

Dave Asprey:

Do we need test kits? Unless we can widely distribute them, in which case of course we need them so we can map the thing out, but until then, I mean should we only reserve them for high-risk people?

David Sinclair:

I agree. I think that it's the same for chloroquine, or Plaquenil, as it's known. Right now, the doctors that I know that are on the front lines, as we say, it's desperate times and we need to keep them healthy, otherwise we're all in trouble.

Announcer:

Bulletproof Radio. A state of high performance.

Dave Asprey:

You're listening to Bulletproof Radio with Dave Asprey. Today's cool fact of the day is that it's now possible to predict empathy in brains, even when they're at rest. And you might be saying, "Dave, what the hell? You're recording this in the middle of a pandemic and you're talking about empathy. You're a bad person." Well, it's exactly that part of your brain that I'm talking to right now because it turns out UCLA scientists have shown it's possible to predict empathy from brain activity when you're just chilling, which is what you're supposed to be doing right now, unless you're trying to work from home over internet technology that only kind of sort of works. In this new study researchers wanted to know how accurately they could predict whether someone was likely to be empathetic or not, which is really a big deal. So they just said, "Hey, what does your brain do when you're not paying attention?" using fMRI, and then they used machine learning, which is the cool stuff, and what they found was, just looking at brain waves, were comparable to questionnaires that they use for standard empathy assessment.

Dave Asprey:

So what you do when you're not paying attention is as good as you filling out a survey to figure out whether you really, really, really give a shit about other people or not. One other thing you could do to measure that would be have you decided that you're going to stay at home even though you're personally at low risk of getting this COVID virus. And the answer there is well, if you are staying at home and limiting your exposure to others, you probably have some empathy for others, or at least you're susceptible to shaming, which is what I'm doing right now. On that note, this is a special episode focused on COVID, on pandemics, on the Coronavirus with one of the really smart, groundbreaking, amazing humans working in the anti-aging field. A guy who had been on the show before, very, very popular guest, he's been on the Joe Rogan show, many, many national TV and radio shows talking about how we're going to live way longer than anyone thinks. And so we're in alignment on that.

Dave Asprey:

And one of the things that matters to living a long time is well, not dying, step one. And we're going to talk about the pandemic. I'm talking about none other than Dr. David Sinclair, who is a professor in the Department of Genetics at Harvard Medical School, and he looks at biological mechanisms of aging at Harvard, and is just a shockingly smart guy. If you haven't read his anti-aging opus that just came out, Lifespan, you're missing out. And since you don't have to commute, you should read it right now. On that note, Dr. David Sinclair, a PhD, not MD, welcome to the show. Tell us about your research brain and what you've looked at about COVID, and we're going to go deep on this virus.

David Sinclair:

Hey Dave. Thanks for having me back on. Yeah, it's a very interesting time for us scientists. Well, I've been a very busy. I'm also a microbiologist. I'm a geneticist. I've got a company working on the front lines making test kits to discover and track the virus. So yeah, it's been very busy these last few weeks. I think a lot of us thought that we might have some time off with our families, being sent home. We wound our lab down a couple of weeks ago, but it's been busier than ever, and mainly because I think we all, or most of us, want to be useful. And the way I'm being useful is talking to my friends on the front line, trying to distribute goods to people I know in the industry, as well as kits from China. It's been crazy.

Dave Asprey:

Is it kind of creepy that in Lifespan, this is your book about how we're going to live a long time, you actually call out the 1918 influenza, H1N1, and you say straight up the gains in life expectancy we've witnessed over the past 120 years could be wiped out for a generation unless we address the greatest threat to our lives, other life forms that seek to pray on us. Do you have a crystal ball or you're just generally worried about that on principle?

David Sinclair:

No, I'm generally worried about that. Before this happened, it was pretty obvious to me as someone who was already working on a company that was detecting viruses that these things were going to attack. Bill Gates was sounding the alarm years ago. Unfortunately it's come, it's here. Though it's not the worst virus that could have come, it is really bad, but I think it's good practice for the really big one that's probably going to come later in our lifetimes.

Dave Asprey:

I want to ask you the most awkward question that may be on a lot of people's minds, and I'm going to sound like a total jerk for asking it. Is COVID-19 taking out people who were going to die of other things anyway because they were unhealthy? In other words, in Italy, the average age was 80.1%. the average person who died had three other serious comorbidities. They were already, I'm going to call it, half dead. Not in a bad way, I respect my elders, the older someone is, the more I want to interview them because they have the most mileage to share, but is this as big of a threat as we think it is given that it seems to be taking out the people who are vulnerable, who are going to get really harmed by almost any infectious thing? These are the people who die of pneumonia, who die of flu, who die of cardiovascular failure because they're near the end and because their biological energy isn't where it should be. Is that a question that's even worth asking or am I just a jerk?

David Sinclair:

Well, no comment.

Dave Asprey:

Oh, so I'm just a jerk. Yeah, thanks man.

David Sinclair:

Well, I work at Harvard Medical School. Our goal in life over there is to keep everybody alive and healthy as long as we can. That's what we pledge to do.

Dave Asprey:

It's a noble goal. And I'm not saying anything bad about that. I support it. The thing is you guys kind of suck at it. I mean, I hate to tell you, these people are already suffering from three big comorbidities. They have cardiovascular disease, they have cancer, they have diabetes. You didn't solve those yet, so what else is going to come along and be the straw or whatever, the piece of straw that breaks the camel's back.

David Sinclair:

Okay, Mister Controversy. So not everyone has underlying illnesses that's died, okay.

Dave Asprey:

That's important. Yeah.

David Sinclair:

Yesterday I was aware of someone in my network who died at age 29 who was healthy. So there's bad stuff happening, but you're right, there were a lot of people who haven't taken good care of themselves in life, they've got diabetes, they've got heart disease, or they're just aged. And the reason that I wrote my book is to say we don't have to all end up like that. There are things we can do in our lives, as you know, I follow your stuff, we can push that off until much later and be healthy in our 80s, and even our 90s. And if you're healthy in your 80s and 90s it's unlikely that this is going to get you.

Dave Asprey:

Okay. In fact, one of the most popular videos I've done on Instagram, I hash tagged it Corona muffin, and I was looking like I was eating a big sugary muffin from a [crosstalk 00:07:50].

David Sinclair:

I saw that, yeah.

Dave Asprey:

And the reason it was popular, is like guys, I'm flying home and I'm going to go self-isolate because I don't want to hospital surge, and I'm doing it for you, right. Because you're older, you have more knowledge, because you're immunocompromised, whatever the deal is, but I'm buying you time, and so were billions of other people, so that you can take steps right now to become more resilient. How realistic is it that someone who is at moderate risk of having something serious happened that they can move the needle in the next 60 or 90 days to become a little bit less than moderate risk? How fast does it move?

David Sinclair:

It can move really quickly. I mean, you're not going to cure your diabetes in a few weeks.

Dave Asprey:

But you could lower your blood sugar, right?

David Sinclair:

You can definitely. So I agree with what you're saying, which is if you ever had a good motivation, good reason to start being healthy, and stop eating crap and eating lots of sugar and processed food, especially the sugar and carbohydrates, now is that time. Stop it right now.

Dave Asprey:

There you go.

David Sinclair:

And then move. Get up off the couch. Don't just watch movies in the spare time that you have now. Move. If you can't get out of the house, some of us are lucky, I'm lucky here to be on Cape Cod, we can go for a walk, but if you're in the middle of New York, star jumps or something like that. What I'm doing, as an example-

Dave Asprey:

Star jumps? Is that jumping jacks for Americans?

David Sinclair:

Jumping jacks, yeah.

Dave Asprey:

Okay. Got it. Yeah. Sorry, just making sure.

David Sinclair:

Up and down. Yeah, I still have some Australian in me, but what I've done, so I used to do workouts, not professionally, but with a trainer every Sunday for two and a half, three hours. I've now said I'm 50, I'm at risk, I'm going to get even fitter than I was already. I'm eating better, I'm trying to eat super healthy, but I've upped my exercise. I'm now exercising as much as my body can take at my age. So I'm doing at least three days a week of high-intensity exercise, as well as weightlifting with a trainer through the internet.

Dave Asprey:

Is this cardio or is this weights?

David Sinclair:

It's mostly weights. A lot of hip hinge, a lot of big muscles, trying to get those strengthened. But also we all need to get our lungs in order. That's what's going to be attacked first. And that's what probably will do us in if we get this.

Dave Asprey:

So two questions for you there. One is I've seen studies that say that doing lots of endurance cardio might make you at higher risk or lower your immunity, so is that an issue? I mean, if you're going to spin for three hours a day, is that going to be worse than spinning for an hour a day, or doing something else?

David Sinclair:

Yeah, I've seen that. So what I'm doing is short bursts of high intensity.

Dave Asprey:

Okay. High intensity interval training. There's so much evidence behind that. I mean, I'm one of many voices for years who've been saying, "Guys, this is what science says." So you're on board with that. What about this over-training phenomenon? When people have lots of emotional stress, lots of loneliness stress, lots of job stress, i.e. 10 million people probably just got laid off last week, and maybe they're not sleeping very well as a result of it, do they really want to do high intensity interval training or is it going to actually mess with their cortisol so much that their risk goes up?

David Sinclair:

Well, you do what feels right to you, I think. But I think the fact that we're indoors and all going slightly crazy, exercise is really good for stress.

Dave Asprey:

So you've got to move, and you've got to do enough exercise for stress, but maybe not get fully exhausted every single day.

David Sinclair:

Yeah. You don't want your body to be damaged too badly. So I work out enough so that I feel a little bit sore the next day, but not a lot.

Dave Asprey:

Not a lot. Okay.

David Sinclair:

You don't want to be really overdoing it at this point. That's true.

Dave Asprey:

The reason I'm calling this out is that the average human on earth, this probably isn't an issue, there's a lot of Bulletproof people who are like, "I'm a senior executive at my company, and I'm going to do IRONMAN, and I'm going to start a new company, and I'm going to write a book," and they're a little bit nuts. And so if you're one of those human beings who's listening to this, look, there is a wall, and you can use Bulletproof, and you can realize, and you can move the wall way out, but you can still go so fast because you built up speed that you hit the wall. Now is not the time to blow out your biology with ultimate endurance training. So yes, stay really strong and I'm with you there.

Dave Asprey:

Okay. Next up, general actions for virus immunity. Things that you're thinking about. And I want you to talk about supplements, drugs, whatever you can, because you're one of those researchers who's willing to, "Hey, look what Resveratrol does, and here's how I take it in the morning." So you're willing to put one foot on either side of the fence instead of being dogmatic on either one. So give it to me straight. How do I make myself stronger against viruses? And then we'll go into specifically this one.

David Sinclair:

Sure. Well there's plenty of drugs that are being tested, but we can maybe touch on those later. We don't all have access to those, but what I'm doing at home is keeping up my vitamin D levels. That's clearly important. Rhonda Patrick has talked about that online. I'm still skipping breakfast and trying to eat a very late lunch. I didn't eat lunch today until about four o'clock today. So that period of intermittent fasting has been shown, at least in animals, to boost the immune system and shut down chronic inflammation, so I'm continuing to do that, but I'm not starving myself. I'm not doing three days fasting. I think that that might put your body, like you say, into a bit too much stress, but I am trying to get my blood sugar down. My blood sugar is typically a bit above what I would like. I'm not diabetic yet, but I'm doing what you said, which is avoiding eating these donuts. I don't eat them normally, but it's even harder now that we're at home and it's easy to just go to the cupboard and snack on something [crosstalk 00:13:46].

Dave Asprey:

You actually keep donuts at home?

David Sinclair:

No, but my kids, I've got three teenage kids, and they have a fair amount of crap.

Dave Asprey:

If it all disappeared, they wouldn't be able to go out and get more. I mean what a time to put them on a good diet. By the way, they hate me right now for saying that. I'm just kidding. They'd hate you if you did that. I get it.

David Sinclair:

Well I just had a look, my lovely wife, Sandra, is cooking Wiener schnitzel for dinner, which it's going to be good, occasionally you got live a little, but mostly I'm trying to be very healthy with what I eat and how much I eat. In terms of the actual food, I'm trying my best, and I think we should all try our best to still eat fresh food, but it's getting harder and harder for obvious reasons, but if you can't eat super fresh food, what I'm turning to is "fresh frozen food." I think that's still better than the cans, and the boiled pasta that a lot of us are turning to during this time.

Dave Asprey:

I was really refreshing to see a photo of the shelves at a wholefoods. The entire pasta aisle had been cleaned out except for garbanzo bean pasta. No-one would touch that shit. Garbanzo beans are nasty, okay. This is proof. I'd rather starve than eat garbanzo beans. So if you're one of the people who skipped over those, hallelujah brother. All right. So I would say garbanzo beans are inflammatory, especially pasta-like stuff, for a lot of people. Are there specific foods that you would say don't do that? I'm assuming sugars there, but are there other kryptonite foods in your own program or your own house that you're like, "I'm not going to do that?"

David Sinclair:

Probably about half of what's in the cupboard.

Dave Asprey:

Wow. The truth comes out. Cupboard shaming.

David Sinclair:

Yeah, I'm pretty strict on that.

Dave Asprey:

Okay, so what would you not eat though that you think people are eating? Maybe mistakes they're making?

David Sinclair:

Well, I don't know, Dave. Did you ever wear a one of those glucose monitors to see how your body [crosstalk 00:15:32]?

Dave Asprey:

In fact, I just finished three months. I've got a new order of them that just came in and so I'll be sticking one on later day. The CGMs, yeah.

David Sinclair:

Yeah. So I was wearing one. I don't have one right now, but I learned a lot about my body. I was talking with Rhonda Patrick about this, the white rice, boiled rice, shoots our blood sugar way up. And so I try to avoid any rice, but particularly white rice.

Dave Asprey:

It's interesting. So we're opposites there. So for you, is it ... I mean-

Dave Asprey:

[inaudible 00:00:02]. So for you is it ... I mean everyone responds differently to different carbs. What I'm doing with white rice, because it's one of the ones that has the least amount of inflammatory other molecules attached that provides a source of starch, is I will put Brain Octane or some people do coconut oil, I just don't like that taste, while it's cooking. And then you can cool it. And when you cook it and cool it, it makes a lot of resistant starch. And then what I'm doing is I'm pounding it into a Japanese thing called mochi and then I add two cups of Inner Fuel, which is a prebiotic. And at that point it tastes amazing but I'm getting so much filling stuff you can't eat very much, and I've blunted whatever blood sugar I was getting. But even then I'd rather have a little bit of sushi with a lot of fat and fish and some sushi rice, than zero carbs for years on end. Because that seems like that might not be good either.

Dave Asprey:

But for you it's interesting. Rice is just off. What about gluten and flour and things like that? Is that also off?

David Sinclair:

Well, I'm also, my wife is also a baker, so there's fresh bread in the house it's hard. I try not to eat bread. I also found that was really bad for my glucose to shoot up. So what do I try to do? We have vegetables in the fridge, so when I feel like snacking I'll grab some little baby carrots and that kind of stuff. Some pickles, I find are pretty good. That's my go to. Fruit, we're running out of fresh fruit, but usually I grab an apple if I'm in need of some sugar. And I think that's a better thing for most people is a slow release. Eating grapes for me is terrible.

Dave Asprey:

Yeah, grapes will do it.

David Sinclair:

Just pop a cube of sugar into your mouth. Yeah.

Dave Asprey:

Okay, so sugar control's big.

David Sinclair:

[crosstalk 00:17:48] sugar down.

Dave Asprey:

Let's talk about vitamin D3. So I mean, everyone in my community, going back 20 years has been saying vitamin D3, the anti-aging, nonprofit, Silicon Valley crowd. And over time, at first I was saying, "Don't take vitamin A because it actually fights against vitamin D3," but the evidence over the last 10 years has come in that you need some preformed vitamin A. Not that beta-Carotene vegetable crap, but the kind that comes from actually eating liver or eating animals. And so today my recommendations are vitamin D3, it's usually 10,000, maybe even 15,000 I use, but 10,000 IUs of vitamin A. And if you start getting sick, taking 100,000 IUs of vitamin A and cranking up your vitamin D for that first three days. Have you seen anything about that? Do you have any thoughts about A versus D?

David Sinclair:

Well, I know a little bit about D, not so much about A. Sounds like you're the A expert in this conversation. I mean I know about vitamin D, and that immune cells require a certain amount. And I know by measuring myself, I also use InsideTracker where I consult, in full disclosure. And so I know my vitamin D levels drop, "dangerously low," during winter. So I'm trying to make sure that that doesn't happen. So I'm taking at least 2000 units a day with my family as well. But it's pretty clear that if you don't keep your levels of vitamin D up at the same levels as you have in summer, you can lose some of your immunity, and now would not be the time to do that.

Dave Asprey:

Okay. What about resveratrol, NAD, things like that? What's your take for viruses?

David Sinclair:

Yeah, so I've been looking at this a lot because I'm asked every day by people on the internet. Now, the issue with these two molecules in terms of giving a straight answer is that there's evidence for and against, and most of it comes from animals. But I can, just for the sake of discussion, I can tell you what I've learned. So the genes that we work on, they're called sirtuins. And anyone who's read my book will know a fair bit about these. These genes make enzymes that control our body's natural defenses against any insult, whether it's diseases of aging, or infections. And in fact the sirtuins are very good at combating viral infections in the Petri dish, and in some cases in mice where it's been tested. And I tweeted about this this morning actually.

David Sinclair:

What we now realize is that these sirtuins they need NAD to work. And we also have shown many times that resveratrol is an activator. And the way to think of it is that NAD is the fuel for the sirtuin enzymes, and the resveratrol is the accelerator pedal. Now even though that all sounds great, you might say, "Well, I'm just going to go and give myself grams of NAD precursors to raise my NAD, and I'm going to take resveratrol", there's some caveats. One is that resveratrol can, in mice, raise the levels of the ACE2 protein, the enzyme on the outside of your lung cells, your [inaudible 00:21:18] cells. And that would be a bad thing, right? You don't want to let the virus have more targets to get into cells. I think probably everybody now knows that that is how the virus gets into our body.

Dave Asprey:

And by the way, smoking specifically in the lungs, inhaling, vaping, or smoking, raises ACE2 in your lung tissues, which is one of those reasons that smokers really get trashed by the virus. Right?

David Sinclair:

Yeah. I'm sure that that's part of it. There's all sorts of problems with smoking.

Dave Asprey:

Yeah, true that.

David Sinclair:

Including increasing your biological age, which is I think part of the whole problem for the people who are succumbing. So let's see, so we've got the resveratrol is increasing ACE2. Oh by the way, while we're on the topic, these beta blockers, the ACE2 inhibitors, I don't want anyone to panic, they should consult their doctor. But there's a discussion amongst scientists that it might actually not protect against the virus, but make things potentially worse by up-regulating the ACE2 [crosstalk 00:22:25].

Dave Asprey:

Yeah. It's going to cause you to make more ACE2 receptors because you don't have enough ACE2, because you didn't deal with your stress problem.

David Sinclair:

Yeah, exactly.

Dave Asprey:

I mean, I hate to put it that bluntly, but I have some very close friends. I've said, "Look, I know you have stage fright, you almost wet your pants. You're a 40 year old grown man. Take a beta blocker before you go on stage." And he's like, "Oh my God, I can speak again." I'm like, "Yeah, but you haven't dealt with your underlying stress condition. You've just hacked the problem." So maybe for people on blood pressure meds like that, it's not time to panic, but get yourself a mask and some gloves and some hand sanitizer, and be a little more religious about your social distancing than you already are supposed to be. Because you should put yourself in the, "I'm at high risk category" until we know more. True statement?

David Sinclair:

Yeah. I think avoiding medicines when you can change your lifestyle is always preferable.

Dave Asprey:

But even if you go off of your blood pressure medication tomorrow and you don't die of popping a vein, which is a risk if you do that, or your kidneys can fail. So no one's going to advocate that. But even if you did go off of it, you're probably have up-regulated receptors for at least three or four months, which is the window where you really don't want to be at risk. So if I had been taking those meds, given what you just said, I just say, "Look, I need to stay socially isolated. I need to be more strict on my quarantine than maybe I thought I would've been before." Your risk level just went up a notch. You're not dead, it's not a death sentence. It's just we all tweak our behavior based on how much we think we'll live. When they put in air bags, people didn't put their seatbelts on nearly as much. Just a little tweak there because, "Ah, I'm safe enough." So just, you're not as safe enough as you thought you are is all I'm saying. Okay.

David Sinclair:

Yeah, it's true actually. It comes to mind that I'm surprised some entrepreneur hasn't started up a website with a survey and give you a percent chance of dying.

Dave Asprey:

Oh my God. How dirty would that be? If you're an entrepreneur and you do that least make it free or donate every single penny you make to charity, because your data's all crap and we know it.

David Sinclair:

Yeah. Well just getting back on to the topic. NAD is also confusing. So NAD improves sirtuin activity, you need NAD for, oh, at least 450 enzymatic reactions in every one of your cells. Without NAD you'd be dead, and you need it to survive. It's very important. But is it better to have more than usual? It's questionable. Because there's one study that shows that NAD is very protective against inflammation and hyper inflammation, which can lead to death in a small number of people, but also it can backfire. There's a study that showed that if you block NAD synthesis, you can actually improve things. So it's a confusing. So the bottom line, Dave and everyone listening is, I'm still taking resveratrol in my NMN. I believe that that is probably helping my health. But I think if you're not taking anything like that and you have any concerns about it, it's not worth the risk right now.

Dave Asprey:

Okay. I get a lot of questions from people, and I do my very best to answer them just in the comments thread on Instagram and all, about saying, "Look, Dave it's great that your kids are taking 16 pills a day." Yes, my 10 year old's taking 16 pills in the morning, and he's happy after the first 10. Or up to the first 10, after that he's a little pissed. But whatever. So the question is if I only have a small amount of money, give me a stack ranked. Like what are the most important and cheapest ones? A D3 clearly has to be there, because it's dirt cheap and it's pretty darn effective. And if I'm wrong, they'll tell me. What else is on your short list of affordable things that almost everyone can afford?

David Sinclair:

All right, so the full list is in my book, page 304, because I'm going to forget some stuff. So my morning routine is the following. And it's all cheap. What am I taking that's expensive? Probably the NAD booster is the most-

Dave Asprey:

Yeah, that stuff's expensive.

David Sinclair:

Yeah, but normally, so I'd wake up in the morning. I have one or two little spoonfuls of homemade yogurt that I think is good for my microbiome. I mix into that a teaspoon full of resveratrol, which is very cheap, so the resveratrol is good. I will maybe take some Quercetin, or some Quercetin some people call it. For a couple of reasons, one is it seems to also inhibit viral replication.

Dave Asprey:

It seems pretty promising. What kind of dose of course is that?

David Sinclair:

I take 500 milligram capsules. Sometimes I take two of them. It depends on how I'm actually feeling. I know my body well enough that I can change things. So Quercetin's good. And it also increases the half-life of resveratrol. Yeah, the resveratrol half-life is greater when you take Quercetin.

Dave Asprey:

Okay. I've seen some studies around Quercetin viral stuff, and my protocol right now is I'm doing 600 milligrams. I'm doing it either two or three times a day, and I'm doing the same for my wife and kids. My kids are a hundred pounds, so I'm treating them like adults from that perspective. Relatively high dose. Only for this time, for this next three months or something until it's more summer and we have more natural immunity, until we're past whatever the potential risks are. I think it's affects with vitamin C are also pretty strong. And speaking of vitamin C, what's your take on vitamin C?

David Sinclair:

Yeah, so vitamin C is the next on the list. So I take a liposomal, or a liposomal vitamin C. I think that it's not going to hurt. I think I'd take just 500 milligrams, which is a moderate dose. But there's a lot of evidence that it can help your immunity. So I've started taking it more recently.

Dave Asprey:

Right. I've been a huge fan for many years because my original mentors were all orthomolecular physicians, what we used to call functional medicine before it had that name, of the Linus Pauling lineage. "90 grams a day of vitamin C will keep the doctor away," kind of thing. And mega dose vitamin C drips and all that. The evidence is pretty strong. But, for the mega dosing protocols that have been used for helping all the viruses, where you take it to bowel tolerance, where you just keep taking it until you get the runs, and then you back off a little bit and you do that for three or four days while you're recovering. This has been used for a long time, there's some pretty good evidence there. You can't do it with liposomal C. So I love the daily liposomal C, but you'd get so much fat to get 20 grams of vitamin C in your body that you'll literally be pooping liposomes and you wouldn't be absorbing it. And that's gross. It's much worse than the vitamin C poops.

Dave Asprey:

So you've got to have some straight ascorbic acid, which by the way, if you buy a pound of ascorbic acid powder, almost everyone can afford that. It's a little bit more expensive than flour, but it's not that expensive.

David Sinclair:

Okay.

Dave Asprey:

Okay.

David Sinclair:

Zinc is very cheap, and right now it's a good idea to take zinc. I'm taking 40 milligrams a day.

Dave Asprey:

40 milligrams, it's a pretty good dose. What flavor of zinc do you like?

David Sinclair:

Mine just tastes like chalk.

Dave Asprey:

No I mean like zinc gluconate, zinc oxide.

David Sinclair:

Oh. I have to go check on the container. It just says zinc on there. I didn't look at what type.

Dave Asprey:

Okay. I'm a fan of zinc orotate. That's what I put in the zinc copper formula that I did for Bulletproof, just because the orotates fit into the mitochondrial stack in a different way than most things. But there's zinc monomethionine, different flavors. I would say at this point, unless you're also dealing with some gut problems, almost any form of zinc is good, but zinc carnosine works really well for people to GI problems in a special way. But right now any zinc is better than no zinc. Okay. What about copper? Is that on your list?

David Sinclair:

No.

Dave Asprey:

Okay.

David Sinclair:

Should it be?

Dave Asprey:

The balance of zinc and copper can get out. But without copper testing, I tell most people to take low doses of copper if any, because half of us are copper toxic, the other half have too much zinc and we're imbalanced, and it's messy. So in my family I put some copper, but not as much as I did zinc so I could capture the biggest share of people who needed it. Okay.

David Sinclair:

Yeah, although there's something that I've added to my diet recently. There was a publication that came out since we last spoke that said that oleic acid is both an edible form of a CERT2, an activator, and is produced when we're fasting, when we're hungry. Our fat degradation produces oleic acid. And it works exactly, down to the molecular level, the same way resveratrol works, it binds to the CERT1 enzyme and activates it, this accelerator pedal. So I'm using more olive oil, fresh olive oil in my diet, just as dressing on salads. But I also, I researched this fairly extensively. I have a little capsule, gel cap, that has a whole bunch of different oils in it, but a very high level of oleic acid. And yeah, it seems to be very healthy when I looked at the effects of this molecule.

Dave Asprey:

Very cool. I actually haven't seen that one study, but there are other studies in one of my herbal manuals for viral and bacterial stuff, and they do talk about hydroxytyrosol, which is another major component of olive oil. And so I do, in my regular salad, it's half Brain Octane, half olive oil, vinegar, and then whatever other stuff I want to blend together, avocados and whatever else to make it. I put prebiotics in there too.

Dave Asprey:

I also take a hydroxytyrosol capsule, which has about a hundred bottles worth of olive oil in it. Sort of like the resveratrol of wine, but hydroxytyrosol is the resveratrol of olive oil, if that makes sense. Any thoughts on hydroxytyrosol? Or is that outside of your sphere of influence?

David Sinclair:

Yeah, that is outside. I'm going to now look it up.

Dave Asprey:

Okay. It's cool stuff. I put a little bit of it in. I think it's in my omega krill oil, if I remember right. I put a bunch of other stuff in there that isn't normal, but I'd have to go back and look at my ingredients to see. I know I've lobbied for it, but whether I got it past my regulatory people, I don't know.

David Sinclair:

Yeah, we could go all day. I'm taking alpha lipoic acid.

Dave Asprey:

How much? Me too.

David Sinclair:

It's a pretty large capsule. I'd have to check, but it's probably-

Dave Asprey:

500?

David Sinclair:

At least five. Yeah, it's about 500 I'd guess.

Dave Asprey:

Okay.

David Sinclair:

Yeah.

Dave Asprey:

Got it. So I'm doing ALA one gram morning and night for my body weight, I'm about 205 right now. My kids are getting it once a day, just in the morning. They didn't used to get it, but I've added it in recently.

David Sinclair:

Yeah, well it's actually, it seemed to be helpful for viral infections.

Dave Asprey:

Yeah.

David Sinclair:

I didn't realize that. Oh, and you know how ... I think a lot of people would have read it in the New York Times or elsewhere, the loss of smell is a potential symptom of Covid-19 and I looked up what's the cure, or what's the potential cure for that and it was alpha lipoic acid, which was great news because I was already taking it.

Dave Asprey:

Nice.

David Sinclair:

And I'll tell you very briefly why I started taking it. There was a scientist who's now unfortunately passed away, but his name is Denham Harman and he was known for the free radical theory of aging.

Dave Asprey:

Right. Famous guy.

David Sinclair:

And yeah, I managed to meet at least his family. He was in his nineties and at home when I visited, but his family let me in on a little secret, which was that Denham had been taking this alpha lipoic acid for years, most of his life, mostly thinking that it was an antioxidant. He worked until his early nineties, so I figured, well, if it didn't hurt him, what's the least it can-

Dave Asprey:

[inaudible 00:34:14] on the guinea pig, but it was a really smart guinea pig. I like that. What about ... within alpha lipoic acid there's the normal cheap stuff, there's also R alpha lipoic acid, which is racemic. The first guy to launch that came to be in, I want to say, 2000 before anyone knew what I was doing and we talked about launching something and then there's also potassium R alpha lipoic acid. Do you go for the fancy stuff or the cheap stuff?

David Sinclair:

Mine's the L, so just the bulk cheap stuff.

Dave Asprey:

The cheap stuff, okay. Cool.

David Sinclair:

Am I wasting my money?

Dave Asprey:

I don't think you're wasting your money, but there's more efficacy from the R versus S form. It's hard to know. How about inositol cystine? Do you do that one?

David Sinclair:

No, not regularly.

Dave Asprey:

Okay.

David Sinclair:

I've got so many things working on my mitochondria, I have to be careful.

Dave Asprey:

Right.

David Sinclair:

Speaking of which, I take CoQ10.

Dave Asprey:

How much? Good.

David Sinclair:

It looks like about a mil or a gram of it. It's a pretty big capsule that I take.

Dave Asprey:

It can't be a gram, I mean that's mega.

David Sinclair:

I could just quickly go next door in my bathroom, but it's a capsule. I mean it looks like-

Dave Asprey:

Well I do 400, but it's four big gel caps. That's usually about ... the most you'll find in any capsule that's mass available is about 300 milligrams if you're spending \$100 on a bottle.

David Sinclair:

Okay, well it's a large thing that I can barely get down my throat, whatever that is.

Dave Asprey:

Okay. It's probably between one and 300. You're taking one of those?

David Sinclair:

Yeah, just one. I've done that for a decade.

Dave Asprey:

That's so smart. CoQ10 is just table stakes for mitochondria, from my perspective.

David Sinclair:

Yeah. And I'm often criticized for taking a statin.

Dave Asprey:

You're a bad person. You took a pharmaceutical drug.

David Sinclair:

I did. And there's some evidence that there can be side effects, but I've got to take it. My medical history says that I'm going to have a short life if I don't take one of these things. I'm on a mega dose of statins and I think most people know that you've got to balance that with CoQ10 and so on.

Dave Asprey:

You're wise to do that. And look, if you look at the data, there's a risk reward for every single substance that you might possibly use, including statins. And if for you, individually, the ROI is there, you take it. And there are people that say, "I will never take any pharmaceutical drug. Your lame." And even, "All vaccines are evil." There are cases where vaccines can cause some harm, but there are also some cases where the risk reward is probably worth it for you.

Dave Asprey:

Question on vaccines, doctor. Are we done with our supplements? Are there more supplements? Then I want to go into Covid vaccines, because that's going to be fun with you.

David Sinclair:

Let's do that.

Dave Asprey:

Go into vaccines? All right.

David Sinclair:

Sure.

Dave Asprey:

So people are saying how we're going to have a vaccine soon. I did a video on vaccines where I talked about the amount of time it took to come out with vaccines, going back to swine flu and H1N1 and all the different ones and how we have an almost perfect exponential improvement in the amount of time it takes to bring a vaccine to the final phase of regulatory approval. So in other words, our scientists are getting better at making these vaccines. So are you hopeful that we're going to have one? Is it going to work? Is it going to be like a flu vaccine, you're supposed to take it every year if you decide it's worth the trouble? Where are we on this?

David Sinclair:

All right, so here's my take, having talked to a number of experts on this. The Chinese are ahead of us, China is ahead of the US, so they had a few months head start. And they can also go quicker, they have less bureaucracy.

Dave Asprey:

And human testing whenever they want it. It's great over there.

David Sinclair:

Right? So my-

Dave Asprey:

You agreed with that, David. You're supposed to say no.

David Sinclair:

It's true, it's true. But it may help the whole planet.

Dave Asprey:

Agreed.

David Sinclair:

I've been super impressed with China and the Chinese population helping us with knowledge.

Dave Asprey:

It's pretty cool actually.

David Sinclair:

It's really good. Anyone who says that this is a Wuhan virus and puts down the Chinese, it makes me really ...

Dave Asprey:

It's unacceptable.

David Sinclair:

Yeah. So getting back to the vaccines, I think that it's true, it's going to probably be 18 months before something is approved for wide use in the US. Now if the Chinese tests go fast and they find that it's

safe, then I'm hopeful that we'll be able to use their technology or they'll start selling us vaccines. We'll be probably desperate enough that we'll take that on. That is at least 12 months, right? So that's the minimum. Most likely, if we depend on American companies, it's going to be 18 months. So why is that?

Dave Asprey:

FDA?

David Sinclair:

Now there were some great technologies. Well, we'll get to that. There are great technologies. Moderna has new technology, they started their clinical trial exactly a month ago, but you need to go through various phases. It's not like you just inject 10 people and if they don't get sick you're done with it, there's multiple phases. And even though I'm sure the FDA is trying to do their best, they are aware that vaccines can backfire. And I'm not talking about the usual stuff that people worry about with vaccines, the aluminum and all of the other stuff.

Dave Asprey:

Is that all bunk by the way?

David Sinclair:

Yeah.

Dave Asprey:

Even the aluminum side?

David Sinclair:

Yeah.

Dave Asprey:

Okay. I'm very interested in your take on that. I'm not going to take you off track here because it'll just create huge tribalism and anger there.

David Sinclair:

Yeah, I'm going to have hate mail, but I'm a scientist. I have to tell you the facts.

Dave Asprey:

I will absolutely listen to what you're saying here. I will take more convincing that aluminum isn't a problem, but also it drives me nuts when people like, "Oh, vaccines are bad." I'm like, "You know what? That's like saying all liquids are bad. Could you tell me which vaccine for which human being at what risk level? And then we'll talk otherwise. STFU." That's probably ...

David Sinclair:

Well that's fair. We're saying hundreds of thousands of people potentially die, now is not the time to complain about vaccines. They are our main savior.

Dave Asprey:

Okay. What about-

David Sinclair:

By the way, Dave, on the aluminum itself, the group that published that aluminum was correlated with Alzheimer's disease was debunked. The aluminum was actually coming from [inaudible 00:40:29].

Dave Asprey:

It's not actually correlated with Alzheimer's disease. There was a big piece done with almost a hundred different references about the effects of aluminum systemically on neurological inflammation and all these other things. That was the one that was ... it was done maybe 10 years after the aluminum Alzheimer's thing. That got me thinking about it. But I remain open minded and questioning and I wouldn't take the Covid-19 vaccine along with every other vaccine that's been made all at the same time, because I think that might cause harm.

David Sinclair:

Yeah, I can say something on that. So it is true that if you have multiple vaccines with the same virus or the same protein over a couple of years, even three years, it's been shown you can have a slightly less response, but we're not going to be taking the same vaccine, right? And we're not going to be taking them all at the same time like you said. And so I think people are generally looking for any chink in the armor. And there are small things like that, but that doesn't mean that we shouldn't try to save the entire planet right now with vaccines.

Dave Asprey:

Okay. I'm actually in agreement with you there. Look, if we could do it with lasers from space, I would look at that too. It doesn't matter. Show me a tech that works and I'm going to go for it.

David Sinclair:

Yeah. So the 18 month timeline, the reason that it's probably going to take that long is that the FDA has been very careful. There was a monkey study done with the SARS one and there was a vaccine that was directed also at the spike protein. That is how the current vaccines are being developed for the most part. Those monkeys actually did worse, it triggered the immune system to overreact it's believed. So it's not just a matter of "Oh, let's make this and give it to people and hope for the best." The government wouldn't allow that because millions, hundreds of millions of people are going to be vaccinated. If you think about it, all of humanity is probably going to be vaccinated if you haven't had it before.

Dave Asprey:

Okay, so all of us are going to be vaccinated if you haven't had it before. That brings us to natural immunity and this is something that's been pretty controversial. I've said it on a couple other podcasts, but I want to get your take as a researcher on this. I live on 32 acres. I can self-isolate like no-one's business. I've got enough bacon walking around in the backyard to last me for years, so truly self-sufficient. If I could get coronavirus now, being a healthy human being with lots of resources on site, very unlikely to clog up a hospital. If I could get it and have natural immunity, which would let me go out into my community and help older people shop and carry groceries to the hospital, whatever, I could do more than I'm doing now. I feel like it would almost be the right decision to be one of the people with

natural immunity, because it's a superpower right now. There have to be other people thinking about that. Is that good thinking or bad thinking?

David Sinclair:

That's really dangerous. Especially for you and me, I think we're roughly the same ages. Now we're both very healthy, we do our best, but there's still a reasonable non-zero chance that we will either clog up a hospital bed when others need it or we will die. And there's a third thing you have to really be careful about and that is that, if the body overreacts to your virus, let's give it a 5% chance that's going to happen, you might have long lasting damage to your lungs and to your heart. There's fibrosis that builds up in these cases and a lot of doctors, including Peter Attia, who's been great about educating people, we're really worried that five, 10 years from now, people will have these issues with their organs. So it's not like, oh, you just get it, you get it over and done with and then you just become Superman.

Dave Asprey:

I definitely understand there's small percentages and also those percentages are for people who smoke and do average things. And there's also, okay, if you're mega dosing CoQ10 are you going to get cardiac problems from this? The odds go down. If you have intravenous vitamin C in the refrigerator behind you, the odds of having problems go down. If you have inhalable lung steroids for inflammation on hand, which are downstairs, the odds of this go down. You have ozone therapy sitting right next to your desk, the odds of this go down. I kind feel like I can handle my shit.

David Sinclair:

I know, you're bulletproof.

Dave Asprey:

It's just like, can I bring the odds low enough that, all right, I took the hit and now I can go do good things. I mean, even under those circumstances, you think our risk is so high just because of age? I mean, you're a healthy guy.

David Sinclair:

Yeah. Well is the risk worth it?

Dave Asprey:

Yeah.

David Sinclair:

We don't get a second chance at this.

Dave Asprey:

Then again, do you believe the estimates that 50 to 70% of us are going to get this anyway?

David Sinclair:

I do. I do.

Dave Asprey:

So if you got it now, you handled it well and then you could go help other people not die from it, wouldn't that be the moral choice?

David Sinclair:

Oh, I see where you're going. You're willing to take the risk.

Dave Asprey:

Yeah.

David Sinclair:

Yeah, I mean there's something about that, but what I don't want to do is encourage young people to just go out and party.

Dave Asprey:

No, that's not what I'm saying. They will probably, some of them will die, because the ones who really want to go out and party are probably the ones who think they're healthy young people and they're not. Oh, and alcohol? Good God. Don't drink during this time. That's probably a dumb decision, at least that's my opinion. Do you agree?

David Sinclair:

No.

Dave Asprey:

You actually think drinking alcohol is good for-

David Sinclair:

It's not good for you, but I find that having a glass of red wine with my family is fine.

Dave Asprey:

Even just from a general immunity perspective. Do you have any research backing this up? Or are you just that it enhances your GABA receptor so you can chill at night?

David Sinclair:

It's a glass of red wine. It's not hard alcohol and I don't drink a lot, but it does allow me to relax with my family and it's a social thing as well. And I don't think one glass of wine a day is going to be a problem.

Dave Asprey:

So it's kind of like a half a Valium or something. It just kind of helps.

David Sinclair:

It does. I'm a pretty active, stressed out, ADHD kind of guy.

Dave Asprey:

Your brain goes really fast. And that's a compliment. I mean you're a brilliant guy. I see how you assemble things and how rapidly you do it and sometimes turning your brain off ... it's work, I'm with you there. Okay. Cannabis, good, bad?

David Sinclair:

Well I know that the dispensaries are all open in Massachusetts.

Dave Asprey:

And California.

David Sinclair:

It's essential medicine.

Dave Asprey:

Do you know why they're essential though?

David Sinclair:

No.

Dave Asprey:

They're essential because when they said they were going to get shut down, everyone on Earth went and got in line and started spreading the virus, so they said, "We're going to keep them open so people will respect social distancing so they can go buy their pot." I'm not even kidding.

David Sinclair:

Oh, no, I didn't know that. Yeah. I don't see major health benefits. I'm not keen on ... or major health issues. I'm not keen on putting anything particulate in our lungs.

Dave Asprey:

So smoking, that's a bad idea. Vaping is a bad idea right now. But okay, you can still eat it or patches or whatever.

David Sinclair:

Yeah. Yeah. I don't do it myself, but I have no knowledge of any downsides.

Dave Asprey:

How about CBD oil activating endo-cannabinoid receptors to modulate inflammation? Is there's some usefulness there? Should I prophylactically hit myself with some THC free CBD just in case?

David Sinclair:

Well yeah, potentially.

Dave Asprey:

Yeah, I'd put it on the maybe list. If you have a bunch at home, do it. It's not on my list of must-haves. Low dose naltrexone?

David Sinclair:

I don't know.

Dave Asprey:

Don't know. Okay. Again ...

David Sinclair:

I don't know.

Dave Asprey:

Don't know. Again, no evidence for viruses, but for modulating inflammation, if you're one of the people who it already works for autoimmunity, managing autoimmunity seems like a good idea. I mean it's in my anti-aging perspectives in my book. It's one of those things I don't know either, but it's probably not a bad thing, but I wouldn't go seek it out right now. What else is on your list?

David Sinclair:

Well, so CBD is ... CBD oil is good for relaxing, going to sleep. So if you have sleep problems, let's talk about sleep. I think that's a lot ... on a lot of people's minds. So I ... do you sell sleep remedies?

Dave Asprey:

Yes. I have a sleep mode and I make the glasses, the true dark glasses are patented for sleep, but you can pitch whatever you want as long as it works. I ... this is not about selling, this is about informing. The show's always been about informing. I talk about other vitamin companies whenever they make good stuff that I don't make. So tell me what you've got.

David Sinclair:

So I use your glasses. I prescribe those to people.

Dave Asprey:

Thank you.

David Sinclair:

Yeah, but so I've ... no, they're great. I wouldn't, no ... I would wear them every night. I would recommend that. So anyway, getting back to the product, I just started trying something and I'd be interested if you have something similar, it's called Dr. Parsley's Night remedy and it's been working really well.

Dave Asprey:

I know Kirk Parsley, he's a friend. The ... it does work well. But last time I checked the formula, he had something called phenyl-GABA in it and I used to use phenyl-GABA in something called GABA Wave, as a very early Bulletproof product. But phenyl-GABA is a great market, non-FDA approved. They consider it

to be a drug and when you add a phenyl group to a GABA, the GABA becomes much more bioavailable, but it sticks around for a long time. And then when you have phenyl-GABA that sticks around for a long time it has addictive properties and has a 36 hour half-life in the body.

Dave Asprey:

So anything with phenyl-GABA is going to make you sleep really well almost as well as GHB. It's one step removed and GHB is great for sleep if you could get it. It's just an illegal street drug now even though it used to be a sleep supplement. So what I would say, if you're going to take anything that contains phenyl-GABA is you need to space it out every other day and do not ramp up your dosage because you might not like what happens.

David Sinclair:

Good advice. And I ... it tastes very sweet. I have to make sure that there's no [crosstalk 00:50:24].

Dave Asprey:

I don't think he would do that. It's been a while since we hung out. But no, I like Kirk, maybe seal sleep doctor types tend to be into things. So he's cool. All right. Anything else you do for sleep or for supplements? And then I want to, let's see, and then I want to ask you two more questions and then we're going to go into our Instagram sharing session.

David Sinclair:

Well Gee, we've covered a lot of supplements, we've filled a whole bucket with them.

Dave Asprey:

We did. And we could ... Oh, let's talk about testing really quick. A big thing that's happening is people are ... they're using PCR testing, which is where you take the DNA and you amplify it many times. And then you see what's there. And there's also antibody testing and there's also direct virus testing. How ... do you have concerns about different kinds of testing, about availability, about reliability? Just kind of walk me through the testing universe that you're aware of for Covid and where we are and where you think we're going to be.

David Sinclair:

Well, the US really screwed up, the CDC that the tests were not reliable and a lot of scientists were angry about that because it was a fairly simple mistake as far as we can tell, bad design of the primers. And it wasn't detected till a few weeks after the test had come out. So that's the main thing. So what I've been doing in my small capacity is reaching out across the planet to see who needs kits. And I can tell you there's a lot of desperate people out in the world, companies and hospitals and then connecting them to our manufacturers, including a very large ... the largest genetics company in China who's making these things by the hundreds of thousands, eventually millions.

David Sinclair:

So there are three types of tests. The one that most people are using is what you said, the PCR, the preliminaries chain reaction test, which is a DNA amplification test. You turn the RNA in the virus into DNA and then you amplify it. You get a signal and it gives you an idea of how much virus there is and

also whether it's present. It doesn't tell you what strain of virus it is. You don't know which mutations are in there, but it's the most reliable one that is out there.

Dave Asprey:

How do people get that one? How much does it cost?

David Sinclair:

Well, you cannot get it.

Dave Asprey:

You look in the mirror and if you have a fever, you have Covid, there's your test.

David Sinclair:

Yeah, there are home tests. I have one here in my home, but I ... well first of all, I'll tell you the test. It's ... it detects antibodies that you've made to the virus and it can detect it within about 15 minutes. It's like a pregnancy test, you put a drop of blood or serum on there. And, but what I heard was that these home tests, and I have to verify this because I find it hard to believe is that the FDA has banned the use of testing at home, which would be really bad news. And I think [crosstalk 00:53:32]-

Dave Asprey:

How were they even allowed to do that? My body, my biology, my rights, what jurisdiction do they have over my blood? If you actually did ban that, this is a fundamental human right. You don't have a right to my information. And if I want to get a bogus test from some weird astrologer person, it's my right to do that. And I would appreciate your validation of the tests that I do buy and I will buy the tests you validate, but do not block me from doing things that I choose to do. That's nasty.

David Sinclair:

But Dave, you're not qualified.

Dave Asprey:

Absolutely. Take my license right now.

David Sinclair:

Well, you can. I thought you meant on the average person though.

Dave Asprey:

Oh, I see what you're saying. I was like, I have no medical license. I'm not a doctor, right? But the fundamental human freedom here is that, no, I'm not qualified. But when it comes down to, hey, I would like to know what's going on my body, if I want a genetic test, I shouldn't need a permission slip for it. But it should come with a big sticker that says, the FDA either doesn't ... hasn't validated this test or thinks it's a bunch of crap, but hey, I'm allowed to buy popcorn that isn't very good for me, so why shouldn't I be able to buy a test that doesn't work? They're regulated by the same agency, so.

David Sinclair:

Right. If you can smoke, then that's far worse for you. Then the third type of test is the DNA sequencing, which gives you every letter in the 30000 letters in the genome, the virus. That's the most accurate, it gives you beautiful data, tells you exactly where the virus is coming from, the strain, the mutations in it. But that takes overnight to do and it's a few hundred bucks per test, but that is the best test and I think eventually when we do an autopsy of what's happened across the planet, those type of tests will be important.

David Sinclair:

Actually, what's really interesting is you can go to a website called next strain.org and look at the evolution of the virus across the planet and in almost real time and you can see the mutations that are popping up every few days and now the question is are those mutations bad or good for the virus and inversely for us? We don't know yet, mostly they're benign, they don't make a difference, but there is a small risk that it'll make the virus immune to our vaccine so to speak. Or it could even become more lethal. So I'm following that closely.

Dave Asprey:

I'm ... I have not ordered any test kits. I do have because of the relationships, I probably have similar ones to what you have. I do have access to be able to order a variety of either antibody tests or the PCR tests. I'd rather those go to health providers. I don't think that I need them for my family. If we get a sniffle we'll just deal with it. We're isolated. Like it's okay.

David Sinclair:

David, it's good news if you get a sniffle because it's probably not Covid-19.

Dave Asprey:

Exactly. Right. And even if we had some of the minor things, if it was not getting worse. No, but I think hoarding test kits or having them just in case, so that you can be ... what are you going to do? If you're sitting at home and you test positive, either you're not going to need to go to the hospital or you're going to need to go to the hospital. And if you're at home and you don't test positive, either you're going to have to go to the hospital or not go to the hospital if it's just the flu or just anything else.

Dave Asprey:

So, in terms of actionable stuff for you, you already should be self-isolating. So I mean do we need test kits? Unless, we can widely distribute them. In which case, of course we need them so we can map the out. But until then, I mean, should we only reserve them for high risk people?

David Sinclair:

I agree. I think that it's the same for chloroquine or plaquenil as it's known. Right now the doctors that are, that I know that are on these ... on the front lines, as we say, it's desperate times, and we need to keep them healthy. Otherwise, we're all in trouble.

Dave Asprey:

I have one more question for you, but what I think we should do is let's get onto Instagram. I'm going to ask you this question on Instagram, on the dave.asprey channel. So I'm going to go on Instagram first. We're going to stay on videos. Stay on audio here so people can hear me ask the question and they can

hear your answer to it. And so if you're listening to this on iTunes or something, if you follow me, dave.asprey at the end, whenever I'm recording a live show, I'm going to do an Instagram with guests going forward because it's pretty cool. Just put them on my Instagram stories. So give me one second to start a story here.

Dave Asprey:

All right, here we go. Hey guys. Thank you for joining. David Sinclair is coming on board right now. I'm going to get him to join as soon as he requests to join the live. I've got him on the podcast. We just finished an Epic podcast. I mean it was really good. I'm going to put this out as soon as humanly possible and this is a guy who's actively working at Harvard as a researcher on how we're going to live way longer than we're supposed to and the author of Lifespan.

Dave Asprey:

And you're going to get to ask him questions after I get my first question for him, which is going to be the last question that you hear in the interview when you listen to the whole interview on Bulletproof Radio. There we go. I see your request, David and David Sinclair, PhD added. All right, good deal. So my question for you, and if you're just joining, hi guys, this is David Sinclair, Harvard researcher, author of Lifespan. And one of the really brilliant superhuman researchers out there, the guy behind NAD and NMN and nicotinamide riboside and all that kind of stuff. So first off, welcome to the Instagram live. Now I'm going to ask you this big question.

Dave Asprey:

You're supposed to say, hey, thanks Dave.

David Sinclair:

Hey, thanks Dave. Tell me what to say Dave.

Dave Asprey:

That works. All right guys. We're really ... we're rocking this, the DOB, we're all going to die, right? None of that crap. All right. Here's my big question for you to cap off our interview on Bulletproof Radio, your general outlook on the virus, what's this going to do to humanity from an immune perspective, from a societal perspective, I mean you've spent three weeks going really deep on the virus, looking at what it does, looking at how it's affecting populations. Where are you now?

David Sinclair:

Well, it's like, as I kept telling my wife, Sandra, the kids are not going back to school anytime soon. Most experts I talked to who actually understand epidemiology think that we're not going to go back to normal as a society probably for another year. We will go back to work just like China. So don't panic about that, the economy is going to get back on its feet hopefully soon. But life will not be the same for probably a year, maybe even two.

David Sinclair:

The virus is not going to go away by itself. Either we ... half of us have to catch it or we need a vaccine, which maybe will come from China in the next 12 to 18 months, or one of the US companies will succeed in about 18 months or longer. And we're just hopeful that one of them is going to succeed. But I

think that for humanity, there's ... it's not all doom and gloom. What makes me proud of humanity is that if you think about all of the history of life on earth, going back, unless you believe in creation, it goes back at least three and a half, maybe four billion years. That's a long time, right? And this is the first time ever that a species that's all over the world has United to fight one foe.

Dave Asprey:

So I've got to tell you, if you're listening to the show and you think the show is worth your time, there's a couple of things you do. Number one, go to iTunes and rank the show. Give it some stars if you like it. Number two, go out there and support David, his research, his work in the world, read Lifespan. Number three, do the same thing for Superhuman because the stuff in those books is going to help you be resilient whether or not there's a pandemic, whether or not you're locked away at home. So now's your time to read, to learn, and to take action on making yourself superhuman so that you'll have a longer life span.

Dave Asprey:

See what I did there? And you'll actually be able to weather whatever life brings you, even if it's some stupid virus. On that note, stay Bulletproof. See you next episode.