment lasted until one of the lab assistants actually forgot to change out that medium and that's when the cells died. So on a grander scale, obviously, we are affecting our own cellular culture all the time with the things that we're doing in our own lifestyle.

And we can allow ourselves to live a long, healthy, vibrant life, but there's a deeper process because it's not just maintaining the lifespan of a cell, some cells need to hit the dust and to be recycled or eliminated from our bodies, it's a process called Apoptosis, this programmed cell death.

Some cells need it to happen to make room for new growth, new cells, and we're going to talk about all that stuff today. We've got probably the best person on the planet to talk about it who's been in the research, who's been the guinea pig himself, who's been to all these different facilities and who's been incorporating this stuff into his life for many, many years.

It's the bestselling author Dave Asprey. He's going to be talking about his new book "Super Human" and the science and here is nuts. So we're going to talk about a myriad of powerful insights today and things you can really apply.

In the beginning, we're going to be talking about his story and some of these really crazy instances in his life and some of the obstacles he was up against, that led him to jumping into this life and trying to figure out how can I live to be a 180, that's his goal. I'm talking dead serious about it.

Now, you might have seen Dave or heard Dave on some other stuff, and like, "Oh, Dave's pretty super laid back." He was getting a little passionate today, and I like that, I want to see Dave get riled up a little bit.

I was actually hoping to kind of encourage that and he did and he was just speaking from his heart and sharing from his experience and I think you're really going to enjoy this. Now before he got here I was actually just leaving my house, it was actually my son Braden's first day of school today which is after Labor Day like it used to be.

I don't know if you remember, we used to start school after Labor Day, we have the full summer months but now the school year has been creeping its way more and more into our summer fun in August. But that's neither here nor there, but I was getting him off to school when this was recorded for his first day of school.

And my oldest son Jordan was getting ready to head out, he's in college now, he is the first year of college and he's also playing football as well.

And one of the things that I saw him doing is making his shake, add in Organifi to his smoothie, The Green Juice formula, that the thing that he really enjoys the most. And listen to this, this is really important— in talking in this conversation about longevity, and a big part of this is taking care of the health of our brains.

And so there was a study that was published in Plus One, that revealed that Spirulina has the potential to number one - improve neurogenesis, so this is the creation of new brain cells. So that's number one.

And number two - it was also found that Spirulina was found to reduce neuro-inflammation, so this is inflammation in the brain and this is an absolute epidemic right now, and this is something because our brains, they don't have pain receptors like the rest of our body because our brain is responsible, as you heard from Dr. Lisa Mosconi that the brain is responsible for directing and monitoring pain throughout our body, that's why it can't sense pain because it would go into hyper-alert.

And so we don't know when our brains are hurting. And with that said inflammation is a huge issue related to dementia and Alzheimer's and an inability for the brain to eliminate waste products.

Like I said, some cells need to stick around to have a long, healthy life like our brain cells, but some cells do need to get eliminated and to make their way out of our brain stores. And so helping to reduce that neuro-inflammation is one of the most important things that we're going to be talking about in science in the upcoming years, for sure, you're going to hear more about this, but Spirulina is one of those foods. And it's one of the foods that's found, it's one of the hallmark ingredients in Organifi Green Juice. So we've got Spirulina, we've got Chlorella which is excellent for chelation of heavy-heavy metals as well in the body. I said heavy-heavy metals, and that just made me think of Heavy D, shout out to Heavy D and the boys, I don't know if anybody knows about them, Dilly Dilly D.

Anyways, but just understand that this formula is powerful, Spirulina, Chlorella, and Ashwagandha is in there as well, which has been found to help to reduce stress, help to flip off that fight or flight sympathetic nervous system.

And it's a great formula, it tastes good, it's why my kids use it. So pop over there check them out, it's Organifi.com/model, that's O-R-G-A-N-I-F-I.com/model and you get 20 percent off everything that they carry.

Pop over there check them out, organifi.com/model. Protect your brain. On that note, let's get to the Apple podcast review of the week.

iTunes Review: Another 5-star review titled "The gold standard of health and wellness podcast" by Empowered Evie:

"This podcast sets the bar very high for all other health and wellness podcasts. Shawn is simply amazing. He shares his own extensive knowledge and brings on the very best in the field. Each episode is information-packed and his passion and enthusiasm are palpable. Shawn truly wants everyone to live their best life and he speaks from his very generous heart. Thank you, Shawn, for this outstanding podcast!"

Shawn Stevenson: Awesome. And thank you so much for popping over there and leaving me that review over on Apple podcasts, I appreciate it so, so very much.

And listen, if you've yet to leave a review, please pop over to Apple podcasts and leave a review for the show, let everybody know what you think about The Model Health Show. I appreciate that so much. And on that note, let's get to our special guest and topic of the day.

Our guest today is New York Times bestselling author Dave Asprey. He is known in this space as "The father of biohacking." So when you hear that term, he's the guy who really put it into popular culture.

You might also know about him through Bulletproof Coffee, through his top-rated podcast "Bulletproof Radio." And also his epic biohacking events which I spoke at the most recent one this past year and it was absolutely incredible.

Some of the coolest stuff that I've seen and some of the most amazing people there as well. And his new book "Super Human" is delivering some of the most cutting-edge, game-changing insights.

It's "Super Human, The Bulletproof Plan to Age Backward" and maybe even live forever. And so we're going to jump into this conversation with the one and only Dave Asprey.

Shawn Stevenson: You're from here though, right, from Seattle maybe?

Dave Asprey: Yeah, I'm from New Mexico. I lived in the Bay Area for a long time, I am Silicon Valley kind of guy. And then about almost 10 years ago I moved up to Canada, it turned out there is an island like half as big as Washington State and Vancouver's is not on Vancouver Island, it took me a couple of years to figure that one out.

Shawn Stevenson: I had no idea. Shout out to everybody in Canada, by the way. Man, you've got some adventures that you've been on and I had no idea about the arthritis thing when you were just a teenager.

Dave Asprey: Oh man, that was bad.

Shawn Stevenson: What, how?

Dave Asprey: You know, when I was 14 I was playing soccer and I played for 10 years when I was young. It hurt all the time. And I went to the doctor finally, and he's like, "You have arthritis." I'm like, I was sort of stunned, I didn't even know what to say and I went home, like, "This is a disease for old people."

This is the way you think when you're 14 and you think, "I'm not old and I don't want to be old." It was kind of a weird psychology thing, to be honest, but I had knee braces and all kinds of weird stuff and it just hurt.

It turns out there's a bunch of things that contribute to inflammation like that. I also had 300 pounds when I was about 21, 22. I had had 3 knee surgeries by then and all kinds of other strange health problems, nose bleeds, rashes, high blood sugar, just continued weight gain and lose weight, gain weight, allergies, dark circles under my eyes, and stuff.

And it turns out I was living in a basement that had toxic mold in it. And toxic mold just poisons you systemically at a cellular level and one of the things you get autoimmunity, you get inflammation in your joints, you get even stretch marks, I have way more stretch marks than I ever should have, any human should have.

And it all came about from the environment around me and the environment inside me, it's all hackable. If I had known what I know now, it would have been like a one month fix.

Shawn Stevenson: That's crazy. And what I kind of picked up from reading your story was you just kind of accepted it as normal because it was just a part of your everyday life for a while.

Dave Asprey: It's kind of like being colorblind. People that are colorblind don't know they are colorblind. And you'll ask them, they'll say, "I'm not color blind." And then you hold up the thing with the red and green and they say, "I don't see any difference."

You are like, "The rest of us see the difference, now do you believe you're colorblind?" They are like, "Oh." So it wasn't until I was somewhere in college and a doctor made me some orthotics that worked and I'm like, "Wow, you're supposed to be able to walk across campus without it hurting?" Because it just, it always hurt, it was just a standard thing.

So I ended up growing up, by the time I was 26, they said, "Oh you've got less testosterone than your mom. You've got a high risk of stroke and heart attack." I was about 29. "Pre-diabetes, somewhere in that range."

And you look at all the things that take you out when you get old and the cognitive function problems I was having as a result of living in places with toxic mold and eating the wrong fats and just not having the biology that I wanted.

I'm like, "Man, this is a preview of what most people get when they are in their sixties, seventies, and eighties."

Shawn Stevenson: Unbelievable.

Dave Asprey: And I don't want to go back to that.

Shawn Stevenson: When you said testosterone lower than your mom, like first of all it stopped me in my tracks and then you put that your mom was tested?

Dave Asprey: Oh yeah, absolutely.

Shawn Stevenson: So that was like not a joke?

Dave Asprey: I'm not joking, hers was tested before mine. Because even back then and this was 20 something years ago, I knew about anti-aging because I'm interested in the future and like what's going to happen, so I'd read a few things.

And my parents were getting old and I said, "You know what, I think you should go see this guy," and I was working on hacking my own health I didn't recognize that I was as sick as I was or that I was really as old as I was, biologically.

So I sent my parents in first and they saw this guy and when I went to go see him he said, "Most of my patients don't look like you, they tend to be old," like we'll just do this, and he got on my labs, the first doctor I ever met who used Excel, "I'll pull your labs on this spreadsheet so we can track them next time," and I'm like mind blown.

Now it's very commonplace but I was fortunate to find one of the first guys on earth to do that. And he said, "Yeah Dave, your testosterone is lower than your mom's," and I was just

like, "Oh my god, that's what's going on," it was one of many things going on but it was amazing what happened.

If I could go from big this obese person with arthritis and all of these problems to 10.1 percent body fat without a lot of exercise necessary, with a brain that works like crazy well and younger at 46 than I was at 36, I feel like everyone else has an unfair advantage over me, and I'm still going to live to 180.

Shawn Stevenson: Yeah, I love that too man, just the claim that you're really just attaching yourself to when you say repeatedly throughout the book and I'm just like, it's really inspiring because most people don't have the audacity to say something as strong as that.

And the thing is also you're putting things in place to make it more probable. And so first, how did you get from there to being even interested in living this long life? How did you go from like, "I'm just trying to get well" to thinking about longevity?

Dave Asprey: In order to get well, you sort of have to acknowledge that you're sick, and I didn't believe that because, "I'm not sick, look at me, I made 6 million dollars", I was 26. I lost them when I was 28 that was a bit of a mistake.

But you know, my career is going pretty well, I feel like I'm doing, I'm checking the boxes and I didn't acknowledge myself like I have got the accelerator all the way to the floor, all the time and I'm slowing down, and I can push harder but there's no room for it to push any harder.

And it actually got a little bit scary and I said, "Alright, I got to really start getting on top of my health, it's going to be the most important thing every time I get a sinus infection, every time something happens.

I can't show up at work the way I want to show up," and I was at the company they held Google's first servers, there were two guys in the server they came in like, "Hey, can you handle these first?" Like, "Yeah, we got that."

And so this is during .com times, the Facebook came in and, "Yeah, we got your servers," like it was kind of a big deal. And I just was like, "I can't bring it some days, I don't know what's going on." I got to manage my health.

But the whole idea I need to recover, I didn't figure that out until much later in the process. What I did do though, I started seeing doctors, and I write kind of the journey in "Super Human" but I started seeing some different doctors saying, "Hey, can you help me with this one thing that I don't like?"

And it was that I'm sick, it's not doing what I want. And what I realized, everyone, our bodies that we want, you woke up in the morning, your joints were stiff or you had a headache or you were just foggy or cranky or super hungry, like, "Look, I just want to show up, I want to be super nice today, I didn't want muffin top and I got muffin top, I don't know why and it pisses me off."

Because it wasn't there yesterday. And this happens all the time, we all know what this is like. So this is the mindset that I had. But a friend said, "Hey Dave, you should hang out at this is an anti-aging nonprofit group in the Bay Area".

It was called Smart Life Forum. "That sounds dumb", that was actually my response. How arrogant can you be? And like, "What kind of a name is that?" And of course, the name life hacking didn't exist and we ended up changing the name of that group years later to a Silicon Valley Health Institute. But I can tell you that I went to my first meeting and I was 28, 29 or something, everyone else in the room was 60, 70, 80, 90.

But I was like, "These are my people," and afterward, I remember the very first meeting, this guy Mike he was but 85 years old and we stayed out to 11:30 chatting just after the meeting and he was like, "I do this," I'm like, "Oh my God, this guy is taking smart drugs," and Mike, it turned out a couple of years later, he started dating a 36-year-old.

Shawn Stevenson: Oh my gosh.

Dave Asprey: And it was like he could keep up with her, they were actually in love and it wasn't sort of a lecherous sort of thing, it was unusual, sure.

But the deal is these are people whose brains work just fine and people who are saying like, "Screw this aging thing, I got this," and these are original Silicone Valey Hackers a group was started by one of the guys who invented ethernet.

And so this has been out there since 1993 and I just said, "All right, I got to do this," and I became inspired, I said, "If they can do this, and they started in their sixties, I'm starting in my twenties and thirties, what am I going to be able to do?"

And then I got to know the experts in the field and every month we bring like top people in, that's how I learned even how to do my podcast.

You interview a whole bunch of people for 10 years once a month on stage, about anti-aging stuff, you learn to do the skills that you have. Interviewing people is a skill and you've mastered the skill. I mastered it on stage with people in a room outside Stanford University.

And so after being inspired by these people, I said, "Look, I know that if I can come back from being old when I was young, maybe I can stay younger for longer."

And then the 180 number, man, it pisses some people off, but there are a few quotes that didn't even make it into the book, one of them is "Before we invented the car, the top minds at the time said, 'You know what, if you go faster than 16 miles an hour it'll pull the oxygen out of the car and you'll be unable to breathe.'" They absolutely believed this.

Of course, the first car comes along and they are like, pretty sure that didn't happen. It might have been 26 miles an hour, by the way, I could be wrong on the number, 16 seems a little low.

But anyway, they figured out that wasn't true and same thing, I'm going to fly, like, "They're not going to fly," but my favorite quote of all is from the head general in the US Army and he's talking to Congress in 1940 something and he says, "I speak as an expert on munitions and explosives, that atomic bomb thing will never go off."

So look, I don't know if it's 180, and maybe I'll die trying right, but if it's not me, it's someone that I know, it might be you, it's someone listening to the show right now. And here's the deal— 120 is in the bag because we've already seen it and these are people, they drink, they smoke, they do whatever it was accidental, and they probably had good genes right.

There's also a good number of people who are 120, who are actually just taking advantage of their parents' insurance because they're not really 120 they're just really old, so it turns out a substantial number of people who claim to be really old aren't as old as they say they are. But we know we can do it.

Shawn Stevenson: It's been done.

Dave Asprey: Right. So now let's see, given that I've interviewed for "Super Human" and for my show just dozens and dozens of the people cracking the code of aging, the top people on earth, Nobel Prize winners and you know what, we know more than we ever have.

You and me can right now pick up our phone and go to Google and access more knowledge, more research, more information than a king or a president 30 years ago. I mean, it's unfathomable. Do you remember Microfiche?

Shawn Stevenson: A little bit.

Dave Asprey: Okay. So I'm dating myself here, I'm 46, I'm not 96, right. When I was starting college I had one of the first search engine accounts but no one else in my class knew what the Internet was.

Shawn Stevenson: Is this like 19—

Dave Asprey: 1994, 1995. So to go do research for a paper you'd go to the library and you get these little transparent plastic card things and they're like photocopied and super small, almost like a microscope and you put it in these little readers and you turn a little knob to read things. And it was so crazy.

And then what I would do is I'd go home and I would use this website called Altavista, one of the first search engines, and I was making these papers and my professor was like, "Oh my God this is the best research ever, I love this paper," and I'm sort of laughing going like, "It's because I can search better than you."

And I look at where we are now. I couldn't write "Super Human" it would take me 10 years to write this book 10 years ago, but now the information's all there so the speed of progress is happening and given that, given that I know the people doing the work have been at it for decades, I'll be damned if we can't do 50 percent better over the next 100 years of my life.

Like, look at where we were 100 years ago, we were fighting wars with horses in 1919. It's a whole different world. If we don't do 180 I'm stupid and if a truck gets me tomorrow I'm stupid too.

Shawn Stevenson: Man, this is so awesome. If you're thinking about, even in the book you detail some of the stories of just historically we've been chasing immortality. Our ancestors were kind of looking for this virtual fountain of youth and they found little pieces here and there.

It's again, like where we're at now with technology, with their access to information it is really inspiring. And one of those things that I admire about you was you chased after it early because you found this information out—

Dave Asprey: Being old sucks, if you do it the wrong way, and I just did it the wrong when I was young. I chased after it because it was a painful crappy thing to wake up every day, I'd be like, "My body hurts and I can't think." I was a little selfish about it.

Shawn Stevenson: Yeah, absolutely and you found yourself in Nepal, and the knee is hurting, you were traversing, I think you were first, you were coming down altitude first.

Dave Asprey: Yeah, from the Annapurna circuit in one day to make a flight.

Shawn Stevenson: And when was this? How old were you?

Dave Asprey: Let's see, so it's been 2004. 30-ish, 32 maybe. And so I descended 7500 vertical feet in one day and that's more than a mile, it's basic coming on passes.

I was using trekking poles, but by the end of the day I was like, "My knees really hurt," and the next day I woke up I couldn't walk across the street to get breakfast.

Shawn Stevenson: With the poles.

Dave Asprey: With the poles. I mean, I was truly disabled and I was, man, I got one or 2 days to resupply and then I'm getting on a bus for 5 days to go from Kathmandu to Lhasa, and then I'm going to somehow make my way across to the other side of Tibet and then I am going to walk around this mountain, it's the holiest mountain in the world.

And I didn't have a plan very well, it was sort of just let things happen the way they're going to but I was thinking, "I don't think I could walk a 100 yards. So instead, let's see how fast I could recover." Well, I'm at super high altitude driving overpasses in the Himalayas, it was a challenge.

Shawn Stevenson: So I think you already had some education about collagen and so you were looking for a little dose?

Dave Asprey: I knew about collagen and I knew that you really can't buy collagen, and so I said, "All right, what can I do?" I went to this little restaurant, was it a little restaurant, there's a town that's got 4 buildings and you all sleep in this big shared room, the beds are like 5 feet long, I'm 6'4", so I'm hanging off the end of the bed and there's one restaurant.

And I go in there and the menu is in Chinese and so I ask the Chinese guy who's on the bus with me to read the menu and he said, "Pig's ears," I'm like, "Oh." And that's the only thing on here that's full of collagen, I was hoping there would be like pig's feet which are equally gross actually, but you need something that's all grisly and nasty.

And so I have never eaten pig's ears, and they come, they're ice cold, it just steams, pig's ear is just a huge ball, there must be like a dozen or so pigs' ears, I'm like, "This is nasty, like chickens' feet would even be better." So what I do, I ordered a soup and I would dip the thing in the soup and then—

Shawn Stevenson: To try to warm it up a little bit?

Dave Asprey: Yeah and then, they are just rubbery nastiness, but I was just like, "I need building blocks, just my body isn't healing because I've got nothing to make it out of." And I was traveling with handfuls of supplements, just these weren't the collagen sort of things.

The next day I could walk again, I mean it was transformative and I started healing and I ended up getting to the point where I was fully healed and I could walk 26 miles, up to 18,000 feet elevation around the mountain 10 days later. But it was that thing, I came back.

On that mountain was when I had yak butter tea that turned my brain back on and it was collagen that turned my knees back on. I said, "Alright, I got to do this," and it's kind of funny bulletproof, put collagen on the map, like the reason it's a supplement that's cool and for high performers instead of your mom's Jell-O, which was the only place you ever get collagen before, it's because of that trip.

Shawn Stevenson: Wow, awesome man, it's so awesome. So and just shout out, the first of all you couldn't even walk with the walking sticks, shout out to people who just walk down the street with walking sticks.

Dave Asprey: Oh yeah, I love that.

Shawn Stevenson: I'm just like, I thought it was kind of weird like it's LA, 90 degrees and they are just out there trekking down the sidewalk, but it's a thing.

Dave Asprey: Have you ever used them?

Shawn Stevenson: I have not, no.

Dave Asprey: Alright, there's an actual skill, I used to do a lot of backpacking before I had kids, when you have kids you stop doing like yoga and backpacking, stuff like that because they tend to take your time so you might do a little bit but not like you did.

So if you're going to do a long-distance like join me on a trail or something, almost everyone uses them now.

And when you learn to walk like a 4 legged creature it changes your brain, you cross pattern but you can carry so much more and you get an upper-body workout.

So you see all these hikers, if they have hiked 500 miles, what they have is these supermassive legs and super skinny arms, but if you use trekking poles you actually maintain the muscle mass and you get all that lymphatic movement.

So I would say if you're going to walk 10 miles and you learn how to use the poles you'll feel better when you're done. And also, let's look at knee replacement/ hip replacement surgery, it's happening all over the place, maybe not wearing them out is a good idea.

So I think spreading the load especially if you've got a backpack on, there is a really good argument for trekking poles.

Shawn Stevenson: Awesome. So one of the things that jumped into my mind when you were kind of laying out this really strong argument of how long we can live and how long a lot more people are going to live, I immediately thought about, "Well, what about overpopulation?"

Dave Asprey: It's funny. A lot of people don't know my first book was about fertility. It's been 5 years writing it, my wife was infertile, and we restored her fertility using food and vitamins and testing and things without IVF or anything like that, we had one kid at 39, one and 42. She's a Karolinska trained physician.

So I know a thing or two about fertility and I'll just tell you straight out we don't have a population problem, we haven't right now, we won't have one in 50 years from now.

Because the fertility rate is declining because our health is going down so fast as a species, and that sounds really scary but the solution to that problem is live a long time and wait because people literally, who want to reproduce can't reproduce.

And on top of that, if you look at the number of people who are choosing to have kids in every developed nation right now even when they can't have kids, it's going down dramatically and it's happening in Japan, it's happening in China, it's certainly happening in the US.

So we have all these aging populations and one dark picture of the future is you have a bunch of aging, infirm populations with no young people to take care of them. That kind of sounds crappy.

Another possible future is that you have these aging populations of people who are now the village elders and have lots of time, energy and desire to give back to their communities and

to help the people who don't know all the stuff that you learn by taking arrows in your back for 8 decades.

The things you might have learned about how to have a good marriage because you only failed at them 3 or 4 times over the course of your life and now you're probably kind of a pro and you can tell the 25-year-old getting married for the first time what not to do. This is called wisdom.

And when we have an older population whose brains work and bodies work the way they're supposed to we will have an epidemic of wisdom. And I'm really looking forward to that.

The other thing is, if you really realize, at your core, "You know what, I might be around 100 years from now, I might be around 200 years from now, maybe I shouldn't poop in my own sandbox." Right?

You're going to have to take care of the world you live in better, you're going to have to take a long term view because guess what— you're a long term animal now. So you stop using single-use when you can or you recycle when you do, and you make better decisions, right?

And I believe that if we think, "Look, life is short, mean, brutal," then you spend 20 years hooked up to tubes and monitors while the medical industrial system drains your bank account if that's your picture of the world you're going to act like an asshole.

And if you picture the world as "I am going to be old and wise and fully able to move under my own power and I'm going to know so much cool stuff and I am going to be able to help so many people and it is going to be awesome, I am going to meet my great-grandkids and actually be friends with them," you're going to behave differently, and it's the change in behavior that matters, and to change your behavior you have to change how you see the future.

Shawn Stevenson: Wow, facts. Absolutely. I want to get into science now, and really you again, laid out a really great case that the foundation for longevity begins with our mitochondria.

Dave Asprey: Yeah. It turns out in "Super Human" I go really deep but I wrote a whole book about mitochondria that hit the New York Times Science bestseller list which is for me as an author, I don't think I'd ever do that, it was sandwiched between Homo Deus and Sapience. It was like, "Okay, that's the coolest thing ever." And that was my big focus on mitochondria and the brain.

So in "Super Human" it's not just mitochondria, they are certainly a part of it, mitochondria for people that haven't heard that they are these power plants in the cells, but really that's a simplification.

What they're actually doing is they're sensing the environment around you and deciding what to do on a second by second basis, and sometimes they make power, but other times they

make hormones, other times they make chemicals that you need and they're kind of the puppet masters inside your body.

But they are inside your cells, the ancient bacteria that became a part of us. And the other things inside the cells are equally important so aging starts at the cell and you have this called Lysosomes inside cells and all these different things that you might remember the names of because you colored them in seventh grade biology and no one ever told you why they mattered, in fact, they generally didn't matter back then because we didn't understand.

Well, now we know the 4 things that are going to kill you and we know pretty much 7 of the things that are likely to make you age, and the trick here that's revolutionary in the idea behind "Super Human" is that you can't say, "Oh, you know what, my car is going to last forever, I'm just going to make sure I change the tires all the time."

Because you might have to do some other stuff, you have to change all of the maintenance things that, so you change the oil, you do your timing belts when it's time, you change the tires and you do the things you do to continuously maintain and repair the system.

Our bodies are the same way and we just know more than we ever did, that makes it easier to do. It also means that if you know that your tires are going to wear out maybe you ought to not drive over all the potholes when you have a chance.

So we can do both and a lot of the arguments in "Super Human" are here are the things you're doing that increase the speed of your aging that don't give you any benefit. So maybe we could just stop doing those?

Because if you're going to go eat something that tasted good and one thing that tastes good messes up your cells and the other one doesn't better choice.

I describe aging is death by a 1000 cuts, it's not just one thing, so just take fewer cuts, make them less deep, you're still going to take hits that's the nature of life because sometimes it's fun and there is nothing wrong with having fun, I am not talking about living in a cave or a bubble, I'm just saying when you can make a choice that both choices are good, both of them are pleasurable, do the one that gives you less damage and then consciously repair the damage.

Shawn Stevenson: Right, so one of the big tenets, which is so obvious, is for longevity don't die, right? So you talk about don't die.

Dave Asprey: Yeah, that one works pretty well.

Shawn Stevenson: And specifically you outline four killers. There are the four main killers, the top things right now that are taking us out. And you also relate with each of these 4 things which were really beautiful to see, how inflammation is tied into each of these 4 killers.

So let's talk about the 4 killers and how the inflammation relates to each one. It seems kind of ironic, like, "Okay, if you want to live forever don't die." Done, that was the whole book.

But you said, all right, let's assume that you and me are average. And I got to tell you— we're not average, we're here in LA, we're doing a podcast, we can choose our food more so than the average human being, and all of the numbers we look at they're usually just all over the place.

So the numbers that I'm going to talk about are for developed nations, but this includes people who live on Pop-Tarts and ramen and margarine. So we're not average.

Shawn Stevenson: [Indiscernible 32:23]

Dave Asprey: There you go. Now, 4 things that are going to kill almost everyone listening to this, at least 80 percent of them, one or the other.

One of them is cancer and the rate of cancer is up dramatically, something like 40 percent of people gets it in their lifetime.

The good news is that you die half as often from cancer as we used to, we actually can cure cancer better than we could, although we're still far from curing it and a lot of times the cure is pretty brutal, to be honest, but our survival rates are up because our early detection rates are better.

But maybe not getting cancer is the right strategy here, that's the one that I'm pursuing and also detecting early if you get it because it's relatively easy to get rid of cancer in fact, you and me, we have cancer right now, unquestionably.

There are pre-cancerous cells circulate in our bodies and our natural killer cells are going through and knocking those things out, it's just how the body works.

So there's nothing to worry about there but if you were to do a few things in your lifestyle or maybe some of the more extreme things in here around cancer, you say, "Alright, I just reduced my chances."

The next one that's likely to take you out is cardiovascular disease. In fact, maybe more likely than cancer in terms of death.

And cardiovascular diseases are stroke and heart attack and it's rampant, it turns out we know more about that than ever before and one of the things I call out here is that we like to say, "Oh, you ate some cholesterol, you're bad, there was egg yolk."

Look, 2 studies now have looked at the very specific type of fat that's building up in your arteries. Newsflash— they don't come from your food, they came from bacteria your gut. They are fats made by bacteria.

All of this vegan nonsense about, "Oh you can't eat fat, animal products cause cardiovascular disease." B.S.

Now, eating an animal that ate antibiotics and corn and soy that then modified your gut bacteria to make them turn against you so that they made the things that— okay, now we're talking.

So in terms of vegan nonsense, don't eat industrial animals fed antibiotics, ever, they will shorten your life and it's stupid, and it's bad, it's bad for the animals, it's bad for the planet and it's evil. I don't do that, I actually live on a farm and I raise my own animals, but you can't do that, go to the farmers market or at least get grass-fed or wild-caught beef.

And if you go to a restaurant and they only have industrial meat, it's really easy, order the vegetarian meal, but skip the tofu, that stuff is gross. All right, that was my rant about cardiovascular disease. Butter is not bad for you.

Next up, we have type 2 diabetes, rampant. And type 2 diabetes is really evil because it increases your risk of dying from cancer and heart disease dramatically, and most people start out with that, and then they get one of the other ones.

And by the way, the other killer is Alzheimerz disease, 10 percent of people. And diabetes increases your risk dramatically of all of those. So let's focus on diabetes.

What is diabetes really? It's your body's inability to turn food and air into energy, into electrons, the same electrons that power your iPhone power you. What part of the cell does that? Might it be the mitochondria? Yes.

So how do we hack the mitochondria? Well, fortunately, that's an area of pretty strong expertise for me; it turns out every cell in your body and subcellular components like mitochondria, they have membranes.

Now, you and me would think of a membrane as being like a baggy, like a plastic layer. That's not really what they are. Okay, it's maybe it's more like a condom. A little more stretchy, maybe some things can get through there. They're not like that either.

What they are is more like when you have a sheen of oil on the top of the water, it's a thin layer of tiny droplets of fat that repel water on both sides, so they kind of string together. Well, what fat might be important?

And a big part of at least the diabetes angle in "Super Human", and "Super Human", by the way, is not a diet book, you've read it, there are some stuff about food, but this is about living a 180 and all the stuff you do.

But, from a nutritional perspective, if you already eat the types of fat that your body needs to make healthy membranes, one of the biggest things that help with highly functional mitochondria which then prevents diabetes is have membranes that allow sugar and fat in and have all the components needed to make energy inside the cell.

And that means 45 percent of the fat in your cell membranes is saturated fat. And this is why you can laugh when people say, "Don't eat saturated fat."

However, it's very interesting to note that you could say, "Oh, this is permission to eat a high-fat diet," except it's not. Because different fats do different things, who would have thought?

You can say, "Well, margarine and corn oil these are probably different than coconut oil, there must be some differences." It turns out the type of fat really matters, so you're not going to never eat any "bad fats" but I'm going to tell you right now if you have a choice between smoking a cigarette and eating a plate of French fries, smoke the cigarette.

And the data is very clear on that, nicotine actually has some anti-aging facts. Smoking is terrible for you, you know that you shouldn't do it, but your inflammation is going to last for about 8 hours.

The inflammation from the French fries is good for 24 hours and that nasty fat is going to get taken up in your cell membranes. And when it gets taken up, it's going to make free radicals.

So seriously, I don't care if it's calamari or Brussel sprouts, if it's deep-fried, especially in the restaurant where they are using that oil for God knows how long, just don't do it, you don't eat that anymore, it's not food.

And just like you shouldn't smoke if you want to live a long time. So you've got to pay attention to that. And the other thing is people say, "Then you should eat a high protein diet." Look, what kind of protein? You know my favorite plant-based protein? It's ricin, the nerve gas that they use in the subway, it comes from beans.

So there you go plant-based people, the plant-based protein will kill you. Oh, okay, then what about animal-based protein? Oh, spider venom, that stuff is kind of probably bad to eat too.

So animal-based protein will kill you, or dare I say different proteins from different sources do different things and you cannot be simplistic like a child and say, "I'm going to eat protein from animals or plants," because it doesn't matter unless you know what protein it is and what it does.

The same is true for fat and the same is true for carbs. I just made a new prebiotic that is 100 percent carbs that doesn't raise your blood sugar at all, feed your gut bacteria but it's carb, it's a little different from corn syrup, right?

How do we sort this out? We have to stop thinking about those simplistic categories because they're stupid and that's in "Super Human", I'm like, "Look, these are the fats to prioritize, these are the ones to deprioritize, and here's why".

Shawn Stevenson: Yeah, and I know you've probably dealt with this too, but you know in dealing with the publisher, a lot of the powers that be really don't think people can get this stuff, we really want to simplify things and they've said the words, "Dumb it down."

I don't agree at all, I think that people are smart enough and I think that we are well equipped to understand the complexity. This is bigger than that.

Dave Asprey: There's a book by my friend Ryan Holiday who is a great author and if you've ever had him on, and it's called "Perennial Seller" and it's a book about the mindset that goes into writing a great book, and you understand it, because you don't want to dumb it down.

And you have a moral obligation to explain it in a way that's consumable but you can disrespect people by just, "I'm going to make it so dumb, just do this."

But look, the people who listen to your show, the people who read "Super Human", people who read your writing, they want to know that there's a reason to do what they do and they want to know what the reason is.

So I look at it I believe the same way you do and say, "Look, here's what to do, and if that's all you want, go to the next chapter. But if you want to know why and how and you want how to think so you can take care of yourself forever, it's in there," and that's really hard to do.

Shawn Stevenson: Yeah. In the discussion on diabetes, you mentioned glucosamine in there as well. So can you talk a little bit about that?

Dave Asprey: Sure. Glucosamine or glucosamine, to be honest, I do not know how to say that and I just read my whole audiobook in the same studio we're recording right now.

Shawn Stevenson: Right, that's so cool.

Dave Asprey: I said it both ways in the audiobook and they didn't catch me, so if you have a person listening—

Shawn Stevenson: -samine, as long as you're not saying -salmon, it's all good.

Dave Asprey: Yeah, okay, there you go. So glucosamine, glucosamine someone is going to tune in your show and tell me exactly what it is.

But when I was maybe 14 I read in some Men's Health magazine or something, "You should try this," so I bought it and now my knees feel way better and I didn't know why, other than it said it was supposed to work and I tried different brands and it didn't work as well and I figured out the form that worked, and it was just a titration exercise, if I take it can I play soccer or not?

And it turns out glucosamine now we know has a bunch of anti-aging powers because it changes the way your mitochondria use sugar, so it's probably helping with blood sugar.

And it's an anti-aging substance that is widely talked about that almost no one knows that goes just for joints, no, it's for inflammation.

So I talk about the pathways in there, it's dirt cheap so it's a really good idea to be taking glucosamine on a regular basis if you want to live a long time and not have joint placement surgery 25 years from now.

Shawn Stevenson: And there you have it. So we talked about the 4 killers then you shift gears and you talk about 7 pillars of aging. So these are the 7 things that are really little known in my opinion, that are the biggest catalysts that are moving us towards aging.

So we talked about don't die, now we're looking at the things that accelerate our aging. And I want to go through just a couple of these. The first one was mitochondrial mutations. let's talk about that.

Dave Asprey: Yeah, so mitochondria, you have between 200 to 15,000 mitochondria inside each cell in your body except your red blood cells, they are free of mitochondria.

And the cells that have the most energy requirement have the most of these things, the ones that are most important, so your brain cells and heart cells are the most studded with mitochondria.

And they're smart, little things and you get all their DNA from your mom, at least if you're like most people, there are a few weird corner cases where other stuff happens, but essentially these are passed down from 9 women in somewhere 11, 12000 years ago all of us are related to one of 9 great, great, great, great, great, great grandmothers.

And problem is that these mitochondria mutate relatively easily over the course of your life and it doesn't mean you want to hand on the right genes to your offspring, but as they mutate you don't make energy as well.

And what happens every time when your mitochondria can't turn a molecule of food and a molecule of oxygen into an electron, it makes the inflammation, the inflammation leads to diabetes and all the 4 killers. So these mutations build up and we don't have repair systems. So what you do?

There are practices that don't cost anything that are in "Super Human" that cause mitochondrial biogenesis, there's relatively affordable like 50, 60 dollar fordable compounds that grow new mitochondria, there are certain types of exercise, there are types of sleep.

So what you want to do is put your body through these brief periods of intense stress so the body looks around and goes, "Oh, that mitochondria can't really make heat right now or it can make energy right now, I guess I should kill it."

Because your body will prune the weak, mutated mitochondria and kick their asses out of there and grow fresh young ones if you give it the right instructions. Guess what? We have not been taught to give the right instructions.

Mother Nature was very elegant in our design because 150 years ago there was probably some angry buffalo chasing you every now and then or a tiger trying to eat you, and there were times you didn't have any food, and there were times you were a little cold and the body would go, "Oh, I guess I should take care of this."

Well, we don't get any of that anymore and it turns out those are important signals they're just unpleasant. So how do we get those signals to happen in the minimum possible amount of time with the least inconvenience and the least cost? I'm down for that and that's what's in "Super Human".

Shawn Stevenson: One of the things that are so fascinating about that is that today we know that it's not just our DNA that we need to be concerned about, we've got trillions of bacteria that live with us, that live within us on, our skin and in our bodies, and they have their own genes.

Our mitochondria have its own DNA that can get damaged. And so we need to look out for the wellbeing of not just our DNA but our mitochondrial DNA can get damaged even easier which is just super fascinating to me. And this is one of the things that you really highlight and talk about in the book.

Dave Asprey: When you really think about it, we have this collection of bacteria and it talks to our bacteria and it's all kinds of cross-reactions. Wired magazine had an article a few years ago that had the best headline I think of any article I've ever seen.

And it said something like "You are surrounded by a cloud of fart bacteria," I'm like, "Great, guys, I'm horrified," or skin and fart bacteria.

But what the point of the article was is that with genetic sequencing, when we leave this room, 2 hours from now they could come in with a forensics team, measure the microbiome in the air and determine that we were in this room if they knew our microbiome.

So it's not just our bodies, there's no sovereignty, there's no boundary to where you are. What that means is you're a hollow tube.

Because food comes in, it replaces cells in your body and then you shed your skin and you poop out the other stuff, so you and me, our bodies own even exist, we're just like a whirlpool in a stream.

There's matter coming in, there's matter coming out. That's super powerful because that means you can modify the matter coming in and what can you do to make the whirlpool that is you more coherent to stick around for longer? That's anti-aging

Shawn Stevenson: So the next one of these pillars, and I'm so grateful that you talked about this one, was zombie cells, zombie cells. Can you talk about what that is?

Dave Asprey: As you age, your body has cells that stop doing their job but they don't get out of the way. They call them senescent cells as the scientific term. So now we've got these cells that are sitting there, they make free radicals, they take up space but they don't do their job.

So the question now is, all right if I want to be young when I'm old, how do I make sure I don't have very many zombie cells floating around. When you're young you don't have any as you age they go up predictably.

So it turns out that there are some of the things that are similar to creating new mitochondria, things you can do that help— fasting helps, there are enzymes that you can take that help and there are even some new drugs that are radically shown to improve cell senescence.

And what that means is that as you age you're probably going to have to just figure this out and the techniques, there is a list of bullet points and here are things you can do now.

Some of them are billionaire techniques and I mean, I've done crazy stem cell things, probably more stem cells in one sitting than any human ever as part of the research for this, but hey, I haven't lived a 180, someone had to do it. And everything in here, there's a free version that gives you the benefits, the most we can get.

And then there's that this is what crazy people are doing, I haven't done it yet but I'm signed up, this is something I did do, but just like cell phones, if we go back 20, 30 years, the only person with the cell phone was the investment banker and the whole trunk of their car was the phone, there is a giant thing up to their head and it's \$25 a minute and everyone swear them, "Look at that, who does he think he is with that cell phone," and now they are \$1 a month in Africa.

Anti-aging technologies are the same as cell phones, they are coming, some of them are expensive now, some of them are cheap now, you just don't know about them.

But the expensive ones, they'll drop in price just like computer chips and the demand is that strong and it's our job as podcasters, as health influencers just to tell people, "Hey, this stuff is real," and once the demand is there I promise you, as an entrepreneur, that we will make it for you at a price you can afford because that's what entrepreneurs do.

Shawn Stevenson: Alright, so we know that we have these zombie cells, potential zombie cells and this goes back to this conversation about apoptosis, as programmed cell death. So what I'm hearing is that we don't need to be as concerned about overpopulation out there as overpopulation in our bodies.

Dave Asprey: It's a good point. If you have an overpopulation of zombie cells you have an issue. One of the other pillars of aging is actually cell loss, and as you age you run out of stem cells and that means you get tissue exhaustion, something called sarcopenia, or a loss of muscle mass.

That's the reason when you have the stereotypical picture of an older person there's thin skin, they are frail, they don't have muscle mass. Well, that is all tissue loss. So what would happen if you could make your stem cells stay strong? What if you could replace your stem cells? Would you reduce sarcopenia? What if you just did things that didn't let your cells die as much as they did before?

And what if you caused programmed cell death for the cells that needed to die like cancer cells and we had a healthy immune system? So those are the things that I write about in "Super Human".

The deal is this is like multiple college courses in weird biology that no one is actually going to study, so it comes down to at the end of the chapter there's a set of bullet points and I'll walk you through the whys and the hows, but you do a few of these things, you don't have to do all of them, just do some of them.

And all of a sudden, the number of years that you get goes up, maybe, we think, hopefully. And certainly what is going to happen is you're not going to feel like garbage when you're old, and that's really important. So you just don't lose when you do this.

Shawn Stevenson: Yeah, so we've got cell loss, we've got mitochondrial mutations, zombie cells. So with the zombie cell thing, so what you're really saying is there is potential, we could have a zombie apocalypse, potentially? Is that what you're saying?

Dave Asprey: Part of aging is a zombie apocalypse.

Shawn Stevenson: You heard it here first, Dave said it, it's a real thing. So zombie apocalypse actually takes place. 3 foods you have to eat for a year, what are they?

Dave Asprey: 3 foods only for a year? I would say you really are not going to be very happy unless you have some avocados. Pretty stereotypical answer though, but the bottom line is it's got fat and carbs in it and it's pretty good.

I'm going to tell you straight up, the grass-fed rib eye is going to be really important, you've got to get those fats, soluble nutrients in the meat and you're going to want some of that protein.

The great thing though, and we didn't talk about this much, most people listening right now are eating too much protein. You don't need that much protein but you need very high-quality protein.

So who cares if the ethically raised grass-fed animal is twice as expensive as the industrial mistreated animal? You eat half as much of it and you replace those protein calories with fat calories from clean fats and with more vegetables.

And that works out really, really well for the planet, for the soil which requires animal poop to be fertile and things like that, that's why a grass-fed steak is on there and specifically rib eye because it's the fattiest cut.

And the third thing is a real tough one. I'm going to pick sun-dried black olives because they taste good.

Shawn Stevenson: Interesting. Okay.

Dave Asprey: It's because you actually need some monosaturated fat for your cell membranes, I'm going to get my saturated fat from the steak, I'm going to get my monosaturated fat from the avocado, I'll get a little bit of undamaged because you get avocados raw, Omega six's which turns out your cells need some of that but not very much and then I'm going to fill the rest in with the polyphenols from the olives.

And polyphenols are these colored compounds from plants that control a lot of what your gut bacteria do and what your mitochondria do, they're even necessary for making melanin the pigment in your skin.

And so I would, there you go, I'm going to I have basically guacamole, sun-dried olives on grass-fed steak and I'm going to feel great.

Shawn Stevenson: There you go. And those zombies eating you?

Dave Asprey: Absolutely.

Shawn Stevenson: I love that, and I'm glad you mentioned that, that we do need some Omega six's because they've really been dragged through the mud for good reason, but the quality, getting them from a good source, but they're still there as "essential fatty acids" so we need them for our diet.

Dave Asprey: They are essential because you can't make them. And what I found was fascinating new research, it didn't even exist when I wrote the Bulletproof Diet. And I was right, fortunately in the book just from talking with clinicians and just saying what works but we didn't actually measure it.

And researchers went through and they looked at what the fat ratios of cell membranes are for different types of cells in the body and then they measured what happens when you change the type of fat you eat.

And it turns out that your adipose tissue, the fat in your body it swings with what you eat very dramatically. So if you eat a lot of Omega 6 fats you will store way more Omega 6 fat in your fat tissue and it'll create inflammation there.

So if you do that though, your brain won't change nearly as much as your fat tissues do, so you can control inflammation by controlling the ratio of fats you eat. And since 45 percent of your brain cells are saturated fats, just like in the Bulletproof Diet, I did say 50 percent of your fat calories should be saturated, I was off by 5 percent, sorry.

But there's pretty good evidence for it, in fact, the body will manufacture palmitic acid so it's really fascinating that the cells in your brain, the cells in your heart, the cells in your muscles, they do different things when you change the type of fat you eat.

They all require Omega 6, but it's a relatively small amount and it's got to be undamaged Omega 6.

If it's been extracted from corn, sunflower, canola, soy, they use hexane and other solvents to heat, and Omega 6 oils, even from flax they are unstable in light, sunlight, light from the incandescents or LEDs in your house, heat, and oxygen break these things down, so you pretty much want to eat them when they're fresh inside a nut, that hasn't been roasted when they're in an avocado, when they're in Olive oil that has antioxidants that protect them and hasn't been deep-fried or heated in the pan. It's that important.

Shawn Stevenson: Yeah, perfect. We've got one more of these pillars of aging I want to get to, we're going to do that right after this quick break, so sit tight, we'll be right back.

Today we're in the midst of a new revolution with our understanding of food. We used to just be focused on this macronutrient paradigm proteins-fats-carbohydrates. Carbohydrates and proteins got a pretty good name, but fats were drug through the mud.

Why is that? Because it's called fat! The name implies something different than the other 2 because when we hear the word fat we think about fat on our bodies.

Fat in food and fat in our bodies are 2 totally different things and it's like thinking, "If I eat blueberries I'm going to turn blue," when you think that eating fat is going to turn you fat. It just doesn't work like that.

And any of those 3 macronutrients can actually put fat on your body if you eat too much or the wrong types. Healthy fats, which I'm proposing that we start to call lipids or even energy are incredibly important for every single function in your body.

Your cells, every single cell in your body, we have upwards of 100 trillion cells that make you up require fats to just maintain the integrity of your cell membranes, we're talking about the thing that holds your cells together and enables your cells to communicate. It's very important.

Also your brain, your brain is mostly fat and water, this is why fats are so important. When you're deficient in fats especially the right kinds of fats, you can see some big issues.

So in order to address that some of my favorite things today are MCT oils and specifically if we look at emulsified MCT oils that actually taste amazing and these are medium-chain triglyceride oils that are extracted from things like coconut, palm, and these medium-chain triglycerides have a thermogenic effect on the body which means they are able to positively alter your metabolism.

That's number one, the thermogenic effect from MCT oils, positively altering your metabolism.

Number two MCTs are more easily absorbed by your cells, so unlike conventional food of any type that has to go through a pretty arduous process of digestion turning that foodstuff into you-stuff, MCTs are able to go directly to your cells and provide almost instant energy.

And number 3, MCT oils are very protective of your microbiome, there's so much research today about the importance of having a healthy microbiome and the integrity of our gut. MCT oils are one of those things that help to support that because they are especially effective at combating viruses, parasites, bacteria, there's so much goodness that is able to be found in these MCT oils but you want to get the good stuff.

And for me, that's why I go to onnit.com/model, that's O-N-N-I-T.com/M-O-D-E-L to get the emulsified MCT oils which is like a coffee creamer. These are great to add to your coffees and teas, smoothies and things like that to get in a little bit of extra flavor plus all the benefits of MCT oils.

They're easy to stir, so you don't have to throw everything into a blender just to get a nice coffee drink, but also they taste good and they make the process of being healthy fun and enjoyable.

So head over check them out, they've got vanilla, coconut, cinnamon swirl, and strawberry, it's one of my favorites.

So go to onnit.com/model for 10 percent off your entire purchase, not just for the MCT oil but all of the health and human performance supplements that Onnit carries and all of their fitness equipment, gear and so much other cool stuff. Head over there, check them out, onnit.com/model. Now back to the show.

Shawn Stevenson: So we're here with bestselling author and the father of biohacking, Dave Asprey and we're talking about his new book "Super Human" which I got an advance copy, epic, definitely something to add to your library.

And we've been talking about the 7 pillars of aging and we're just covering a couple of them, everybody needs to read the rest of them in the book, there are so many great things in here. And I definitely want to talk about this one which is cellular straitjackets.

Dave Asprey: Oh yeah.

Shawn Stevenson: Yeah, let's talk about that.

Dave Asprey: We all know what it's like to get a callus and you say, "Oh, my skin isn't flexible right there, it's on my foot," whatever. Well, the same thing happens in your cells and we build something called amyloid plaques throughout the body.

Most people have heard of amyloid plaques because of Alzheimer's disease, where there is something called beta-amyloid.

Well, you get, whenever there's inflammation throughout your body, you build up these plaques and these are like straitjackets, they keep your cells from doing what they're supposed to do.

So we've got to ask ourselves, "What do we know about what causes plaque to form?" And once you realize that, "Oh, amyloid can be affected by all kinds of dietary things, by all kinds of exercise things, and there are even some new drugs that can reverse this kind of formation of amyloid", you realize it's the same thing as a professional ballplayer.

Maybe if someone hits you in the knee 15 times you're going to need a knee replacement, but if you can get hit in the knee less you'll need less replacement.

So this is the scar tissue that builds up over time in or around the cells, and you have to do something if you have a lot of it and this is a real simple thing— if you're 20 years old, like, "Man, I'm just going to make a few changes," these aren't painful changes, these aren't changes that take any more energy than what you already do, you're just going to change a habit from A to B. Right?

An equal amount of pleasure, equal amount of time, equal amount of money, but the new one I got less amyloid for me. And if you're older you're saying, "Alright, I'm definitely going to stop pouring gas on the fire and maybe I'll actually reverse it".

Shawn Stevenson: I love that visual of thinking about a straightjacket with our cells.

Dave Asprey: Yeah, it's like that and they got to move around. And it's fascinating when you dig into the cellular biology, people don't know this, but these little mitochondria inside a cell they have a way to move around, to make a little transport thing like a bus, they call it a shuttle.

Mitochondria is like, "I need more energy over here," it'll move a power plant like they do for a concert like it'll go through the neuron and go over here where it can make some energy then it'll move back over here.

There are crazy levels of stuff that are totally invisible to us. No one knew about this 30 years ago because you just couldn't see it and now we're looking at stuff happening inside of our cells.

In fact, just last year, they found another organ system that no one knew about in the skin because we all looked at the skin of dead animals under a microscope, we could look at live animals and holy crap there's a whole part of the lymph system that no one knew about.

So we don't know very much but we know way more than we did and that can guide us in what to do so you'll feel good when you're old and you'll live longer.

Shawn Stevenson: Yeah and one of those things that tighten the straitjacket more than anything, well one of the strongest things for us to be aware of is these advanced glycation end products.

Dave Asprey: Yeah. Now, I wrote about advanced glycation end products in the Bulletproof Diet and there are 2 forms of these that we get. This is what happens when you get sugar

and it interacts with a protein and they stick together to form a hard to break down compound that creates free radicals.

The easiest way to envision this, throw onions in a pan, turn on the pan, you get browned onions. The brown stuff is advanced glycation end product.

Now, I made the argument in the Bulletproof Diet that eating advanced glycation end products is probably a bad idea, but even worse is eating a large amount of sugar or any other food that raises blood sugar.

Because if you've got sugar coursing around in your body and your body is made out of protein fat and water, you're going to get advanced glycation end products inside your arteries, inside your cells.

Shawn Stevenson: So you're caramelizing yourself?

Dave Asprey: Yeah. So number one don't eat sugar and if you have 3 grams of sugar, no one cares, seriously. But if you do it most people do also, "I'll just have a few of these little candies, and I'll have a whole bunch of ice cream and I'll do a bunch of this a bunch of that," that does cause events advanced glycation which contributes to aging be a pathway as we understand, it creates these amyloids. So what about eating them?

Well since 2014 when the Bulletproof Diet came out there's been a little bit more research and there are now several studies that I cite in "Super Human" about the effects of eating advanced glycation end products.

And here's the deal— food that is highly caramelized is bad for you it increases your aging because it's full of AGEs, it says right there in the name.

And when you look at things like overcooking meat and charring meat, it is a well-known risk and when someone says eating meat is bad for you, massive question, "How did you cook it?"

Because a deep-fried, microwaved, chargrilled, smoked and dipped in honey sauce piece of meat is still meat, it just might have a different effect on you than a piece of sashimi which is also meat.

You have to think about it, it's just, it's not a simple saying meat is good or bad, that's dumb, and I can tell you plants aren't good or bad either because if you walk outside right now and you take a bite of the first plant you see you, if don't end up in the hospital you're going to end up in the bathroom because most plants will kill you if you eat them.

So it's just simplistic and stupid to be plant-based or animal basis, those are meaningless and this is a prime example of why. And so burned meat particularly bad for you.

Shawn Stevenson: Yeah you know what's so funny, we've been having these little synchronicities. I read that in the book yesterday about caramelizing your insides and then

for the first time in my relationship with my wife, we've been together for 16 years and she made something with caramelized onions, I was like, "This is so interesting, first time ever."

And then we got here and we had the, I brought you some Ease magnesium from our friend Ian Clark which is a topical magnesium, it's great for pain relief and relaxation, all that good stuff. And you had a little bit of a tweak to your back because of wrestling a pig or something?

Dave Asprey: Yeah, I do live on a on a farm and one of the things I talk about here for natural killer cells is funny, if you breathe the things that trees make, these things are called terpenes, and some of the essential oils it actually increases natural killer cell activity in the body, it changes your microbiome, especially if you live on a farm.

So I'm on a small farm, we have 8 pigs and 10 sheep, actually, we have 9 sheep now, one of them just died and the turkey vultures ate its eyes, it was horrifying. I'm telling you, Mother Nature does not want you to live, just in case you were wondering, you've got to take ownership of that.

Anyhow, we're moving the pig from the pigs from one place to another and the pigs' job in nature, they're awesome.

They clean up the land, so you move them around and they pile up the rocks, they get rid of all the brush, they break up stumps, and that's why we have wild pigs in our ecosystem.

And then what comes out of that is amazing pastor and sheep come in and their job is just everywhere and they're walking fertilizer machines that cause the soil to build up mass which pulls carbon dioxide out there and it's a beautiful system and I'm living in it, I can see it.

But that means you've got to move the damn pigs from one thing to another and I'm pushing on this pig and he won't move into his new thing.

And I'm pushing and pushing and finally, the pig decides to move forward and do I want to face plant in the mud? No, and I think, "God, this is on social media," so I'm leaning forward and I stuck my left leg out behind me to counterbalance me like basically a one-legged forward yoga pose thing and I sprained my back.

And I didn't know at the time, I'm like, "Oh, that didn't feel very good," and we got all the pigs moved but it's been a little tweaked ever since. So I am walking around with a pig induced injury.

Shawn Stevenson: And again, it was good synchronicity I just happened to bring that to you for a gift, I was looking around like what can I bring Dave today and it just jumped out at me.

Dave Asprey: Thank you.

Shawn Stevenson: Yeah, it's so cool. And then, of course, you were looking for a phone charger I put one in my back today for the first time, but we found the alternative.

Dave Asprey: That was awesome.

Shawn Stevenson: So caramelized onions, man. But listen—

Dave Asprey: I want to say something too about caramelized onions. Look they taste good, fajitas are awesome, although the bell peppers are probably not that good for you.

But here's the deal, if you eat caramelized onions occasionally, it's all right, it's a delicacy. If you eat caramelized onion smoothies because you think they're healthy, you're doing it wrong.

There are limits and there are normal amounts of things, but if you eat caramelized onions in every meal and you say, "You know what, I'm going to have dessert afterward and I am going to have sugar for breakfast and sugar for lunch, or sugar for dinner," and all these peaks your blood sugar, you're going to get old and you're not going to like what it feels like when you're old.

And that's the mindset here, perfection is one of those things that will make you old because you worry all the time and worry makes you old. There's a huge amount of stuff in "Super Human" about stress and what it does for you.

So this isn't about orthorexia, this is not about being perfect. It's like, "Look, what if you cook the onions a little bit less? And it still tasted good? Could you make a soup that way? Could you make the meal you wanted to make?"

And if you could less caramelizing is preferable, it's not going to kill you if you caramelize your onions because that's what your mom did.

Shawn Stevenson: Yeah, I'm so glad you brought this up because that's one of the things we tend to turn to, it's just like, "So you're saying I can't? So you're saying I can't have?"

And really what it is going to ultimately boil down to is that stress of trying to do everything perfectly is aging you, like you just said, and just understanding like there are so many great things for us to take advantage of, we just want to err on the side of those things that are extending our lifespan and avoiding the things which you were pretty hardcore on repeating, avoiding the fried foods.

Dave Asprey: That really matters and in fact, everything in "Super Human" is written through this lens of ROI, return on investment.

And everything we do is an investment but it's not an investment of dollars, that's really like a capitalist American mindset, it's an investment of energy, and energy more so than time.

Because really if you have a whole day and you feel like crap, it's not really very useful time. So it's all about your energy first, time second, dollars third.

And when you look at things like that, alright, what takes the least amount of energy, the least amount of time, the least amount of dollars to give me the most return that I'm seeking?

And the return that we're seeking in "Super Human" is you want to feel good when you're old and you want to have more years of your life. So that's the mindset here.

And I'll tell you if you want to get old real fast you use weasel words and that's a thing from my last book "Game Changers" but Can't, Need to, and things like Have to and Impossible and Try.

So, "I'm going to try to do things in the book"—no you're not, you only presuppose failure. When you say, "I can't do it" bullshit, you probably aren't going to do it but maybe you can do it but you just don't know-how.

But if you tell yourself you can't you won't ever look for how. So stuff like that, mindset is a part of aging.

And I tell you the most important thing that you could do to live a long time Shawn, isn't anything in the book other than maybe the first chapter where you look at your picture of aging and if your picture of aging is wheelchairs, diapers, putting your car keys in the fridge, and tubes and monitors and an empty bank account, that's probably where you're going to end up.

So you change your picture aging right now to say, "I am vibrant, I am walking around, I have healthy relationships, I have friends, I have family, I'm taking care of my community and my brain works, and that's what the future holds."

That will make you age less and that is provable, there are many studies like that so just erase the garbage in your mind about old age being infirm and weak and feeble and unable to care for yourself or others, that's not how it was ever meant to be throughout history and it's not how it is today, unless you let it happen.

Shawn Stevenson: Yeah. Love it, man. Wow. There are so many things I want to ask you about but I don't want to glance over something you said earlier; you said melanin. And you actually made it a point to talk specifically about melanin in relationship to longevity. What's up with that?

Dave Asprey: This is something, some of the most fascinating science out there. Melanin makes your skin dark, but there's melanin deep inside your eyes and inside your brain.

In fact, scientists used to call this junk melanin. And I learned about this when I was doing the research for "Headstrong" my mitochondria science how to hack your brain book.

And it turns out melanin has a superpower, it's unbelievable. It can actually make extra electrons outside of the way normal electrons are made in the body. And it makes electrons when it's heated or vibrated.

And that means that the reason your brain has extra melanin that no one could explain, whenever scientists call something junk it means it's probably useful, we just don't know why.

Well, the reason that junk melanin is likely in the brain is that it is providing extra power when necessary. And the way our body makes melanin is by cross-linking polyphenols these colored compounds in food. Coffee is full of something called melanoids, which are melanin precursors.

So one of the things that's part of the "Head Strong" set of things to make your brain work better is how can you increase melanin inside your brain, in your eyes, and on your skin to the extent your skin can do it?

And the way you do that is you eat lots of polyphenols and this is going to sound totally crazy you actually go outside without a shirt on.

Shawn Stevenson: Wow, are you sure?

Dave Asprey: Shocking, right? Yeah, it sounds dangerous but people might have done it in our long history.

And you don't go outside for 10 hours, there's actually good evidence that you don't want to overdo it, but if you have a naturally darker complexion, you've got a darker complex than I do, you need a little bit more sun than I do, except I'm lying because even though I am pretty much they would call this but white, it turns out genetically my vitamin D receptors are set up so I really, according to the functional genomics guys, this company called the DNA company, they went through my stuff and said, "Dave, you don't look at, but you should be living on a Pacific island.

You have the vitamin D receptors like those with much darker skin, so you've got to really watch your consumption of vitamin D, you need to take more of it because you break it down fast and you don't convert that well in sunlight."

So I'm like, damned if I do, damned if I don't. You can go down the DNA path and I talk about DNA analysis and what you might want to do or not do in "Super Human" but bottom line here is, if you can do something to increase melanin in your brain and in your eyes, you're probably going to have better eyes and let's talk about eyesight for a minute.

I did some really advanced testing of my eyes to see what's going on because macular degeneration is one of those things you don't want to get when you're old. "Oh, I'm old and I'm happy and have lots of energy and I can't read anymore because my eyes don't work." My dad has it by the way.

So there are stuff you can do with micro currents and acupuncture points and vitamins and all, and I formulated an eye supplement that I've been taking for years and I started true dark, I'm wearing these glasses here from this company that specifically blocks certain damaging blue light.

And when I went to the eye doctor she said, "This is crazy, you're 46 years old, you're 20/15 in both eyes and you can read the very finest print that like a 16-year-old can't read without glasses." And, "You are exhibiting none of the stiffening of your eyes that we expect to see in someone your age." Something's working.

Shawn Stevenson: Yeah, that's so cool. So one of the last things I want to ask you about, again, there are so many things I want to ask you, is just really in this same vein because we want to avoid what you call junk light, but then there is some light that we are not getting enough of that are tied to longevity. So let's talk a little about that.

Dave Asprey: It's really interesting when you say lights good or lights bad, well which light? It's the same as fat or protein, which protein? Is this the bad stuff or the good stuff? And then what's the dose and even what's the timing.

We were wired to wake up when the sun comes up. When the sun comes up it's not very hot, there isn't a lot of infrared light but there's lots of red light. Because of that sunrise, the pink and orange, that kind of color.

And then as the day progresses, it sends a signal, 5 percent of the cells in our eyes are called melanopsin sensing cells, they receive light but you don't ever see that light, it doesn't go in your visual cortex.

It goes around your visual cortex into the timing system that tells your brain what time of day it is so it knows whether you should be hunting for something or going to sleep, whether you should be making melatonin or you should be making testosterone or whatever else, it really messes with your entire system to get that wrong.

And as the day progresses, the angle of light coming down and the entire spectrum from ultraviolet at the very high end all the way down to the infrared, middle of the day.

It turns out getting infrared and red light before ultraviolet primes the skin to protect itself and if we do what we do today which is you go into an office which has blue lights, these LED lights are very rich in blue spectrum, they have no infrared because that's energy-efficient.

The body is like, "I'm getting hit with the most stressful light source and none of the healing and supportive in priming light sources," so the answer for that is you wake up and go outside with your glasses off, your contacts out and take your shirt off or at least have your sleeves rolled up for 20 minutes.

And this is how you tell your body that it's morning and if you do that you will sleep like a baby at night and if you at nighttime do what I do at home, I've installed red outdoor lights instead of white ones so I don't attract bugs to the house, I don't interfere with owls and eagles and other birds that live there but I can go outside and see the stars because I don't blind myself and indoors I have dimmer switches and when I travel, I wear the TrueDark sleep glasses, this is a patented set of frequencies so that I can get usually a couple of hours of deep sleep even if I'm in a hotel and I landed at midnight and I was at over illuminated airports and places like that.

It's all about light and if you want thick, healthy skin, red light and infrared light are shown in lots of studies and even amber light which is a new thing that the TrueDark is doing, they have something called TrueLight with Amber in it.

And yes, I'm promoting my own company in case anyone was just wondering. What happens with that stuff though is the studies are out there and they show, this is what this color of yellow does to the skins, this is what this color of red does to the skin, this is what infrared does.

So I regularly expose myself to that, I travel with those things sometimes and have them at home and we use them at Upgrade labs at the Beverly Hilton here and in Santa Monica where you can lay on giant beds and a study showed from one of the vendors that we work with, when you use their very high-intensity red light they had a large number of people go through with dermatologists looking at their skin and they went for a 40 minute sessions, 10 sessions, so they laid on, it looks like a tanning bed but it's with red lights and 100 percent of people had a reduction of fine lines in their skin.

So their skin all got healthier, but here's the kicker— so you may think maybe this is fake or whatever, so they waited 3 months with no additional treatments and they had the dermatologist look at the people again.

And they found that somewhere around 8 percent of them didn't, they just maintained the wrinkle reduction but the other and it's around 8 percent I'm a little off, but it's in that range, the other 90 or 92 percent of people, they had a further reduction in wrinkles.

In other words, the light exposure turned on healing and collagen thickening that stayed on for 3 months after they were exposed to the light.

That's how important light is for the thickness and quality of your skin. And I just got to say, if you're listening to this and you have brown skin it's even more important.

And most people I know who have darker color skin, it's a huge advantage, you don't age as much, like literally, like it's very hard to tell your age so you already have an advantage from all the melanin in the skin, but it means that the light exposure for your skin is even more important for hormonal regulation.

So it's a double-edged sword there and my skin is wired to look old sooner because it's paler, and then I've got to make sure I get the right amount of sun but not too much sun, so it's very individualized and I'll just tell you, red infrared and amber, they do magic tings for your skin.

Shawn Stevenson: Wow, so awesome, man. So is true, black don't crack. That's amazing.

Dave Asprey: That's what all my friends tell me.

Shawn Stevenson: Dave, this has been so awesome and you know what's so powerful, as I was reading through your story, I saw so many different things that really just spoke to

myself, like a on a deeper level because I know what it takes to experiment, I know what it takes to be a pioneer and to push the boundaries.

And you've done that like few people ever have. And it's just a really, really powerful thing to see, man, so thank you for putting in that work.

Dave Asprey: I appreciate you seeing it.

Shawn Stevenson: Awesome. So, can you let everybody know where they can pick up your book? This is coming out a week before, so are there any bonuses people can along with the “Super Human”?

Dave Asprey: Oh yeah, go to the daveasprey.com and I've got a bunch of bonuses for the book. I did a series of interviews with the leaders in anti-aging, these are private audio interviews, not Bulletproof radio or on my podcast, and you'll be able to get those when you preorder the book and send me your receipt and stuff like that.

And you can pick up the book anywhere, books are sold but I am just going to say the ROI on a book, even on a podcast, I felt like you did a good job, this podcast is full of stuff that's actionable and useful for people, so anyone who listens— was it worth my time to listen, and it was for this interview at least I would think it would be, I might be biased.

The same thing on the book, any book there's an ROI on the book, was it worth the time took to read it and I've put everything I have into making the ROI on the book as high as I can make it, so I think it's worth people's time to read.

Shawn Stevenson: Definitely. Man, thank you so much for coming and hang out with me.

Dave Asprey: It was great fun.

Shawn Stevenson: Awesome. Everybody, Dave Asprey.

Everybody, thank you so much for tuning in with me today, I hope you got a lot of value out of this episode.

We talked about a little bit of everything, we talked about melanin, we talked about zombie cells, cellular straightjackets and the overarching concept today which is longevity, real longevity. And thinking in terms of being superhuman.

And the beautiful thing is Dave mentioned earlier that we already have people who've lived beyond a 120, we know that it can be done. it's just like the 4-minute mile, once that mark was broken, more and more people start to do it.

Once it's in our consciousness that it's possible, that's when things can really start to snowball. Now with that said, we want to live healthfully because a lot of people might think because we have those images in our head, of significant degradation of our life and our lifestyle.

So we don't want to just live a long life, we want to live healthily, so it's not just our lifespan, it's our healthspan. And so that's one of the things that Dave is echoing in his work as well.

So again, I hope you got a lot of value out of this and if you did, make should share it out with the people that you care about and, of course, you could tag me and tag Dave and let us know what you thought of the episode on social media.

I am at Shawnmodel that's S-H-A-W-N-M-O-D-E-L on Instagram and Dave is at Dave.Asprey. So tag us, let us know what you thought of the episode.

I appreciate you so much we've got some incredible shows coming our way very soon, so make sure to stay tuned. Take care, have an amazing day and I'll talk with you soon.

And for more after this show, make sure to head over to themodelhealthshow.com, that's where you can find all of the show notes, you can find transcriptions, videos for each episode, and if you've got a comment you can leave me a comment there as well.

And please make sure to head over to iTunes and leave us a rating to let everybody know that this show is awesome and I appreciate that so much.

And take care, I promise to keep giving you more powerful, empowering, great content to have to transform your life. Thanks for tuning in.