

Hacking the 'Middle-Age Spread' – Interventions With Dave – David Hinds – #1038

Dave Asprey:

You're listening to The Human Upgrade with Dave Asprey. This is one of my favorite kinds of editions or episodes, whatever you want to call it, because this is an intervention. What that means is I take a member of the Upgrade Collective. This is my membership, my mentorship group, the community that supports the biohacking work, and I sit down and we talk about how to hack something, how to improve it.

And we are going to look at some medical lab testing stuff. I am not a doctor. I don't play one on the internet, but I do lecture doctors at the American Academy of Antiaging Medicine, and I know a thing or two about systems biology. So nothing in here is medical advice for our intervention or for you, but it's questions to ask your doctor. It's things to try so that you are in control of your own biology.

And we're going to go through what he's doing, what he's experiencing, what his goals are, and maybe how we could think about approaching the problem differently. You're going to learn a lot. And today you're going to learn a lot about stubborn gut issues and weight loss in a middle-aged guy. Here we go.

David Hinds, welcome to your intervention. Where are you from? Tell me about yourself.

David Hinds:

Thanks, Dave. Yeah, so I am from Brisbane, Australia. 51 years of age and I've been on the biohacking journey, if you like, for I guess just over two years now, maybe coming up three. And needless to say, like anything, if you take the time, it's made some profound changes to my life and certainly for the better.

Dave:

Nice.

David:

This is a good opportunity and I thank you for taking the time because I'm at a point where this is about tweaking now. This is about just getting to the next level and tweaking what's not seemingly working for me.

Dave:

Are you generally pretty happy with your life, your energy? What are the areas that you're paying extra attention to?

David:

So yeah, I am. I mean, typical week I exercise, I get up and we do a bootcamp thing. I travel a lot for work, so it's not a regime that I follow strictly because you can't always do it. But I'm pretty healthy. And I do watch what I eat. But I also, I'm not regimented in the fact that I don't just go, "Oh, I can't eat that, or I can't do that." I'm very, "No, no, no. I feel like that, I'm going to have it." I don't deny myself, but I'm also, what I've learned in the last, especially the last six to nine months, it's been very... It's really, I've noticed it quite a lot in that one of my Achilles heels is bakeries. I've got a sweet tooth and I've always had one. And I can walk into a bakery and my first monkey brain instinct is just give me one of everything. I just love everything in here.

But then I'll buy something and I'll eat it and I'll get halfway through it. And I just realize I don't really enjoy this as much as I used to. I mean, it doesn't stop me buying it necessarily, but it stops me... I very much think about it next time. And I think that's because I've definitely changed my palate. Just from changing from a lot of sweet junk crap to healthy fats, much more vegetables and just a completely different way of eating. I find I don't get hungry. And so for the most part, yeah, life is really good. It's just at my age and I notice it with a lot of friends. We've got this kind of, I'm sitting here now grabbing hold of a handful of muffin top, whatever you want to call it, and exercising, eating, nothing seems to move it. I'm 51-

Dave:

And you're about 50, right?

David:

51. Yeah.

Dave:

51. All right. And you've got some muffin top. How many kilos would you like to lose?

David:

I would probably say maybe only a couple. I mean, to me it's not about the weight. I mean, I'm not overweight. It's just that when you stand there and I look at myself in the mirror without a shirt on, it's noticeable, but it's not huge. I don't feel like I'm overweight.

Dave:

So it's all on the gut in the front pretty much.

David:

Yeah, that middle-aged spread.

Dave:

So let's talk about that. And most middle-aged people who have that, there's a couple things that are going on. One is testosterone drops, which makes you put on more fat, which makes you make more estrogen because fat does that and then it's kind of a self-defeating cycle. You also tend to get a reduction in thyroid, which means, okay, thyroid controls how much heat your body makes from your food, and if it makes less heat, it stores more fat. So those are both really common things that you can almost predict. Those put subcutaneous fat everywhere. And one of the guys who taught me a lot is Charles Poliquin. Charles helped more than 200 Olympic athletes medal and is, I would call one of the first generation biohackers before biohacking had a name. He was on the show, he was a personal friend. In fact, I dedicated one of my books to him when he passed.

And what he determined and what I believe, and this still makes a lot of fitness trainers very upset because, well, a lot of them aren't hormone experts. He said, "Look, the pattern of fat deposition on the body indicates where it's coming from." And belly fat, especially in the front quite often is in excess of cortisol. So the first thing we do is say, "Well, what do we know about your cortisol? Do you have a lot of cortisol?" And you have any other symptoms? Before we get into just the fat. I mean, how's your energy level? How's your sleep? How's sex drive? Are all those good?

David:

No, not really. Sleep is something that I'm very conscious of and have been for a while. I have the Oura Ring, I've had it for over 18 months now. My deep sleep, no matter what I do, is rubbish. Has been-

Dave:

What does rubbish mean to you? Like five minutes or an hour?

David:

Oh no. If I get 20 minutes some maybe once a week, I'm lucky. Usually it's very low. It's in the single digit minutes.

Dave:

So that would give you some stress. That's probably a big part of it. So we've got a deep sleep problem.

David:

Yep.

Dave:

All right. What about sex drive, morning kickstands, all that kind of stuff?

David:

Gone, mate. Yeah, it's definitely gone south compared to when I was in my forties. So there's definitely a change there

Dave:

Was it all of a sudden or was it just gradual?

David:

It kind of feels to me like it was all of a sudden. Maybe not overnight, but certainly in a very short space of time in the last two to three years.

Dave:

Welcome to man-o-pause. It actually does happen to men where you're right around 50, some kind of hormonal things get switched off and you can switch them back on with the right hormones and biological stuff. So basically your energy levels sound like they're okay though, but what you're dealing with is more weight than you want. You've got gas bloating, which is probably contributing to the weight and you've got low-quality sleep, which kind of makes everything worse. All right-

David:

But my REM sleep is really good on top of that as well.

Dave:

Okay, so you're dreaming a lot. That's at least really good. That helps with your brain function, energy levels quite a lot. You also take a lot of supplements. You've got your Omegas, your Curcumin, you're

taking Timeline, which is an NAD booster, and you're taking mitochondrial things and zinc and copper and vitamin A, D, K. And even enzymes called MassZymes from our friends at BiOptimizers. You're taking spermidineLIFE and P3-OM, which is a bacteria that crowds out other bad bacteria.

Now I'm going to ask you and... We also have activated charcoal, gluten guard, and you're taking the Life Cykel Australian mushroom extracts, which work really well, including Turkey tail. That's good for your gut. So you're doing more than most listeners, I would say that. Not everyone has that complete list, which is really good. What I'm going to first ask you about here, is it possible that any of the probiotics you're taking are making the problem worse or better? Have you ever trialed that?

David:

Yep, I sure have. And it definitely wasn't helping. And to be honest, what I have discovered in the last few weeks is stopped taking them about, in fact, I stopped pretty much everything for two weeks about maybe six weeks ago, and then I got sick with just a flu. But-

Dave:

That happens when you quit taking your supplements.

David:

Yeah. And so I've actually narrowed down and I kind of feel like where I'm at now and I'm just looking at them now, what I've got now is working really well. And really, again, not every day, but most days it's vitamin C, it's A, D, K, it's zinc and copper. I mean we're in middle of winter here, so flu season, blah, blah. And I've got Qualia Mind and Qualia Night, which I've noticed a little bit of improvement from, but nothing groundbreaking.

But I stopped taking all the MassZymes and any other digestive enzymes, and I bought myself a bottle of Metamucil and it's been a game changer. I don't know why, maybe you do. But it is as simple as just going to the supermarket. Metamucil in a bit of water. In fact, I've been mixing it with my Athletic Greens every morning and taking it. It's made a big difference to the bloating and the gas.

Dave:

Interesting. So there's definitely some kind of bacterial overgrowth. And you mentioned you're taking a greens product. I would consider pausing the greens products from any company. I'm not at all trying to pick on one or the other. I've had a few clients over the years who are having an afternoon dip in energy or weird inflammation. And the problem with the greens products is that they're good for you if all of the ingredients agree with you. But if one of the ingredients doesn't agree with your biology or does something bad to your gut and you're taking it every day, you kind of never get to recover.

So I found that diversity in a lot of them, or just the abundance of powdered kale and spinach was maybe not a positive thing for people with a sensitive gut. So you just want to see whether that's good or bad. And the fact that Metamucil, which is a mix of soluble fiber and primarily insoluble fiber, the fact that that's helping it binds a lot of toxins. So you probably have some SIBO going on is a good theory here. SIBO is small intestine bacteria overgrowth. And this is surprisingly common and it's one thing that causes gas and bloating after particularly brassica vegetables, which you do. Have you ever been tested for it?

David:

No. I have not.

Dave:

Okay. There's kind of three ways of testing for SIBO and it's abundantly common and people have your kind of symptoms. Although quite often Metamucil can make it worse, not better, but that's not predictive. The easiest one is a breath test. You breathe into a little device at the doctor's office and you don't want to be taking antibiotics or probiotics before you do it because they could change it and you don't take any fiber before you do it. So it's kind of a delicate thing. And the test isn't that reliable, but it's relatively easy. There's the gold standard, which means you have to have an endoscopy or they stick a camera down your upper GI tract. Screw that.

So the other one you could do, which is actually my favorite is you could try taking something that knocks down bacteria and see if it gets better. The most common thing is actually a relatively harmless antibiotic called Rifaximin, R-I-F-A-X-I-M-I-N. And this is a weird antibiotic because as you know, I'm not a huge fan of those. I was on antibiotics for 15 years every month because of sinus infections and all that's really bad for your gut bacteria. What Rifaximin does is it only kills bacteria in your gut. It doesn't enter the body systemically. So it's got that benefit and it definitely works for SIBO.

If you don't want to do that. I'm just saying that sometimes it's worth it. I've had SIBO, it's terrible. I had it for years actually before we figured out what it was. So what you'd want to do there is either that or you can do grapefruit seed extract plus three times a day oil of oregano capsules, and sometimes in about four to six weeks that can knock it out. But for what you've got going on three times a day, oil of oregano capsules could just be really, really helpful but definitely check with your healthcare team about that.

David:

Okay.

Dave:

So SIBOs a potential for what's going on there. I actually like the idea of taking your digestive enzymes. And what I find with probiotics is that by and large, they're really good. The ones I've talked about on the show are particularly really good, but that doesn't mean that every probiotic is right for everyone all the time. And there are times if you've got SIBO, you might need to take nothing for a little while and then you repopulate with the right probiotics. Things like that do happen. So that's part of it.

When we talked about hypothesis for you. They said, okay, if you've got less desire, which is a result of lower quality sleep, you probably have high cortisol, which is a result of lower quality sleep and the cause of lower quality sleep. We would want to see if you have high cortisol. So let's look at your labs. And as I scroll around here. I am seeing... Let's see. They don't say when it was collected. I see your date time, 8:24 AM, your cortisol level is 286 nanomoles per liter.

And because this is Australia, God knows what units you use compared to the ones I think in. So the range for your cortisol is 150 to 700, you're at 286. You have low normal cortisol. It doesn't look like it's high cortisol unless you're having a cortisol spike at the wrong time of the day. And what you'd want to do to determine that is you'd want to say, "What if I got four cortisol tests per day and I did it with saliva?" So a 24 hour salivary cortisol test is going to be really important for you to figure out maybe your cortisol goes up at night. Do you go to bed easily?

David:

Yes, mostly. Yeah.

Dave:

What time do you go to sleep?

David:

Usually in bed by about 9, 9:30?

Dave:

Yep. You don't have nighttime cortisol problems. You could have all day long normal cortisol or low cortisol. I'm not seeing high cortisol in your life other than you got stuff in your gut. It looks more and more like a gut problem. Interesting. But maybe there's a testosterone problem. I thought it might be that or a thyroid problem. Let's look at that. So I'm going to go for your thyroid first because you have some numbers there and if you're listening to this, let's see. Have you gotten the point from these interventions that if you don't know your thyroid and your sex hormones, you're probably doing biohacking wrong?

David:

Yeah, that's kind of how it is.

Dave:

All right. By the way, your vitamin D is perfect. It's like 158 on a scale that goes up to 150. So that seems pretty good given the strange scales that you use there. I'm seeing you're at the low end of the range on B... Oh, no, you're not. Your B12 is relatively low, but your active B12 is high, so you're fine on that. Here's our thyroid. Your TSH is 0.78. TSH for listeners is how loud is the body yelling for thyroid hormone? Anything under one is pretty good. Sometimes it needs to go as low as 0.2 or 0.3, and 0.78 is generally pretty good. Under one is something that I find acceptable, but the range can go much higher. And TSH is just the first thing.

If it yells, is there a response? Well, the response to the yell is T4 and your body doesn't make a lot of T4. On a scale of 9 to 19, you make 11. So your body yells but not very loud, and your body doesn't make that much T4 because you didn't yell very loud. That's actually healthy and normal. But does the T4 turn into T3, which is useful. And what do you know? Yes, it does in your body. Your free T3 is at 5 on a scale that runs from 2.5 to 6. So you're at the high end of normal for free T3, which means you are making enough thyroid, all your steps work, and that's not the problem. Mystery deepens.

Maybe it's testosterone, right? So you're making enough energy, you don't have weight all over the place. So let's find your testosterone scores. With your testosterone. You're doing Australian units which are in nanomoles per liter and looks like picomoles per liter probably. So these are not my normal ways of thinking necessarily, but what I would notice here is that your testosterone is right in the middle of the range for where they think it should be, but your free testosterone is 500 and the range is greater than 200. So it looks like everything works.

Even something called SHBG, which is sex hormone binding globulin. It can stick to your testosterone, so it's not available. It's in the middle of the range. It's not a problem. So you're kind of a mystery. You make enough testosterone. In fact, you have healthy testosterone levels, but there's a sex drive issue. You're not binding up your testosterone, you're making enough energy. You don't have fat deposition patterns like someone with too much estrogen and you don't have too much estrogen.

So then we say, all right, let's look at your other things like LH and FSH. So this is something called luteinizing hormone. These are things that can be involved in libido and these are basically things that

cause sperm to develop and mature. And if you had problems with fertility, we'd be looking at those, but they're much less involved than other things. In fact, the only thing that's out of range in this panel is your prolactin levels, which are off the end of the high end of the chart, but only a little bit off the high end, but still that's interesting. Has your doctor said anything about prolactin to you?

David:

No. To be honest, it was a bit of a struggle to get all these tests done through the doctor, but I sweet talked him. He was a bit confused as to why somebody would want so many panel tests, but-

Dave:

Yeah, a very traditional... Like, "You're not bleeding. Have a phosphorus?" So I get it. Well, prolactin's a very interesting compound because you normally have it when you're pregnant or breastfeeding. Just double checking here. Do you identify as breastfeeding or anything?

David:

No, not doing either of those right now. No.

Dave:

Yeah, I didn't think so. Me either. So it comes from your pituitary gland and there's something called the HPA axis, which is hypothalamus pituitary adrenal. And this is a primary set of three things that work together to regulate your hormone levels and your stress response. And you don't have high cortisol that we can find. Your hormones are generally okay except prolactin. And prolactin also causes tissue laxity. It's unusual to have it this high in a guy. Just making sure. Are you taking any kind of drugs? Any like acid blockers, blood pressure, antidepressants, anything like that?

David:

Nothing. No.

Dave:

If you had high cortisol that could even cause this, but you have any of that and loss of libido is a symptom of having too much prolactin. So I would guess that of all the numbers I can see it's the only one that makes any sense that would account for that symptom that you're having and it probably wouldn't account for the gut stuff. The gut stuff is probably bacterial, but I would want to run a parasite test or see your Viome results to see if you've got some kind of Giardia or some other kind of parasite, not SIBO, but your odds are higher, then it's SIBO unless you like to drink out of rivers in the outback or something that I don't know about.

David:

Not so much.

Dave:

Why would there be a high level of this? It's pretty strange. Any man boob growing more than normal. Is that an Australian term male breast growth?

David:

Yeah, it is a man... Well, yeah, they're a man boob. I mean they're not, I don't know, is it-

Dave:

They're a little perkier than normal.

David:

They're there.

Dave:

It's like the most awkward conversation ever, "Show me your nipples." But you haven't seen changes. They haven't been tender or they haven't been a little bit bigger?

David:

No, no, no, no.

Dave:

All right. So that's one of the other things that could do it, but certainly loss of desire. Even ED can come about from this and sometimes pregnant women because of prolactin have a change in their vision. They can't see well. You shouldn't get a glasses prescription if you're pregnant because of prolactin relaxes even those, I think they're eye ligaments, but it relaxes something in the eye that can do that. So have you had vision changes by any chance? I don't think your levels are that high, but.

David:

That's interesting because yes, my vision was just deteriorated shockingly over the last two, three years, but certain I've noticed even more. I think it's a result of I got glasses and once you go down that rabbit hole never to be returned unless you intervene of course. And now I just, man, there are just things I cannot read without glasses and it does my head in. Thank God I've got kids with good healthy eyes because sometimes I'm like, "You read this for me." And I am seriously thinking about talking about LASIK surgery to see if I can reverse some of this. I don't know.

Dave:

LASIK is good for distance. I guess you can do a LASIK for up close in one eye, but just be really careful. LASIK causes dry eyes and night sensitivity and a lot of the eye experts I know no longer recommended because the side effects are much higher than originally talked about.

David:

Yeah, right. Enough of it.

Dave:

I had LASIK in 1997 and man it worked for about eight years before my eyes drifted. I had two years of really bad night vision and painful dry eyes. I still have dry eyes than normal, so it's not a free ride there. So just do your research and look at eye training. There's an intervention with Matt Bell that I recorded where we talk about eye training recently. That was pretty good.

David:

Yeah, I've heard it.

Dave:

There's an episode of the show with a woman from the UK who's really good at vision training. So I think there might be a medication to talk to your doctor about. And like I said, I'm not a doctor, but this is an interesting probably anti-aging and certainly cognitive-enhancing substance that also will give you your sex drive back and it's called Bromocriptine. It may also be known as Cabergoline. I don't know what they call it in your country, but the hormone itself is called Bromocriptine. And that drops prolactin. It's what the body makes to drop prolactin.

So given that people do buy it as a supplement and take it for the sexual side effects or just I think there's some cognitive effects, if I'm remembering right off the top of my head, I would have it in my stack of potential anti-aging and cognitive enhancing substances by itself. I would talk to your doctor and be like, "I don't like it. This number's high and you need to find out why it's high." And it can go down some if you take more thyroid. You could trial taking a little bit of thyroid. It's not probably going to hurt you, because taking synthetic thyroid will suppress it.

But you should also have an MRI to look at your pituitary gland. The most common cause other than pregnancy that I'm aware of, given that I did not go to medical school, I just read a lot of PubMed and I know what I'm talking about is you can have a benign and they're usually benign pituitary tumor. So see if that's an issue and it's just a one-time MRI going for an afternoon, and I don't even mean cancer, I just mean like a growth. So it would be worth looking at it and confirming that it's normal and then looking at everything else. If there is something there, then you need to know what it is, but it isn't anything that would worry me because your numbers aren't 10 times normal. They're just off the top of the chart.

So given that you have symptoms of that and it's the only lab that doesn't look right here that I'm seeing other than one, the other one that's here is your potassium levels are too low. They're off the lower end of the chart and you just looks like you need to take some potassium probably, and that's something that you can chat with your health providers about it if they do that kind of thing. You should know with potassium, humans historically got like 10 grams a day from foods most likely we think, but they got more sodium and now the levels that they recommend are closer to four grams a day.

You can only buy it, in the US anyway, in 99 milligram things because taking a large dose of potassium all at once can give you an arrhythmia. But there are companies that sell potassium powder as potassium bicarbonate is a common one or potassium citrate, and you might want to start having some of that with your meals and just ramp up slowly and see if that helps you. It's also going to help you hydrate your cells better, but I don't think potassium's going to have anything to do with the libido. So I think what we've got here is you're going to address bacteria and maybe test for parasites on the gut.

You don't have the cortisol thing, you don't have the thyroid thing, but you have a weird prolactin thing that most people don't even know about. That's what stood out when we chatted. The other thing you don't have, well actually here we go. No, that CFT, not CRP. I want to know your C-reactive protein levels. Do you have signs of an inflammation in the body that's usually from an infection including an infected gut? C-reactive protein would tell you that, and that is one of the big three that I recommend other than testosterone or sex hormones and thyroid hormones is I like to see what's going on with your inflammation markers, which would be Lp-PLA2, C-reactive protein, and homocysteine.

So if you're listening to this and you're scribbling furiously, there is going to be show notes for you and I'm just going to repeat those for you to make it really easy. Inflammation is C-reactive protein, CRP. Just write it down. There's homocysteine. HOMO-C-Y-S-T... I think it's I-N-E or it's E-I-N-E off the top of my head. Is this a stine or cysteine? I think it's I-N-E. Anyway, homocysteine. Google will spell the rest of it

for you if you're still using Google. And what was the other one? An Lp-PLA2. Just write those letters down. And that's an enzyme that's released when there's inflammation in your arteries.

You hear those three things like, "Okay, I have or don't have inflammation," and then you look at your thyroid and you look at your sex hormones. And with that stuff you can really figure out most of what's going on. There's always more tests, but those are the big ones. You might also look at a Viome test to see what's going on in the gut, which you have on order but you don't have yet at the time we schedule this. And I'm still intrigued by the fact that a soluble fiber helps. That makes me think parasite or bacteria in the gut is probably what's going on there. That's really the most likely.

David:

Okay. Awesome.

Dave:

All right.

David:

Some good changes to make there.

Dave:

Yeah, I would trial... I would trial... What happens if you do a month or two of zero gluten? Because a lot of people do what you talked about in your submission for me that you wrote up ahead of time. You talk about I'm cutting back on gluten. Think about it like this, I'm cutting back on landmines.

David:

Yeah.

Dave:

So if your immune system really gets tweaked by gluten and like, "Well, I cut back on it and I just have an explosion once every three days," it's still too much. You need a period of peace to heal or possibly you're not sensitive at all, but you'll never know if you just cut back. You kind of have to be religious. You mentioned that you're not drinking much, but you drink some, you like some wine and you're still hitting the bakery and it does show you were slightly high in your blood sugar, but not terribly high. Your triglycerides were slightly high but not terribly high, which is a sign of too much fructose or too much alcohol. Uric acid, slightly high, but not off the top of the charts. So you look like a guy who probably does hit the bakery, probably does drink on occasion, has something wrong in your gut and maybe has something going on in your pituitary or some other system that's making your body secrete the pregnant woman hormone, which makes you less interested in sex, which is no fun.

You're only 50, which is well, less than a third of your possible life here. So I just got to say, it's your job to do whatever it takes to get that deep sleep back, which we haven't addressed yet. So what are you going to do about that? The No. 1 thing that doubled my deep sleep straight up is you got to wear your red colored true dark glasses. It's not just red, there's a bunch of different spectrums in there. You really have to be religious about the color and brightness of light. What most people do is say, "Well, I wore them most of the night, but right before bed I didn't have them on. I went into the bathroom, I turned on the light so I wouldn't pee on the floor," and that's all it takes. It takes five seconds. And people have for 10 years or maybe, yeah, since I started talking about this since I launched TrueDark, for 10 years,

they've been saying, "Dave, you're such a whatever because you keep saying that five seconds matters. How could it possibly matter?"

Well, just recently, a very intelligent guy from Stanford University named Andrew Huberman just came out. He's been digging in on circadian biology, same way I did with Satchin Panda at the Salk Institute when I went down there and chatted with him and his research people. It's really clear. It only takes a few seconds of bright white light to trash your timing system. It's not about melatonin, it's not about blue blocking. It's about four different colors of light. It's about the brightness of light, it's about the intensity, the brightness, and the angle of the light. So at night, just for a week or two, don't eat after the sun goes down, don't eat within three hours of bedtime. The longer between dinner and bedtime, the better you are. And be religious, baseball hat, dark glasses if you don't have the TrueDarks and just be like a vampire. And just try it for a few nights. That combination of food and light exposure and see if you can get that deep sleep up to 45 minutes.

Mine doubled from wearing the glasses before bed. I have been wearing them for seven years every night without fail, either I have red light bulbs in my house and nothing else, or I wear the glasses. People have seen me in bars at night. I just do it because I do not get deep sleep if I don't do that. My body is very sensitive, yours may be also. And given your triglycerides a little higher, your blood sugar's a little bit high and your gut's off. Just be like, "I'm going to go hardcore and just, I'm going to give myself 60 days. I'm going to do no gluten. When I look at the bakery, I'm going to get one of those tasers and just taser myself a couple times." Your body won't want it after that. And really just say, "It's only for a set period of time." And you're going to see how you feel. You're going to get your gut results back from Viome and see what's going on in there. Yeah, I think that the protein is a big thing for you. Prolactin's a big thing. And potassium's a big thing. So let's get those under control and see how you do.

David:

Awesome. Yeah. Thank you, Dave.

Dave:

You're welcome. Guys, if you're interested in knowing how I do this or just wanting to hear more of these or maybe being in one yourself, go to daveasprey.com and check out the Upgrade Collective and all the biohacking things I do because there's a community of people who work together on solving each other's problems that I host, and I would love to have you be a part of it. It's called the Upgrade Collective. See you all soon.