

Announcer: Bulletproof Radio. A state of high performance.

Dave: You're listening to Bulletproof Radio with Dave Asprey. Today is a special live interview conducted at the American Academy of Anti-Aging Medicine with Dr. Robert Goldman who started this illustrious group 26 years ago. He's the world chairman from the International Medical Commission and he's chairman of the board of what's known as A4M, which is a group of thousands of physicians working on solving the world's aging problems. And their work has profoundly affected me as a biohacker. In fact, I met my wife, Dr. Lana, at the A4M conference 14 years ago. That's how profoundly this stuff matters. On top of that Dr. Goldman is President Emeritus of the National Academy of Sports Medicine.

Dave: And what this means is that he's spent decades figuring out how to get doctors to line up to do stuff that matters instead of doing stuff the way it's always been done. And I'm really fortunate to get to spend an hour here in Las Vegas at the annual event because he's a very busy guy and a very sought after guy. So, Bob welcome to the show.

Robert: Dave it's great to see you and you've been making great impact yourself in a number of areas as well as your charitable work, which I think is great.

Dave: Thank you. What made you decide 26 years ago that this was going to become a movement, this anti-aging thing?

Robert: Well, you know, it was actually a second phase. I come from a heavy sports medicine background as an athlete and then as we get older we go okay, what are you going to do? I started NASM, National Academy of Sports Medicine, doing the first certifications that were ever done for personal trainers. In fact when I did the first certification back in the late 1980s there was no such thing as a certified personal trainer. It did not exist. And within one year of starting NASM, over 270 other groups popped up doing personal trainer certifications. So when you come up with a good idea people jump on it.

Robert: Well, after NASM I said well, people are getting older, I'm getting older, and now we have to address the diseases of aging. How do we treat every patient like an olympian? Always want to increase their performance, their capability, what they're able to do at any age. So how do we apply the same things that we do in sports medicine to all fields in medicine? And thereby this was born with 12 doctors in Chicago and now it's 120 countries, 28,000 plus members, and we've literally created a new paradigm of medicine where we treat aging as a disease using all the technologies available to us.

Dave: What's the difference between an anti-aging doctor and a functional medicine doctor?

Robert: Well, you know, these are just terminology. Anti-aging, functional medicine, feel good medicine, age management-

Dave: Orthomolecular.

Robert: Orthomolecular. I mean these are just terms for the same thing. Really anti-aging is sort of like the blanket term we came up with. Whether it's integrative, functional, or whatever, really we're trying to intercede utilizing all technology and in many ways a more healthful approach. Not just giving meds. As a physician and surgeon we can give any drug, cut you open, but let's try and figure out what's causing the problem in the first place. How can we intervene to get these people off of the six or eight medications they're on? It's just a very unhealthy way. If you go do a little historical perspective, the Journal of the American Medical Association, the number of JAMA, of the journal, was cigarettes.

Robert: Okay. So you used to have more doctors prefer Camels. I mean it was insane. And now we have big pharma. And again, I'm not against the use of medications. I write scripts-

Dave: Yeah, me either. They're useful.

Robert: They're very useful. But if you are then downgrading nutritional approaches such as a lot of things that you've developed, there's a lot of very healthful ways to get to where you want to be without taking your uppers, downers, in betweeners, and before you're all done you're a bloody mess.

Dave: When I look back to my 20s, I'd weighed as much as 300 pounds and I had arthritis in my knee since I was 14 and they diagnosed me with high risk of stroke and heart attack, pre-diabetes, a cognitive dysfunction, and chronic fatigue syndrome and fibromyalgia. When I went to the normal doctor, because I'd had sinus infections every month for years, and I just got antibiotics every month for about 15 years. Oh, I'm getting sick again, let me just call it in. And we know today what that does to your gut bacteria. We know that that contributes to all sorts of problems throughout the system of the human body.

Dave: And when I started getting really sick, I'd moved into a new house that now I understand had toxic mold, which is now correlated with Alzheimer's and inflammation and all kinds of bad stuff. And I went to a normal doctor. Just a straight up western doctor at the Palo Alto Medical Foundation. If you're listening guys, I hope that your position's evolved. This was 20 something years ago so not throwing you under the bus. This is history. And I said "You know, something's wrong and I don't know what it is and it's scaring me because I feel like I've been poisoned, but when I take vitamin C I feel a little bit better." And the guy looks at me and he said "Stop. It could kill you." And I said "What about Linus Pauling?" And he said "Linus who?"

Dave: And if you're listening and you don't know, that's okay. You're not a doctor. But Linus Pauling, two Nobel Prizes in medicine, took 90 grams of vitamin C a day and popularized what it does for you. So I fired the doctor. But here's what I'm grateful for today. I didn't see a doctor for four years. Because I decided that all doctors were basically clueless clowns. They'd been doing this to me for all this time. I weighed 300 pounds. He looked at me and told me "Maybe you should try to lose weight." I'm like "Maybe you should kiss my you know what, because I've been working out six days a week, an hour and a half a day and you think I'm lying and I'm not." So I went through all this, but after four years thankfully I stumbled across ... This was before Google so it was Altavista. I

stumbled across early stuff about anti-aging and there was a directory of physicians that came from A4M.

Dave: And I said I'm going to try one of these people because they look interesting. And the first one I went to said "Oh, god you know a lot. You think you have one of these seven conditions and you know the labs to order for each one of those. Do you mind if I order the likelihood of those conditions based on my experience and we'll just order all those labs?" And sure enough I had half the things I thought I had and that gave us the way to do it. But if you hadn't put that group together I wouldn't even have known how to find this sort of stuff. When people sit down today in most of the country ... And I'm just talking most of the US now because it's different in different countries. But when they sit down today the average person doesn't know that anti-aging exists. They don't know functional medicine exists. They just sort of look in the phone book, they go to a normal doctor. And what I want to know is how are you getting those people who don't know the difference between a doctor who basically does color by numbers and a doctor who says well, what's going on today, what's your house look like, what do you eat, what do you exercise, how's your love life, all this stuff that matters.

Dave: What's A4M's mission to reach those people? Because you would have got to me four years earlier I would have been a lot happier.

Robert: Well, we try to but there's a lot more money in illness and sickness and all this horrific medical conditions out there than there is in health. So we do all we can to get the message out there but the bad guys, they don't want that message out there. Because if you can, as an example, find a cure for cancer. Every cancer patient is a million dollars of stuff. Every Alzheimer patient is millions of dollars of stuff. And we have a tidal wave of Alzheimer's that's going to hit so if we don't come up with some answers you're going to have a massive, massive population that's going to be chronically trashed.

Robert: So we try to get that message out and I think the social media and the fact that the internet is so active and that people of all ages can find whatever information they want through Google or whatever. Or through their phone. So I think it's really starting to speed up. When we started the anti-aging industry back in the early '90s it was zero dollars. The anti-aging industry, there was nothing. Now it's over \$240 billion industry annually. By 2021, the new studies came out, \$320 billion annually.

Robert: Why? Because we have this massive baby boomer population does not want to grow old like their parents did. They want to make the changes. They don't want to grow old gracefully. There's nothing graceful about being crippled and arthritic or overweight or having high blood pressure. All the people are kind of poking fun at us and saying you can't stop aging. Well you can't change somebody's chronologic age. Of course you can't change the number. But physiologically you sure as heck can change the way they look. You take a 50 year old male who's 50 pounds overweight. His blood pressure's high, cholesterol's high. Bad lipoprotein profile, he's tired, lethargic, his sexual energy is gone. We get this guy on an exercise program, put him on the right hormone replacement. Loses the weight, change his diet, blood pressure drops, his cholesterol drops. Have we de-aged him? Damn straight we have.

Robert: We've taken him physiologically, turned him into a different person. Have we changed his chronologic age? Of course not. But you can make the difference. So we try to get that word out. And fortunately through the media and through the interconnectivity, just like the millions of people that you reach all the time, you're going to reach some people, you're saying the term A4M, you're saying American Academy of Anti-Aging Medicine, you're using the term anti-aging medicine. This used to be a very bad word. People hated the word. I said what should we call it? Pro-aging, pro-death? What do you want us to call it?

Dave: It's really tough to know because I first got involved and I've been running an anti-aging nonprofit group in silicon valley for almost 20 years. So this would have gone back to the mid to late '90s when I started getting interested in learning this and I'm hanging out with guys more than three times my age, some of them, who are profoundly healthy and sort of learning from the stuff that works for them. But I would say hey ... We're four minutes from Google's headquarters. I'd say "Hey guys, I've got this cool group of really smart people and we're hacking human biology and we're getting younger." And the number of people from Google who would show up, only two of them ever showed up and one of them was my uncle.

Dave: I could not get people under 40 to pay attention to anti-aging medicine even though there was so much to offer there. Since that time ... And this is going back 10, 15 years. Have you seen a shift or are you getting people 20, 30, 40 who are saying I don't want to be old, I'm seeing what's happening to my grandparents and I don't want that future and I'm willing to make the investment in myself now? Or is it still that perennial when you're young you're not going to die?

Robert: Massive shift. Massive. We're getting young people now. Look who's throwing all the money into research. Google, Calico. Billions of dollars combined with big pharmas. There's billions of dollars. Look, the term anti-aging was a bad, bad word. They hated that word. We were abused for that word. You can always tell the pioneers, and you being a pioneer yourself. You tell the pioneers by first what they try to do is they try to destroy you, they try and ridicule you, then they try to disprove you. Then they copy you and then they call it their own. Well we're in the copy, call it your own phase. And now when you see the big releases, it's anti-aging therapeutics or anti-aging drugs at the big pharma. So now that the billions of dollars are coming in, now it's hitting the radar of the big boys but it's also hitting the radar of the young people, like the Google gang, and like these young entrepreneurs. People who are younger and younger now saying "You know what, I'm not going to lay out in the sun and age my skin. I'm going to use moisturizers. I'm going to be taking vitamins because I know the food sources are just lousy and I can't get enough of the nutrients I need for the proper program."

Robert: So yeah, younger and younger people now. That's why the big explosion in vegans and vegetarians and changing of diets in all these healthy food restaurants instead of your Krispy Kreme sugar donut action. It's a whole different world now.

Dave: Does that approach, the vegan or vegetarian, equal anti-aging or longevity in your experience?

Robert: Well it's pretty tough to be a vegan. I mean it's not an easy thing to do. I can't do it. It's above my pay grade. But I'm seeing a lot more young people doing this for social conscious reasons as well as for health reasons.

Dave: The perception of health.

Robert: Yeah, the perception. And they're making the changes. I'm seeing a lot more young people are not drinking the sodas and the other stuff.

Dave: That's been a sea change.

Robert: And cigarettes.

Dave: Oh yeah, cigarettes are gone. Although, vaping is coming back. And I'm not sure that's so good for you.

Robert: Now marijuana's legal everywhere so they're going to be close around the world.

Dave: And even nicotine itself is an anti-aging substance. I interviewed, let's call him Dr. Nicotine from Vanderbilt University on using oral nicotine, not smoking, as a treatment for Alzheimer's disease. And he's been studying this ... His first paper came out in 1988. Even before the A4M. Just barely before. And he's still working on getting the word out about that. So for me A4M, these meetings, it's kind of like Comic-Con for a lot of people, where you go to see your super hero. I get to meet 78 year old neurosurgeons who've measured cognitive dysfunction in 13 million people and proved that concussions matter. And to me those are rock stars and heroes and game changers at least as much as superman.

Robert: You're talking about Joe Maroon right?

Dave: In fact, yeah.

Robert: Yeah, Joe's great. Joe's a good friend. In fact, when Joe-

Dave: I can't believe you picked up who that was. That's cool.

Robert: The reason I know Joe is that Peter Safar, who is the doctor who invented CPR worked out of University of Pittsburgh where Joe's chief of neurosurgery. And we did research because in my previous life I had founded a few biotech companies that were doing a lot of work. We did the first original papers and research in brain resuscitation in that time that Peter Safar invented CPR and that whole thing. And then we did all this research with the American Red Cross where we were all overseeing 150 medical patents that I had put with different scientists and so on. So Dr. Maroon, or Joe Maroon, came to our conference for the first time. I guess it's got to be at least 15 years ago or more.

Robert: I didn't know who he was. He knew who I was because I was just on stage. And he goes "You know, I didn't want to go to this but I heard that this would be interesting. And I

really didn't think much of it but I showed up anyway." And he says "This is the finest medical conference I've ever been to in my life." And since then Joe and I have become very good friends. He's now senior vice president of the A4M for a number of years. And Joe's the perfect example. Here you got a guy who's 78, doing Iron Man competitions still, and lecturing around the world, and still today he happens to be getting ready for the Steelers to play the Patriots because he's team neurosurgeon for the Steelers.

Dave: I just met him about an hour and a half before our interview for the first time. And he said "Dave, I always have something in my pocket. I got to show you." And it was Brain Octane, the oil that I'm well known for talking about. Which to me that's a profound honor when someone who spent their life doing neurosurgery or something says "Hey, this thing you're involved with, it's useful and I use it." And it just made it really memorable. That's why I mentioned it. And I'll probably interview him about that because being a team neurosurgeon for a sports team and going to anti-aging conferences may not be something that ... If you're listening to this saying "What? Are those related?" Yeah. They are related and Bob started out in sports medicine and became this okay, if you have an injured athlete and you make him younger, well what if you look at aging or the process of aging, kind of his injuries and you can reverse some of those things, it's a repair process that you're looking to turn on.

Robert: Or you prevent it in the first place.

Dave: There you go. Much easier.

Robert: I hit world level when I was 14 and I stayed there for 14 years of world competition. You get busted up pretty good. And even though I retired at 28 what I've been able to do is re-transform myself so I'm the same weight now at 63 as I was when I was competing, doing world records, but I have less pain now than I did back then in terms of my joints because I'm not beating myself to death with these super crazy high repetitions or the kind of heavy poundage. You know you adjust what you're doing and I think people are now seeing that 60 is now the new 40 and 80 is now the new 60.

Dave: I was about to ask you how old are. So you're 63?

Robert: Yep.

Dave: And you've been practicing anti-aging stuff at the cutting edge for 26 years. And definitely, I wouldn't have guessed 63. Actually I would have given your timeline but just if I looked at you I wouldn't think that you were 63, I'd think you were probably early 50s would be a good guess just based on your skin volume and the wrinkles and all that stuff.

Dave: Now, I'm going to ask you some tough questions. You don't have to answer them if you don't want to. In the early days anti-aging medicine meant plastic surgery and cosmetic stuff.

Robert: Well, that's part of anti-aging medicine.

Dave: Did you do it?

Robert: No, no. I've never had ... No.

Dave: No Botox? No facelifts?

Robert: No. I have tried Botox because I like to experiment to see needle techniques. It's not something I do like regular basis but I have tried it. But no I've never had any plastic surgery.

Dave: So you've never had any work done. So that's not the kind of anti-aging medicine that we're talking about?

Robert: Well, that is a part of anti-aging medicine.

Dave: And a valid part. Because you don't want to look old if you're getting old. It's okay.

Robert: No. I have no problem with patients who want to have modifications done or plastic surgery. But a lot of the plastics now, there are needle techniques and the fillers, and the lasers that are available now. It's not like the old days where you have these horrible CO2 peels and you look like a snake for a week and you can't leave your house. You do various kinds of Thermage or Fraxel and these different cool touch and these things, you look fine the same day. So there's a lot of approaches now we didn't have in the past.

Dave: I'm actually going to go do an IPL laser treatment because I'm working on very consciously living to at least 180 years old. And I was in Men's Health-

Robert: 108 or 180?

Dave: 180.

Robert: Good.

Dave: I want you to barf on this if it's wrong. But my deal is we can get to 120. Because I've seen it happen. There are documented cases of people doing this and they usually didn't take that great of care of themselves. They oftentimes had good environments, they lived in a jungle and had family and stuff like that. So if we know what we know now about mitochondria, about the other potential causes of aging and we do some basic smart stuff there's a reasonable chance, especially with enough money to handle interventions and things like driving a heavy car and whatever else, I can probably make it to 120 with what I know today and where things are. And it means I might have to not eat cake sometimes and I probably won't take up smoking and things but it's achievable. It's not science fiction.

Dave: Between now and 120 for me, there's 74 years left. And I go back in time 74 years and things accelerated much more slowly than they do now. And I look at what we knew which was very little compared to what we know now and I know where things

are going because like you I get to talk to the people doing the next things. I don't think saying we're going to get 50% lift in 74 years, if you have access to the technologies, I don't think it's even that big of a number. In fact, that's why I say at least 180. It's not a ceiling, it's a floor. How crazy am I?

Robert: Well, you're not crazy, you're hopeful. And I hope you're right. 124 with Jean Clement is the oldest that we have documented. Although there are some supposed documentations of some people and they're 135 or so. But the thing we run into, we're living in a real toxic environment today. We're living in a different environment now. Contrails, you got the food is poison, you have GMOs in the food, the air is a mess, we get electromagnetic radiation, radiation is permeating through our phones, through this hotel right now. So we're living in a toxic soup, which is very different than say even 20 or 30 years ago. So with those toxins and with the high risk of cancer, which was rarer before and now it's all over the place, the impediments to getting there are tougher.

Robert: Now, you have two things going at the same time. One, you have this new technology. Some of the tech they're not going to want to get out because all of the sudden you look at the socioeconomic aspects, if all of the sudden everybody's living to be 100, 120, 140 who's paying for all this? And what are you going to do with all the people? Now, somebody says who wants to live to be 98? A guy who's 97. Okay. So who wants to live to be 180? A guy who's 179. So it's very hopeful. I hope you are right. I think that the technology leaps are possible and it's happening fast. You got over 600 drugs in different stages now for anti-aging or anti-aging therapeutics. So I think it's a possibility but there's a lot of impediments against it by the fact that certain powers that be do not want to see these things get out because there'll be too much strain on the socioeconomic structure of the world and the level of toxicity, the radiation that's out there. From the Fukushimas to the food supply to the chemicals that we're being bombarded with, to the radiation we're being bombarded with.

Robert: So I hope you are right. I'd like to be there with you. Because I got a lot more fun stuff to do. But we're going to have to be extra careful in our programming.

Dave: It is definitely an epigenetic thing. And if you're new to Bulletproof Radio, epigenetics is the science of how the environment around you turns your genes on or off. It's a core part of biohacking, the term that I'm in the dictionary for now. Miriam Webster's just added biohacking as a new word in the English language this year. Which is fascinating, this idea that you can use epigenetics to change your body. But if you are soaking in mercury and nickel and lead-

Robert: And boron, and aluminum from the air.

Dave: Yeah. This long list of things. Those will affect not just your aging, they'll affect how you feel and how you perform right now.

Robert: Your brain. Being alive, but if your brain is gone, you have Alzheimer's or a full cognitive deficit, that's not living. You're like a box.

Dave: How often do you test your heavy metals?

Robert: Not often. I would say every several years. Not often.

Dave: Okay. Not often. What is the single most effective anti-aging technology you've ever personally used?

Robert: I did have stem cells once.

Dave: Your own or someone else's?

Robert: No. I had placental.

Dave: Okay.

Robert: 200 million.

Dave: That's a big dose.

Robert: Big dose, but not in this country.

Dave: IV?

Robert: IV. And I was there really because a buddy of mine says, "Hey, let's go try this at one of the hospitals. You can't get this done in the US." I said okay. Because I don't mind experimenting and trying new technologies because I like to learn about these things and experiment them. Whether it be hyperbaric or whatever the case may be. Well, I'd had some pain in my left hip for a number of years. Maybe from the martial arts training, whatever. But I had this pain in my left hip. And a month later the pain went away. And that was like five years ago. It's never come back. And that was just from one treatment.

Robert: Now, the stem cell administration was the only thing that I did different during that time period. So I'm assuming that whatever that IV had in it worked to fix that. I don't know what else it may have done, but that was the thing that I was able to really detect that there was an absolute change in my physiology that something was fixed.

Dave: We've had Bob Hariri from Celgene on Bulletproof Radio. One of the innovators in the field. Dr. Harry Adelson, Kristen Camella, Amy Killen, Matt Cook, a good number of stem cell people have done a lot of procedures, and I've done work with all but Bob, so mostly recently with ... Harry had 11 vials of exosomes, my fat derived cells, and half a liter of bone marrow derived cells, put in every joint in my body, Johns Hopkins neurosurgeon put some of the cells inside my spinal cord, not intrathecal, but actually with a cannula, and face, hair, other unmentionable areas, everything you can possibly do all at once, and that was probably my fifth stem cell treatment.

Dave: So, my plan is, yes, the environment sucks and it causes inflammation, and the environment also does some amazing stuff, but basically the toxin levels are unacceptable, especially if you travel as much as you probably do, as much as I do. Airplanes are even worse. Hotels are like this. So, I might as well just get stem cells every six to 12 months and just keep that up for life. Good idea, bad idea?

Robert: I think it's an interesting idea, depending on where you're getting them and depending on how technology evolves. I know some people that are doing some things, not quite as extensive as what you just described.

Dave: We call that the whole body stem cell upgrade or something with [inaudible 00:26:32].

Robert: Yeah, you just got the new Mercedes with every possible option you can imagine.

Dave: I don't know a better investment than your own biology

Robert: I agree. I think you're doing things that's a smart thing to do because you have the capability and you have the intelligence to know this is interesting stuff, and it's not so much first do no harm, I think that you're taking technologies ... I'm a big fan of exosome, stem cells, cytokines, growth factors, hormone replacement I think is very helpful done carefully and properly. So, yeah, I think it's a good idea. I don't know if I would do it every six months, but certainly as needed.

Dave: Is the hippocratic oath, that first do no harm? Is that actually what it should be?

Robert: It's a nice thought, but if you're not a little bit of a cowboy ... The best docs who become anti-aging docs who really are into it are ER docs, emergency room docs, because they're the cowboys. They're not afraid to try anything. You know what I mean? In this field, you got to be fearless in the sense of not doing stupid things, but doing innovative things that have some scientific base, some strong scientific base, and really, a lot of what we've learned about anti-aging came from the bodybuilding industry. I remember when I was training back in the old days, doctor told me, "Don't lift weights, you're going to get muscle bound, don't get weights, you're going to enlarge your heart." Well, the doctors are dead, all the bodybuilders are running around California in their 80s, and the same thing here. They were so against nutritional supplementation. My doctor said, "You don't need this, you get enough from food." We know that's all nonsense today.

Robert: So, I think that there are a number of technologies when used effectively ... I'm a big fan of also hormone replacement for men and for women. Stuff works. Came from the bodybuilding industry. They were doing ... maybe not healthfully, they were taking too much of various hormonal medications and so on, but the concept one therapeutically is a good one, and there is strong scientific basis for it.

Dave: This is going to sound unrelated, but it's totally related. A lot of people don't know about the history of hacking, and actually was in cyber punk, in the early '90s, and a computer hacker. I studied computer science and worked in that field and things like that, but hackers were around before then. We had people who were hacking the

phone system called freakers, but before then, some of the world's first hackers were ... Where I grew up in New Mexico, we called them [trollos 00:29:07], or they called themselves trollos. These were the guys who had the best low riders on earth, and this is we're talking late '40s, '50s. And they got so good at managing hydraulic systems in their cars so they could go up and down and do all the crazy stuff that you see in rap videos still today, that the US military came in and said, "We need help designing tanks, because you guys are better at this than anyone else in the world," and a lot of those guys ended up getting jobs at the very biggest military contractors because they focused on this. I feel like that's exactly the same thing.

Dave: Now we're in the era of hacking the human body, and what you're describing there is, yes, the bodybuilders were doing stuff that doctors didn't even know about. In fact, doctors said to their face it didn't work, and the bodybuilder is like, "Have you seen my abs? And you look like you're going to die." In fact, the bodybuilder was right. The cognitive dissonance was so strong, but we did suck those techniques out of bodybuilding and into the anti-aging field.

Robert: That's kind of interesting, because originally, people were so against bodybuilding. It was like a bad word that we were forced to use back in the '30s and '40s, physical culture, and the Olympic lifters hated the bodybuilders. Why? Because when we have the shows, everybody wanted to go to the bodybuilding shows and nobody really cared to go to the Olympic lifting shows now. Me having been in both sports, although I never competed in bodybuilding, that's why I've been chief doc for that sport for so many years, but a lot of this information, a lot of the training techniques, the nutrition that's used, how to use protein, how to cycle in terms of whether it be medications or whether it be the type of foods, the way the meals ... Meal prep, all these things, it's really scientific. These athletes, these bodybuilders, they have this down to a science. They weigh all their food, they know exactly how many calories, what time of the day, really sophisticated stuff. It's quite amazing.

Dave: So, where's the next round of anti-aging knowledge going to come from?

Robert: I think it's going to come from a few areas. When you have gene therapy, nanotechnology, genetic engineering, it's not even the stem cells, it's the various growth factors that are coming out, and that's why the exosomes are kind of interesting to us. I think that we're going to see some medications or some type of compounds that are going to be like in escalation, like we see with our cell phones. If you look at your cell phone from 10 years ago, it was like a big block. Now you have super computers in your pocket.

Dave: It's great.

Robert: Imagine, now you go to nano circuitry, and now you go to nano pharmaceuticals, and you don't even take them in. You breathe it in through the lungs with nano particles. So, I think there are things in the pipeline right now that are going to be off the hook, and when you start to combine them synergistically, you're going to get this massive escalation in capability. Now, anti-aging is not a bad word anymore. It's not a bad thing. Now it's being used by the big boys. So, I think that's going to blow the doors open and

it's going to allow more and more people to get involved, and more and more scientists to get involved and be told, don't do that, that's really ... You shouldn't be doing that kind of experimentation. And more docs trying different things, because that's really where you learn. Unfortunately, the state boards keep persecuting the docs for being innovative for good, safe therapies, because they don't like it. Take growth hormone as an example. The growth hormone administration given to patients is like one-sixth of what you'd give to a child as therapy. They're trying to demonize things that really can be very helpful. Now, I'm not on growth hormone myself, but I've seen it work very effectively on patients in their 70s and 80s, and they snap back really good.

Dave: I've definitely had a parent use it after surgery, and it's pretty incredible. The doctor looks up and says, "That's weird, you're healing twice as fast as you're supposed to. It must be a miracle." Of course, he holes up the vile and says, "Maybe it's not a miracle." The doctor says, "No, that can't be it." All right. I've just seen that-

Robert: It's a duh. You put your hand on your forehead, duh.

Dave: Going back to the hippocratic oath question, I don't want a doctor whose job is to first do no harm, because you might do harm with almost anything. I want a doctor who's going to do for me what he'd do for himself or herself. If you were in my shoes and you had my resources and my family, and this goes for no matter what your resources and no matter what your family situation is, your goals in life, whatever they are, and the risk tolerance you have, here's the solution. Yes, you have a 20% chance of dying, but you have an 80% chance of healing everything and living another 30 years. You want to roll the dice. That is a doctor who's done no harm. But the doctor who says, you don't get to pick, that is doing harm. Am I too radical?

Robert: No, you're not radical at all. In fact, it's kind of funny, the first anti-aging patients were not women. People think they were women. They weren't. They were men. When a man loses the hair on top of his head and that part below his waist stops working, the men will pay anything to get that fixed, and those first anti-aging patients were for hair transplant and for erectile dysfunction. Take as an example in terms of different drugs. When Viagra came out, now mind you, for erectile dysfunction, you don't die from the lack of an erection, even though the man may think he may die from not getting an erection. It's a non-fatal disease; largest multi billion dollar launch in the history of the pharmaceutical industry, for a drug treating a non-fatal disorder. That tells you that the public wants this.

Robert: It's the art of medicine. When they say first do no harm, yes, of course we don't want to harm the patient, but you have to be innovative and you can't do the same old same old. You can't [inaudible 00:34:48] textbook of internal medicine and just give a drug for every time the patient comes in, or don't put your hands on the patient in terms of really trying to diagnose them and see what's going on, and now doctors are treating the chart and not even treating the patient. They're not even looking at the patient, not even examining the patient. They're looking at the chart, and due to the medical legal things out there, they're afraid to do the right type of medicine, because now they're doing things to protect themselves from litigation.

Robert: So, things have really gotten topsy turvy, and then on top of that, you've got the state boards and then you got all the bottom feeder lawyers that are out there looking to sue people for anything under the sun, whether it's based on fact or not.

Dave: So, what's the best country to go to to get some really cutting edge anti-aging stuff? Is it Japan?

Robert: No, actually, I like Thailand.

Dave: Thailand.

Robert: I like Thailand. I think Thailand's ... a lot of the docs are trained, were trained in the US. There's some tremendous hospitals out there. Actually, that's where I get my medical care. I don't even see a doctor here in the US.

Dave: I love it.

Robert: I have my full history and physical out there. I can get a complete history and physical, which would mean exercise, treadmill test, EKG, full body sinography, just every blood sample, everything under the sun for like \$600, which in the US, would be a \$10,000 to \$15,000 Mayo Clinic exam.

Dave: Wow.

Robert: Okay? So, I don't even get my medical care in the US. That's why medical tourism is exploding, because people want to go to other places where they're not getting the old textbook ... When I would look at how they're doing physicals at a lot of the so-called elite clinical or medical institutions here in the US, basically you go in and they say, "Well, you're not dead this year, we didn't find anything that'll kill you. Come back in a year." Not giving you advice of what you should do, how do they get better, how do they enhance their performance, how do they get stronger, faster, more ...

Dave: All the stuff we want.

Robert: All the stuff we want. They just say, "Well, we haven't found disease." Any doctor can find disease. It takes a really smart doctor to find healthy and then enhance it.

Dave: I love it. If tomorrow someone gave you a gift certificate for a million dollars in anti-aging therapies, for you, how would you allocate that?

Robert: Well, I got plenty of million so I'm not so much concerned how I would spend the money. Anyway, but I wouldn't necessarily spend any more than I do now.

Dave: How much do you spend now in anti-aging?

Robert: Not a lot. Probably I would say \$20,000 a year.

Dave: Okay. Is that mostly supplements?

Robert: It's mostly supplements and the right kind of food stuff, and exercise, and maybe more sometimes because whenever I see some new equipment I want to try out I will, because I like to train.

Dave: Okay.

Robert: Even if somebody handed me a million dollars and I could go, gee, I'm going to go do ... I'm not afraid to spend the money if I think a therapy is good, but I don't do everything under the sun willy nilly. I look for stuff, I evaluate it, and then if I feel like the stem cell administration I had, I did my research on it, and I said, I'm going to try this. I haven't gone back though.

Dave: If you're only spending \$20,000 a year and you got 200 million cells, that was at least a \$20,000 treatment. Are you paying less?

Robert: No, see, in the clinic I went, it was \$2,500, and if you do that-

Dave: That's a good deal.

Robert: That's right, Dave. So, if you do-

Dave: I'll get that number afterwards.

Robert: Yeah. See, if you go to the right places, and a lot of the places that are charging that amount of money are ripping the patients off, because they're charging insane money for what their true cost of goods are.

Dave: Yep. I've seen the cost of goods, and sometimes it's crazy mark up and sometimes it's not. Also, huge variances in quality. You get an IV, you get cells from different places or other compounds like a [Myer's cocktail 00:38:27], sometimes you want to pay a little bit more because you're getting the good stuff. Being a manufacturer of supplements, bulletproof, and foods, I know at a visceral level how many corners you can cut to save a little bit of money. If you cut enough corners, you save a lot of money, and I don't cut any of those corners. It means that the supplements are going to cost a little bit more, but it means they have the right levels and the right quality.

Dave: I'm finding that even in the era of anti-aging medicine, you get people who do a crap job. They use poor quality ingredients, and they're knocking off original research and things like that. Then, people say, it doesn't work, and it sort of pulls down the industry. Even seeing keto, people putting lauric acid or stuff that doesn't do more than corn oil and saying, "It's highly ketogenic," and well, someone who tries that for the first time, they're just going to say, "I feel like myself but it tasted like coconuts. Great." All of a sudden, a potential person who could've been changed doesn't get to pick that up. Are you concerned that, as a \$240 billion for anti-aging, that there's just enough bull shit out there?

Robert: There is a lot, and that's the problem, because that's what we try to avoid. That's why a lot of the vendors, we try to as best we can without being too overbearing ... there are a number of vendors that we don't even let exhibit anymore at our conferences, 'cause we don't feel there's enough scientific basis to what they're doing, and yes, with any industry, there's a lot of marketeers that are not doing things the right way. You go to the nutritional supplement industry, there are some that are really cutting corners, and some of them get in trouble for it, and too much money is spent on the marketing versus the science, and that's why they don't publish, they don't do these scientific presentations like they should.

Robert: So, yeah, we have this problem in this industry like we do in every industry.

Dave: It seems like it's part of that process you talked about earlier, when you first come out with something, people are going to resist it and make fun of it and then suddenly say it's obvious. At that very last step, then they knock it off, and then they run the risk of breaking it if it's something that's new and cool enough. So, I've had a hard time within the world of biohacking. There's some stuff like iowaska, micro dosing or full dose LSD, breathing exercises, that I can show you on a qualitative EKG. I know that they change your brain state ... Well, you can feel it clearly, and we also know that they raise BDNF, and they do some cool things like that, but they're just inherently out there, and most of them are not that well clinically studied because they've been illegal for 40 years. Before that, the studies were pretty positive.

Dave: Stuff like that, I'm always walking that line, all right, do I want to include this in the field of biohacking. Because eventually, you get to a certain point where like, well, if you just do the magic fairy dance, and you ask the great lord octopus with your left eye closed or whatever the heck ... Clearly, there's probably not a lot going on there. Where do you draw the borders? I'm asking this because I'm working on this with biohacking, on like how do I know if I should invite someone to the biohacking conference? How do you do that? How do you know when someone's gone too far?

Robert: Well, you learn by that type of experimentation. There are benefits of these things, like iowaska is very interesting, and I have some scientific familiarity with that. I'm also now, since I go to Thailand a lot, there are people who are very heavily involved in the meditation through the Buddhist religion, and they're doing some pretty remarkable things for themselves, healthfully, and you see different people at different levels in that area. So, it's challenging because you got to try the new stuff but you have to be a little careful you're not going off the deep end. Like everything, like water is great, but you can kill yourself if you drink enough water. So, Aspirin would never be approved as a drug today, and it's available OTC.

Robert: So, we got a lot to learn, we got a lot to overcome, but I think we're on the right track, and the world has changed, and it's changing in the right direction, and we had to deal with enormous resistance, and now we're into people in the copy phase. So, I'll handle that. That's been than when they were really nasty.

Dave: Yeah, the copy phase is a much better place to be. You brought up Aspirin, so I have to ask you this. Have you ever seen the research on the Spanish flu epidemic, the death rate in Aspirin?

Robert: I can't say that I have, but probably the death rate of Aspirin may be higher than the Spanish flu.

Dave: Yeah. I was hoping that you'd say yes, and we'd chat about it, but the short version is that the year of 1918 is the year that Aspirin came off patent, and the Spanish flu caused massive internal bleeding, and people were taking Aspirin like candy because of fevers, like sometimes 50 grams of Aspirin a day. There's some pretty credible papers out there saying we think that it really wasn't that bad of a flu, it was just a really bad use of pharmaceuticals that just became widely available.

Robert: Even though I'm hearing this for the first time, it is probably ... it may very well be the case.

Dave: We see stuff like that, and even in Phen Phen, the weight loss compound, that finally got pulled off the market for causing I think it was heart attacks, if I remember right. We've seen this long history of drugs that don't work. Are you worried about some of these anti-aging drugs, maybe if they turn on cellular regeneration, increasing cancer risk but doing it 10 years from now? How do you think we're going to balance out that risk?

Robert: I think the anti-aging drugs, at least the ones that are out now and whether it be Metformin or things like this, I think relatively benign, compared to the drugs that they're giving people for blood pressure, the statins and all this other kind of stuff, and the psychogenic drugs where they're trying to help people with depression, the Prozac and all these things that are just destroying people's lives. Even things like sleepers like Ambien and Lunesta, you mix Lunesta and Ambien with somebody who's had a few drinks of alcoholic, you could end up with a schizophrenic memory loss, sleep walking ...

Dave: Who knows what kind of tweets you might send out.

Robert: I think half the people are doing that anyway from the kind of tweets that are going out anyway, but yeah.

Dave: Yeah. It's tough because even something as simple as Metformin, which is a very well known anti-diabetes drug with anti-aging properties, in the late '90s, the first company to look at Metformin was called Biomarker Pharmaceuticals, and I'd been on Metformin for three years. I did not have diabetes, although I did, prior to starting Metformin, I did have a pre-diabetes, but that was already gone from nutrition. I said, I'm going to take this because I'm into anti-aging, and when I met the Biomarker pharmaceutical team, because fortunately they were there in Palo Alto or somewhere, I went in, and I mentioned I'd been doing this, and they only had mouse studies. They said, "Really? Are you serious? How old are you?" I said, well, I'm 78. You could just hear a pin drop when they all thought, oh my god, it works. Then they realize, wait a minute, and then they all laughed.

Dave: Since then ... I had been on it for five, 10 years, and then I quit because I looked at the research on mitochondrial performance on Metformin, and you get about 20-30% drop in ... or we'll say decrease in mitochondrial heteroplasm, which scares me, so now I don't really know. Some of these anti-aging drugs, is the risk reward where we think? I want to run a few of these past you. Do you take Metformin?

Robert: Yes, yes.

Dave: How long have you taken it?

Robert: Just a few years.

Dave: Okay.

Robert: About a year and a half.

Dave: Okay, and what kind of a dose do you consider?

Robert: 500 milligrams BID.

Dave: Okay, so relatively low dose. All right. Senolytic compounds.

Robert: No, that's really it. I'm not really taking a lot of stuff, yeah.

Dave: Okay. For a guy who runs A4M, you're kind of a conservative anti-aging guy.

Robert: Well, I was fortunate to have quite extreme genetics. I never get headaches. I don't need a lot of sleep. I have very high levels of strength and energy. I've never had a cup of coffee even in my whole life, no offense to people who-

Dave: I can show you some studies.

Robert: Yeah, I'm sure you can. Not against coffee. I just never got into it.

Dave: There are a few people out there who are just wired for energy. Tony Robbins is like that.

Robert: Yeah, Tony, yeah, he is.

Dave: I can't imagine Tony Robbins on coffee. I think things would levitate or something.

Robert: He'd be bouncing off the wall, yeah.

Dave: Yeah. So, when you're at that level, yeah, there are people who just don't need it. However, a lot of them have a hard time with sleep. Do you sleep well?

Robert: I don't sleep a lot because I don't need a lot of sleep, but-

Dave: Do you have the genetic mutation that you need less sleep?

Robert: I don't know. All I know is that some people get headaches, I never get headaches, I don't need much sleep.

Dave: How much-

Robert: I don't get hypoglycemia.

Dave: Wow. How much sleep is not much sleep?

Robert: Two to four hours.

Dave: Yeah, you've probably got that gene, I forget what it's called, but man, I wish I could get that gene.

Robert: Well, I'll throw you a sample.

Dave: Nice. I've had six hours and six minutes for the past almost, geez, I want to say five years of data, so I do quite well on that, when I eat the right stuff, and if-

Robert: But sometimes, even if you ... If your body says, hey, you need to rest, if my boy says, hey, especially with the international travel, I'll sleep ... I may sleep a good portion of a whole day.

Dave: Yeah.

Robert: You got to listen to your body.

Dave: Very good point.

Robert: Generally, pretty simple healthy, nothing really profound. A lot of fruits, vegetables, lean meats. I'm not a vegetarian. I do eat, which I shouldn't eat as much in terms of chicken, and on the west coast, I won't eat any fish or sushi because of the Fukushima goodies that are coming over every day.

Dave: So, I've been looking at the radiation levels, looking at papers and things like that, when it comes to sushi, and it looks like the levels of the radioactive compounds are 2% higher than they were before. Do you have other data that I don't have?

Robert: I think they're a hell of a lot higher. Anything from the Sea of Japan ... I think the west coast is being bathed in radiation, and Fukushima is kicking out more than Chernobyl. I think it's a really bad situation. If you look at radiation all over, but especially on the west coast, it's quite bad, and getting ... and not getting better. You're getting this cumulation of radiation. So I think that's why you're seeing so many more cancers. You're seeing all these types of disorders at higher and higher ratios, and that unfortunately is going to increase because we're surrounded by it. Then you have all

these nuclear facilities all over the places. These things get into the food, the air, the water, and they get dragged all over the place.

Robert: That's why I was talking about the toxic soup that we're living in, and that didn't increase. I was fortunate, I bought a bunch of cans of tuna pre-Fukushima, which I still keep and I still eat, so I have salmon and tuna pre-Fukushima, from the Sea of Japan.

Dave: Interesting.

Robert: That's why I bought a lot of it back then.

Dave: That's not a bad idea. Do you have any particular websites for research on that? I'm happy to look at this again. I dug really deep after it happened over the first couple years and figured out-

Robert: A lot of that stuff has been pulled off of the net.

Dave: Interesting.

Robert: It'll come up. I don't have any particular website, but I think if you stick your nose around, you and somebody who's as good as computers-

Dave: Yeah, I know how to research, yeah.

Robert: ... will find some interesting stuff.

Dave: All right. Hey, if you're listening to this and you have some amazing stuff like that, hit me up on Instagram or something, [dave.asprey](https://www.instagram.com/dave.asprey), and I will do my best to look at what you say. If 5,000 people send me stuff, I probably won't see it all, but my team might, and I'm interested in that, because I really like sushi, and I take stuff that binds heavy metals and sushi. You can take certain forms of Vitamin E that are substantially protective against some forms of radioactivity. Ketones are relatively protective, and that's not to say that it's a perfect solution, but you're also getting the SN2 fish oils that seem to be really important, and I've kind of done my risk-reward analysis and figured that until I see more data that says that there's the radioactive stuff, I guess I could fire up my Geiger counter ... All right, now you got me thinking about that. Geez, that's just what I needed. Thanks, Bob.

Robert: Well, see, lucky for me, I don't like raw fish, so ...

Dave: Well, yeah. You just have an excuse not to eat sushi. Now it's making more sense. You don't drink coffee, you don't eat sushi. I'm starting to wonder ... I don't know. I'm just kidding. Bob, how long are you going to live?

Robert: I'd like to go to at least 120, if possible, or at least 100. I would like to go to 180 like you. It would be great, but realistically, I would say in between 100 and 120.

Dave: All right. What is your number one piece of advice for someone who wants to live as long as humanly possible?

Robert: I think the most magic pill is exercise, aside from the nutrients and all this stuff. If I had to pick the one thing that I think could really make a difference, is exercise, because you may eat the wrong things, but if you train up hard enough, you're going to start to burn the calories and you're going to be able to override at least some portion of the other things you may not be doing properly. So, if I had to pick just one thing, it would probably be exercise.

Dave: Beautiful. Well, I appreciate you taking time to be on Bulletproof Radio today, and just my personal thanks for making a field of medicine that helped me directly figure out what was going on with my own biology, helped me learn what I learned working at the anti-aging nonprofit group, where I first heard of A4M. I still remember going to one of the probably first four years of A4M conferences down in San Jose and just realizing, oh my god, the world's changes is the coolest thing ever, and you caused that to happen. Biohacking wouldn't happen. It wouldn't have happened without anti-aging as one of the big things that helps to feed into that universe of things that give us control of our biology. So, just, thank you.

Robert: Well, thank you for the good stuff you're doing because you're making a real impact with the difference science you're bringing and the different products that you're bringing, and the education like this. You're reaching a lot of people and getting their minds to really think in a different way, and that's the way you change the world, and you're making it happen.

Dave: It's a huge honor to be able to speak in front of about 3,000 doctors at the American Academy of Anti-Aging Medicine. I am not a doctor. If you're new to the show, I am not Dr. Dave Asprey. I'm Dave Asprey, unlicensed bio-hacker who can't have his license pulled for saying whatever it looks like the science does.

Robert: You're actually safe. You're safe.

Dave: All right. Have a wonderful night. Thanks for this special edition here at A4M in Las Vegas.

Robert: Thank you. Pleasure.