

**Lex Fridman Podcast #435 - Andrew Huberman: Focus, Controversy, Politics, and  
Relationships**

Published - June 27, 2024

Transcribed by - [thepodtranscripts.com](https://thepodtranscripts.com)

**Lex Fridman**

The following is a conversation with Andrew Huberman, his fifth time on the podcast. He is the host of the Huberman Lab podcast and is an amazing scientist, teacher, human being, and someone I'm grateful to be able to call a close friend. Also, he has a book coming out next year that you should pre-order now, called *Protocols: An Operating Manual for the Human Body*. This is the Lex Fridman podcast. To support it, please check out our sponsors in the description. And now, dear friends, here's Andrew Huberman. You think there's ever going to be a day when you walk away from podcasting?

**Andrew Huberman**

Definitely. I came up within and then on the periphery of skateboard culture. And for the record, I was not a great skateboarder. I always have to say that because skateboarders are relentless if you call something you didn't do or whatever. I could do a few things and I loved the community and I still have a lot of friends in that community. Jim Thiebaud at Deluxe, you can look him up. He's the man behind the whole scene. I know Tony Hawk, Danny Way, these guys. I got to see them come up and get big and stay big in many cases, start huge companies like Danny and Colin McKay's or DC. Some people have a long life in something, some don't. But one thing I observed and learned a lot from skateboarding at the level of observing the skateboarders and then the ones that started companies, and then what I also observed in science and still observe is you do it for a while, you do it at the highest possible level for you, and then at some point, you pivot and you start supporting the young talent coming in. In fact, the greatest scientists, people like Richard Axel, Catherine Dulac, there are many other labs in neuroscience, Karl Deisseroth. They're not just known for doing great science. They're known for mentoring some of the best scientists that then go on to start their own labs. And I think in podcasting, I am very fortunate I got in a fairly early wave, not the earliest wave, but thanks to your suggestion of doing a podcast, fairly early wave. And I'll continue to go as long as it feels right, and I feel like I'm doing good in the world and providing good, but I'm already starting to scout talent. My company that I started with, Rob Moore, SciCom Media, there's a couple other guys in there too. Mike Blabac, our photographer, Ian Mackey, Chris Ray, Martin Phobes. We are a company that produces podcasts right now. That's Huberman Lab podcast, but we're launching a new podcast, Perform with Dr. Andy Galpin.

**Lex Fridman**

Nice.

**Andrew Huberman**

And we want to do more of that kind of thing, finding a really great talent, highly qualified people, credentialed people. And I've got a new kind of obsession with scouring the internet, looking for the young talent in science, in health and related fields. And so will there be a final episode of the HLP? Yeah, I mean, [inaudible 00:03:19] cancer aside someday it'll be the very last, "And thank you for your interest in science." And I'll clip out.

**Lex Fridman**

Yeah, I love the idea of walking away and not be dramatic about it. Right? When it feels right, you can leave and you can come back whenever the fuck you want.

**Andrew Huberman**

Right.

**Lex Fridman**

Jon Stewart did this well with the Daily Show. I think that was during the 2016 election when everybody wanted him to stay on and he just walked away. Dave Chappelle for different reasons, walked away.

**Andrew Huberman**

Disappeared, came back.

**Lex Fridman**

Gave away so much money, didn't care, and then came back and was doing stand up in the park in the middle of nowhere. Genius. You have Habib who, undefeated, walks away at the very top of a sport.

**Andrew Huberman**

Is he coming back?

**Lex Fridman**

No, it's done.

**Andrew Huberman**

[inaudible 00:04:06] we don't know.

**Lex Fridman**

Yeah, right. You don't know. I don't -

**Andrew Huberman**

[inaudible 00:04:10] or worried. Yeah, I think it's always a call. The last few years have been tremendous growth. We launched in January 2021 and even this last year, 2024, has been huge growth in all sorts of ways. It's been wild. And we have some short form content planned, 30 minute shorter episodes that really distill down the critical elements. We're also thinking about moving to other venues besides podcasting. So there's always the thought and the discussion, but when it comes to when to hang up your cleats, it's like there just comes a natural time where you can do more to mentor the next generation coming in than focusing on self, and so there will come a time for that. And I think it's critical. I mean, again, I saw this in skateboarding like Danny and Colin and Danny's brother Damon started DC with

Ken Block, the driver who unfortunately passed away a little while ago, rally car driver. And they eventually sold it, I think to Quicksilver or something like that. But they're all phenomenal talents in their respective areas. But they brought in the next line of amazing riders. The plan B thing. Paul Rodriguez for skateboarders, they know who this is now in science, there are scientists like Feynman for instance, I don't know if anyone can name one of his mentor offspring. So there are scientists who are phenomenal, beyond world-class, multi-generational, world-class, who don't make good mentors. I'm not saying he wasn't a good mentor, but that's not what he's known for. And then there are scientists who are known for being excellent scientists and great mentors. And I think there's no higher celebration to be had at the end of one's career, if you can look back and be like, "Hey, I've put some really important knowledge into the world. People made use of that knowledge." And guess what? You spawned all these other scientific offspring or sport offspring or podcast offspring. I mean in some ways we look to Rogan and to some of the other earlier podcasters, they paved the way. Rhonda Patrick, first science podcast out there. So eventually the baton passes, but fortunately right now everybody's active and it feels really good.

**Lex Fridman**

Yeah. Well, you're talking about the healthy way to do it, but there's also a different kind of way where you have somebody like Grisha - Grigori Perelman the mathematician who refused to accept the Fields Medal. So, he's one of the greatest living mathematicians. And he just walked away from mathematics and rejected the Fields Medal.

**Andrew Huberman**

What did he do after he left mathematics?

**Lex Fridman**

Life? Private 100%.

**Andrew Huberman**

I respect that.

**Lex Fridman**

He's become essentially a recluse. There's these photos of him looking very broke, like he could use the money. He turned away the money. He turned away everything. You just have to listen to the inner voice. You have to listen to yourself and make the decisions that don't make any sense for the rest of the world, and it makes sense to you.

**Andrew Huberman**

Bob Dylan didn't show up to pick up his Nobel Peace Prize. That's punk. Yeah, he probably grew in notoriety for that. Maybe he just doesn't like going in Sweden, but seemed like it

would be a fun trip. I think they do it in a nice time of year, but hey, that's his right. He earned that right.

**Lex Fridman**

I think the best artists aren't doing it for the prize. They aren't doing it for the fame or the money. They're doing it because they love the art.

**Andrew Huberman**

That's the Rick Rubin thing. You got to verb it through, download your inner thing. I don't think we've talked about this, this obsession that I have about how Rick has this way of being very, very still in his body, but keeping his mind very active as a practice. Went and spent some time with him in Italy last June, and we would tread water in his pool in the morning and listen to A History of Rock and Roll in a Hundred Songs. Amazing podcast, by the way.

**Lex Fridman**

It is.

**Andrew Huberman**

And then he would spend a fair amount of time during the day in this kind of meditative state where his mind is very active, body very still. And then Karl Deisseroth, when he came on my podcast, talked about how he forces himself to sit still and think in complete sentences late at night after his kids go to sleep. And there's a state of mind, rapid eye movement sleep, where your body is completely paralyzed and the mind is extremely active and people credit rapid eye movement sleep with some of the more elaborate emotion-filled dreams and the source of many ideas. And there are other examples. Einstein, people described him as taking walks around the Princeton campus, then pausing, and would ask him what was going on and the idea that his mind was continuing to churn forward at a higher rate. So this is far from controlled studies, but we're talking about some incredible minds and creatives who have a practice of stilling the body while keeping the mind deliberately very active, very similar to rapid eye movement sleep. And then there are a lot of people who also report great ideas coming to them in the shower, while running. So it can be the opposite as well, where the body is very active and the mind is perhaps more on kind of like a default mode network, not really focusing on any one specific thing.

**Lex Fridman**

Interesting. There's a bunch of physicists and mathematicians I've talked to. They talk about sleep deprivation and going crazy hours through the night obsessively pursuing a thing. And then the solution to the problem comes when they finally get rest.

**Andrew Huberman**

And we know, we just did this sixth episode special series on sleep with Matt Walker, we know that when you deprive yourself of sleep and then you get sleep, you get a rebound in rapid eye movement sleep, you get a higher percentage of rapid eye movement sleep. And Matt talks about this in the podcast and he did an episode on sleep and creativity, sleep and memory and rapid eye movement sleep comes up multiple times in that series. There's also some very interesting stuff about cannabis withdrawal and rapid eye movement sleep. People who are coming off cannabis often will suffer from insomnia, but when they finally do start sleeping, they dream like crazy. Cannabis is a very controversial topic right now.

**Lex Fridman**

Oh yeah, I saw that. What happened? There's a bunch of drama around an episode you did on cannabis.

**Andrew Huberman**

Yeah, we did an episode about cannabis, talked about the health benefits and the potential risks. It's neither here nor there. It depends on the person, depends on the age, depends on genetic background, a number of other things. We published that episode well over a year ago and it had no issues online, so to speak. And then a clip of it was put to X, where the real action occurs as you know, your favorite [inaudible 00:11:13].

**Lex Fridman**

Yeah.

**Andrew Huberman**

Yeah, the four ounce gloves as opposed to the 16 ounce gloves that is X versus Instagram or YouTube. There was kind of an immediate dog pile from a few people in the cannabis research field.

**Lex Fridman**

The PhDs and MDs, yeah?

**Andrew Huberman**

There were people on our side. There were people not on our side. I mean, the statement that got things riled up the most was this notion that for certain individuals there's a high potential for inducing psychosis with high THC-containing cannabis. For certain individuals, not all. That sparked some issues. There was really a split. You see this in different fields. There was one person in particular who came out swinging with language that in my opinion is not of the sort that you would use at a university venue, especially among colleagues, but that's fine. We're all grownups.

**Lex Fridman**

Well, for me, from my perspective, it was strangely rude and it had an air of elitism that to me, was it the source of the problem during Covid that led to the distrust of science and the popularization of disrespecting science because so many scientists spoke with an arrogance and a douchebaggery that I wish we would have a little bit less of.

**Andrew Huberman**

Yeah, it's tough because most academics don't understand that people outside the university system, they're not familiar with the inner workings of science and the culture. And so you have to be very careful how you present when you're a university professor. And so he came out swinging, and some four-letter word-type language, and he was obviously upset about it. So I simply said what I would say anywhere, which was, "Hey, look, come on the podcast. Let's chat, and why don't you tell me where I'm wrong and let's discuss." And fortunately, he agreed. And initially he said, "Well, no, how can I be sure you're not going to misrepresent me?" And so I said, we got on a DM then an email, then eventually phone call and just said, "Hey, listen, you're welcome to record the whole conversation. We've never done a gotcha on my podcast and let's just get to the heart of the matter. I think this little controversy is perfect kindling for a really great discussion." And he had some other conditions that we worked out and I felt like, "Cool, he's really interested." You get a very different person on the phone than you do on Twitter. I will say he's been very collegial and that conversation is on the schedule. I said, "We'll fly you out, we'll put you up." He said, no, he wants to fly himself. He really wants to make sure that there's a space between, I think some of the perception of science and health podcasts in the academic community is that it's all designed to sell something. No, we run ads so it can be free to everyone else. But I think, look, in the end, he agreed, and I'm excited for the conversation. It was interesting because in the wake of that little exchange, there's been a bunch of press from traditional press about cannabis has now surpassed alcohol in many cultures within the United States as, when I say cultures, I mean demographics, the United States as the drug of choice. There have been people highlighting the issues of potential psychosis in high THC containing. And so it's kind interesting to see how traditional media is sort of onboard certain elements that I put forward. And I think there's some controversy as to whether or not the different strains, the indicas and sativas are biologically different, et cetera. So we'll get down into the weeds, pun intended, during that one. And I'm excited. It's the first time that we've responded to a direct criticism online about scientific content in a way that really promoted the idea of inviting a particular guest. And so it's great. Let's get a guest on who is an expert in cannabis. I believe, I could be wrong about this, but he's a behavioral neuroscientist. That's slightly different training. But look, he seems highly credentialed. It'll be fun. And we welcome that kind of exchange.

**Lex Fridman**

I deeply -

**Andrew Huberman**

And I'm not being diplomatic, I'm just saying it's cool. He's coming on. And he was friendly on the phone. He literally came out online and was basically kind of like, "F you. F this and F you." But you get someone on the phone, it's like, "Hey, how's it going?" And they're like, "Oh, yeah, well." There was an immediate apology of like, "Hey, listen, I came out. Normally I'm not like that, but online..."

**Lex Fridman**

Okay, listen.

**Andrew Huberman**

So it's a little bit like jujitsu, right? People say all sorts of things, I guess. But if you're like, "Alright, well, let's go," then it's probably a different story.

**Lex Fridman**

It's not like jujitsu because in jujitsu, people don't talk shit because they know what the consequences are. Let me just say on mic and off mic, you have been very respectful towards this person, and I look up to you and respect you and admire the fact that you have been. That said, to me, that guy was being a dick. And when you graciously, politely invited him on the podcast, he was still talking down to you the whole time. So I really admire and look forward to listening to you talk to him, but I hope others don't do that. You are a positive, humble voice exploring all the interesting aspects of science. You want to learn. If you've got anything wrong, you want to learn about it. The way he was being a dick, I was just hurt a little bit, not because of him, because there's some people I really, really admire, brilliant scientists that are not their best selves on Twitter, on X. I don't understand what happens to their brain.

**Andrew Huberman**

Well, they regress. They regress. And they also are protected. When you remove the, I mean, no scientific argument should ever come to physical blows, right? But when you remove the real world thing of being right in front of somebody, people will throw all sorts of stones at a distance and over a wall and they've got their wife or their husband or their boyfriend or their dog or their cat to go cuddle with them afterwards. But you get in a room and it's like confrontational people in real life are pretty rare. But hopefully if they do it, they're willing to back it up, with knowledge in this case, we're not talking about physical altercation. He kept coming and he kept putting on conditions, "How do I know you want this?" And I was like, "Well, you can record the conversation." "How do I know you want that?" "Listen, we'll pay for you to come out." "How do you know...?" And eventually he just kind of relented. And to his credit, he's agreed to come on. I mean, he still has to show up, but once he does, we'll treat him right, like we would any other guest.



**Lex Fridman**

Yeah, you treat people really well, and I just hope that people are a little bit nicer on the internet.

**Andrew Huberman**

X is an interesting one because it thickens your skin just to go on there. I mean, you have to be ready to deal with-

**Lex Fridman**

Sure. But I can still criticize people for being douchebags, because that's still not good, inspiring behavior, especially for scientists. That should be sort of symbols of scientific thinking, which requires intellectual humility. Humility is a big part of that, and Twitter is a good place to illustrate that.

**Andrew Huberman**

Years ago, I was a student in TA, then instructor and then directed a Cold Spring Harbor course on visual neuroscience. These are summer courses that explore different topics. And at night we would host what we hoped were battles in front of the students where you'd get two people on it, would it be neuroprosthetics or molecular tools that would first restore vision to the blind kind of arguments. It's kind of a silly argument because it's going to be a combination of both, but you'd get these great arguments. But the arguments were always couched in data. And occasionally you'd get somebody would go like, "Ah," or would curse or something, but it was the rare, very well-placed insult. It wasn't coming out swinging. I think ultimately Twitter's a record of people's behavior. The internet is a record of people's behavior. And here I'm not talking about news reports about people's behavior. I'm talking about how people show up online is really important. You've always carried yourself with a ton of composure and respect, and you would hope that people would grow from that example. Well, I'll tell you that the podcasters that I'm scouting, it's their energy, but it's also how they treat other people, how they respond to comments. And we're blessed to have pretty significant reach. When we put out a podcast of someone else's podcast, it goes far and wide. So like a skateboard team, like a laboratory where you're selecting people to be in your lab, you want to pick people that you would enjoy working with and that are collegial. Etiquette is lacking nowadays, but you're in the suit and tie. You're bringing it back.

**Lex Fridman**

Bringing it back. You said that your conversation with James Hollis, a Jungian psychoanalyst had a big impact on you. What do you mean?

**Andrew Huberman**

James Hollis is a 84-year-old Jungian psychoanalyst who's written 17 books including Under Saturn's Shadow, which is on the healing and trauma of men, the Eden Project, excuse me,

which is about relationships and creating a life. I discovered James Hollis in an online lecture that was recorded I think in San Diego. It's on YouTube. The audio is terrible, called Creating a Life. And this was somewhere in the 2011 to 2015 span, I can't remember. And I was on my way to Europe and I called my girlfriend at the time. I was like, "I just found the most incredible lecture I've ever heard." And he talks about the shadow. He talks about your developmental upbringing and how you either align with or go 180 degrees off your parents' tendencies and values in certain areas. He talked about the specific questions to ask of oneself at different stages of life to live a full life. So it's always been a dream of mine to meet him and to record a podcast. And he wasn't able to travel. So our team went out to DC and sat down with him. We rarely do that nowadays. People come to our studio. And he came in, he had some surgeries recently, and he kind of came in with some assistance from a cane and then sat down and just blew my mind. From start to finish he didn't miss a syllable. And every sentence that he spoke was like a quotable sentence of with real potency and actionable items. I think one of the things that was most striking to me was how he said, when we take ourselves out of stimulus and response and we just force ourselves to spend some time in the quiet of our thoughts while walking or while seated or while lying down, doesn't have to be meditation, but it could be, that we access our unconscious mind in ways that reveals to us who we really are and what we really want. And that if we do that practice repeatedly 10 minutes a day here, 15 minutes a day there, that we start to really touch into our unique gifts and the things that make us each us and the directions we need to take. But that so often we just stay in stimulus response. We just do, do, do, which is great. We have to be productive, but we miss those important messages. And interestingly, he also put forward this idea of what is, it's like, "Get up, shut up, suit up," something like that. Get out of bed, suit up and shut up and get to work. He also has that in him, kind of a Goggins type mindset.

### **Lex Fridman**

So be able to turn off all this self reflection and self-analysis and just get shit done.

### **Andrew Huberman**

Get shit done, but then also dedicate time and stop and just let stuff geyser to the surface from the unconscious mind. And he quotes Shakespeare and he quotes Jung, and he quotes everybody through history with incredible accuracy and in exactly the way needed to drive home a point. But that conversation to me was one that I really felt like, "Okay, if I don't wake up tomorrow for whatever reason, that one's in the can and I feel really great about it." To me, it's the most important guest recording we've ever done in particular because he has wisdom. And while I hope he lives to be 204, chances are he's got another, what, 20, 30 years with us, hopefully more. But I really, really wanted to capture that information and get it out there. So I'm very, very proud of that one. And he's the kind of guy that anyone listens to him, young, old, male, female, whatever, and you're going to get something of value.

**Lex Fridman**

What do you think about this idea of the shadow? That the good and the bad that we repress, that hides from plain sight when we analyze ourselves, that's there, you think there's an ocean that we don't have direct access to?

**Andrew Huberman**

Yes, Jung said it. We have all things inside of us, and we do. And some people are more in touch with those than others, and some people it's repressed. I mean, does that mean that we could all be horrible people or marvelous people, benevolent people? Perhaps. I think that thankfully more often than not, people lean away from the violent and harmful parts of their shadow. But I think spending time thinking about one's shadow, shadows is super important. How else are we going to grow? Otherwise, we have these unconscious blind spots of denial or repression or whatever the psychiatrists tell us. But yeah, it clearly exists within all of us. I mean, we have neural circuits for rage. We all do. We have neural circuits for altruism, and no one's born without these things. In some people they're atrophied and some people they're hypertrophied. But I looking inward and recognizing what's there is key.

**Lex Fridman**

Or positive things like creativity. Maybe that's what Rick Rubin is accessing when he goes silent. Silent body, active mind. That's interesting. What is it for you? What place do you go to that generates ideas? That helps you generate ideas?

**Andrew Huberman**

I have a lot of new practices around this. I mean, I'm always exploring for protocols. I have to, it's in my nature. When I went and spent time with Rick, I tried to adopt his practice of staying very still and just letting stuff come to the surface or the Deisserothian way of formulating complete sentences while being still in the body. What I have found works better is what my good friend Tim Armstrong does to write music. He writes music every day. He's a music producer. He is obviously a singer, guitar player for Rancid, and he's helped dozens and dozens and dozens of female pop artists and punk rock artists write great songs. And many of the famous songs. ... songs and many of the famous songs that you've heard from other artists, Tim helped them write. Tim wakes up sometimes in the middle of the night and what he does is he'll start drawing or painting. So what he is doing... And Joni Mitchell talks about this too. You find some creative outlet that's 15 degrees off center from your main creative outlet and you do that thing. So for me, that's drawing. I like doing anatomical drawings, neuroscience based drawing, drawing neurons, that kind of thing. If I do that for a little while, my mind starts churning on the nervous system and biology. And then, I come up with areas I'd like to explore for the podcast, ways I'd like to address certain topics. Right now, I'm very interested in autonomic control. A beautiful paper came out that shows that anyone can learn to control their pupil sizes and without changing luminance through a biofeedback mechanism. That gives them control over their so-called automatic autonomic nervous system. I've been looking at what the circuitry is and it's beautiful. So I'll

draw the circuitry that we know underlies autonomic function. As I'm doing that, I'm thinking, "Oh, what about autonomic control and those people that supposedly can control their pupil size?" Then you go in and there's a paper published in Nature Press, one of the nature journals, and there's a recent paper on this like, "Oh, cool." And then, we talk about this and then how could this be put into a post or how could this... So doing things that are about 15 degrees off center from your main thing is a great way to access, I believe, the circuits for, in Tim's case, painting goes to songwriting. I think for Joni Mitchell, that was also the case, right? I think it was drawing and painting to singing and songwriting. For Rick, I don't know what it is. Maybe it's listening to podcasts. I don't know. That's his business. Do you have anything that you like to focus on that allows you then an easier transition into your main creative work?

**Lex Fridman**

No, I'd really like to focus on emptiness and silence. So I pick the dragon I have to slay, so whatever the problem I have to work on. And then, just sit there and stare at it.

**Andrew Huberman**

I love how fucking linear you are.

**Lex Fridman**

And if there's no... If you're tired, I'll just sit. I believe in the power of just waiting. Usually, I'll stop being tired or the energy rises from somewhere or an idea pops from somewhere but there needs to be a silence and an emptiness. It's an empty room, just me and the dragon, and we wait. That's it. If it's... Usually, with programming, you're thinking about a particular design like, "How do I design this thing to solve this problem?"

**Andrew Huberman**

Any cognitive enhancers? I've got quite the gallery in front of me.

**Lex Fridman**

Oh, that's right. Yeah.

**Andrew Huberman**

Should we walk through this?

**Lex Fridman**

Yeah.

**Andrew Huberman**

This is not a sales thing. It's just... I tend to do this, bounce back and forth. Your refrigerator just happened to have a lot of different choices. So water -

**Lex Fridman**

This is all of my refrigerator items.

**Andrew Huberman**

I know, right? There's no food in there. There's water. There's LMNT which they now have canned. Yes, they're a podcast sponsor for both of us but that's not why I cracked one of these open. I like them provided they're cold.

**Lex Fridman**

That's, by the way, my least favorite flavor, as I was saying. That's the reason it's still left in the fridge.

**Andrew Huberman**

The cherry one is really good.

**Lex Fridman**

The black cherry. There's an orange one.

**Andrew Huberman**

Yeah. I pushed the sled this morning and pulled the sled for my workout at the gym. And it was hot today here in Austin so some salt is good. And then, Mateína Yerba Mate zero sugar, full confession, I helped develop this. I'm a partial owner but I love yerba mate. Half Argentine, been drinking mate since I was a little kid. There's actually a photo somewhere on the internet when I'm three sitting on my grandfather's lap, sipping mate out the gourd. And then, this, you might find interesting, this is just a little bit of coffee with a scoop of... Bryan Johnson gave me cocoa, just like pure unsweetened cocoa. So I put that in chocolate. I like it just for the taste. Well, it actually nukes my appetite. Since we're not going out to dinner tonight until later, I figure that's good. Yeah. Bryan's an interesting one, right? He's really pushing this thing.

**Lex Fridman**

The optimization of everything.

**Andrew Huberman**

Yeah. Although he just hurt his ankle. He posted a photo that he hurt his ankle so now he's injecting BPC, Body Protection Compound 157, which many, many people are taking by the way. I did an episode on peptides. I should just say, BPC 157, one of the known effects in animal models is angiogenesis like development of new vasculature which can be great in some context. But also, if you have a tumor, you don't really want to vascularize that tumor anymore. So I worry about people taking BPC 157 continually and there's very little human data. I think there's one study and it's a lousy one, so a lot of animal data. Some of the peptides are interesting however. There's one that I've experimented with a little bit called

Pinealon which I, find even if I've just taken it twice a week before sleep, then it times... It seems to do something to the circadian timekeeping mechanism. Because then on other days when I don't take it, I get unbelievably tired at that time that normally I would do the injection. These are things that I'll experiment with for a couple of weeks and then typically stop, maybe try something else. But I stay out of things that really stimulate any major hormone pathways when it comes to peptides.

### **Lex Fridman**

That's actually a really good question of how do you experiment? How long do you try a thing to figure out if it works for you?

### **Andrew Huberman**

Well, I'm very sensitive to these things and I have been doing a lot of things for a long time. So if I add something in, it's always one thing at a time and I notice right away if it does not make me feel good. There's a lot of excitement about some of the so-called growth hormone secretagogues: Ipamorelin, Tesamorelin, and Sermorelin. I've experimented a little bit with those in the past and they've nuked to my rapid eye movement sleep but giving me a lot of deep sleep which doesn't feel good to me. But other people like them. I also just generally try and avoid taking peptides that tap into these hormone pathways because you can run into all sorts of issues. But some people take them safely. But usually after about four or five days, I know if I like something or I don't and then I move on. But I'm not super adventurous with these things. I know people that will take cocktails of peptides with multiple things. They'll try anything. That's not me and I do blood work. But also, I'm mainly reading papers and podcasting and I'm teaching a course next spring. In Stanford, I'm going to do a big undergraduate course. So I'm trying to develop that course and things like that. So I don't need to lift more weight or run further than I already do which is not that much weight or far as it is.

### **Lex Fridman**

Right. You're not going to the Olympics. You're not trying to truly maximize some aspect of your performance.

### **Andrew Huberman**

No, and I'm not trying to get down below whatever, 7% body fat or something. I don't have those kinds of goals. So hydration, electrolytes, caffeine in the form of mate, and then this coffee thing. And then, here's one that I think I brought out for discussion. This is a piece of Nicorette. They're not a sponsor. Nicotine is an interesting compound. It will raise blood pressure and it is probably not safe for everybody but nicotine is gaining in popularity like crazy. Mainly, these pouches that people put in the lip. We're not talking about I'm smoking, vaping, dipping, or snuffing. My interest in nicotine started... This was in 2010, I was visiting Columbia Medical School and I was in the office of the great neurobiologist, Richard Axel.

Won the Nobel Prize, co-recipient with Linda Buck, for the discovery of the molecular basis of olfaction. Brilliant guy. He's probably in his late 70s now.

**Lex Fridman**

Probably.

**Andrew Huberman**

Yeah. He kept popping Nicorette in his mouth and I was like, "What's this about?" And he said, "Oh, well..." This was just anecdote but he said this, he said, "Oh. Well, it protects against Parkinson's and Alzheimer's." I said, "It does?" He goes, "Yeah." I don't know if he was kidding or not. He's known for making jokes. And then, he said that when he used to smoke, it really helped his focus in creativity. But then, he quit smoking because he didn't want lung cancer and he found that he couldn't focus as well so he would choose Nicorette. So occasionally, like right now, we'll each... I do a half a piece but I'm not Russian, so I'm a little... Did you just pop the whole thing in your mouth?

**Lex Fridman**

Mm-hmm.

**Andrew Huberman**

So I'll do a couple milligrams every now and again. It definitely sharpens the mind on an empty stomach in particular. But you fast all day, you're still doing one meal a day?

**Lex Fridman**

One meal a day.

**Andrew Huberman**

Yeah.

**Lex Fridman**

Yeah. I did a nicotine pouch with Rogan at dinner and I got high.

**Andrew Huberman**

Yeah. That's a lot. That's usually six or eight milligrams. I know people that get a canister of Zyn, take one a day, pretty soon they're taking a canister a day. So you have to be very careful. I will only allow myself two pieces of Nicorette total per week. You will notice that in the day after you use it, sometimes your throat will feel a little spasm like you might want to cough once or twice. And so, if you're a singer or you're a podcaster or something, you have to do long podcasts, you want to just be mindful of it. But yeah, you're supposed to keep it in your cheek and here we go.

**Lex Fridman**

But it did make me intensely focused. In a way, that was a little bit scary because-

**Andrew Huberman**

The nucleus basalis is in the basal forebrain. Nucleus has cholinergic neurons that radiate out axons, little wires, that release acetylcholine into the neocortex and elsewhere. When you focus on one particular topic matter or one particular area of your visual field or listening to something and focusing visually, we know that there's an elaboration of the amount of acetylcholine released there and it binds to nicotinic acetylcholine receptor sites there. So it's an intentional modulation by acetylcholine. So with nicotine, you're getting a exogenous or artificial heightening of that circuitry.

**Lex Fridman**

The time I had Tucker Carlson on the podcast, he told me that apparently it helps him, as he said publicly, keep his love life vibrant.

**Andrew Huberman**

Really? It causes vasoconstrictions-

**Lex Fridman**

Well, he literally said it makes his dick very hard. He said that publicly also.

**Andrew Huberman**

Okay. Well, as little as I want to think about Tucker Carlson's -

**Lex Fridman**

Trust me.

**Andrew Huberman**

Sex life, no disrespect. The major effect of nicotine on the vasculature, my understanding is that it causes vasoconstriction, not vasodilation. Drugs like Cialis, Tadalafil, Viagra, etc., are vasodilators. They allow more blood flow. Nicotine does the opposite, less blood flow to the periphery. But provided dosages are kept low and... I don't recommend people use it frequently or at all. I don't recommend young people use it. 25 and younger, brain's very plastic at that time. Certainly, smoking, dipping, vaping, and snuffing aren't good because you're going to run into... They would run into trouble for other reasons. But in any case... Even there, vaping's a controversial topic. "Probably safer than smoking but has its own issues," I said something like that and, boy, did I catch a lot of heat for that. You can't say anything as a health science educator and not piss somebody off. It just depends on where the center of mass is and how far outside that you are.



**Lex Fridman**

For me, the caffeine is the main thing. Actually, it's a really big part of my life. One of the things you recommend, that people wait a bit in the morning to consume caffeine.

**Andrew Huberman**

If they experience a crash in the afternoon. This is one of the misconceptions. I regret maybe even discussing it. For people that crash in the afternoon, oftentimes, if they delay their caffeine by 60 and 90 minutes in the morning, they will offset some of that. But if you eat a lunch that's too big or you didn't sleep well the night before, you're not going to avoid that afternoon crash. But I'll wake up sometimes and go straight to hydration and caffeine, especially if going to workout. Here's a weird one. If I exercise before 8:30 AM especially if I start exercising when I'm a little bit tired, I get energy that lasts all day. If I wait until my peak of energy which is mid-morning, 10:00 AM, 11:00 AM, and I start exercising then, I'm basically exhausted all afternoon. I don't understand why. I mean, it depends on the intensity of the workout but... So I like to be done, showered, and heading into work by 9:00 AM but I don't always meet that mark.

**Lex Fridman**

So you're saying it doesn't affect your energy if you start out with exercising.

**Andrew Huberman**

I think you can get energy and wake yourself up with exercise if you start early. And then, that fuels you all day long. I think that if you wait until you're feeling at your best to train, sometimes that's detrimental. Because then in the afternoon when you're doing the work we get paid for like research, podcasting, etc., then oftentimes your brain isn't firing as well.

**Lex Fridman**

That's interesting. I haven't really rigorously tried that: wake up and just start running or-

**Andrew Huberman**

Listen to Jocko thing. And then, there's this phenomenon called entrainment where if you force yourself to exercise or eat or socialize or view bright light at a certain time of day for three to seven days in a row, pretty soon there's an anticipatory circuit that gets generated. This is why anyone, in theory, can become a morning person to some degree or another. This is also a beautiful example of why you wake up before your alarm clock goes off. People wake up and all of a sudden it goes off, it wasn't because it clicked. It's because you have this incredible timekeeping mechanism that exists in sleep. There's some papers that have been published in the last couple of years, Nature Neuroscience and elsewhere, showing that people can answer math problems in their sleep. Simple math problems but math problems nonetheless. This does not mean that if you ask your partner a question in sleep, that they're going to answer accurately.

**Lex Fridman**

They might screw up the whole cumulative probability of 20% across multiple months.

**Andrew Huberman**

Alright. Listen, what happened?

**Lex Fridman**

What happened?

**Andrew Huberman**

Here's the deal. A few years back, I did a, after editing, four and a half hour episode on male and female fertility. The entire recording took 11 hours. At one point, during the... By the way, I'm very proud of that episode. Many couples have written to me and said they now have children as a consequence of that episode. My first question is, what were you doing during the episode? But in all seriousness-

**Lex Fridman**

We should say that it's four and a half hours and they should listen to the episode. It's an extremely technical episode. You're nonstop dropping facts and referencing huge number of papers. It must be exhausting. I don't understand how you could possibly-

**Andrew Huberman**

It talks about sperm health, spermatogenesis. It talks about the ovulatory cycle. It talks about things people can do that are considered absolutely supported by science. It talks about some of the things out on the edge a little bit that are a little bit more experimental. It talks about IVF. It talks about ICSI. It talks about all of that. It talks about frequency of pregnancy as a function of age, etc. But there's this one portion there in the podcast where I'm talking about the probability of a successful pregnancy as a function of age. And so, there was a clip that was cut in which I was describing cumulative probability. By the way, we've published cumulative probability histograms in many of my laboratories' papers, including one that was in Nature Article in 2018. So we run these all the time. Yes, I know the difference between independent and cumulative probability. I do. The way the clip was cut and what I stated unfortunately combined to a pretty great gaffe where I said, "You're just adding percentages 20 to 120%." And then, I made this... Unfortunately, my humor isn't always so good and I made a joke. I said, "120%, but that's a different thing altogether." What I should have said was, "That's impossible and here's how it actually works." But then, it continues where I then describe the cumulative probability histogram for successful pregnancy. But somewhere in the early portion, I misstated something, right? I made a math error which implied I didn't understand the difference between independent and cumulative probability which I do. It got picked up and run and people had a really good laugh with that one at my expense. And so, what I did in response to it was rather than just say everything I just said now, I just came out online and said, "Hey folks, in an episode dated this on fertility,

I made a math error. Here's the formula for cumulative probability, successful pregnancy at that age. Here's the graph. Here's the..." I offered it as a teaching moment in two ways. One, for people to understand cumulative probability. It was interesting too, the number of people that had come out critiquing the gaffe. Also, like Balaji and folks came out pointing out that they didn't understand cumulative probability. So there was a lot of posturing. The dogpile, oftentimes people are quick to dogpile. They didn't understand but a lot of people did understand. There's some smart people out there obviously. I called my dad and he was just laughing. He goes, "Oh, this is good. This is like the old school way of hammering academics." But the point being, it was a teaching moment. Gave me an opportunity to say, "Hey, I made a mistake." I also made a mistake in another podcast where I did a micron to millimeter conversion or centimeter conversion. We always correct these in the show note captions. We correct them in the audio now. Unfortunately, on YouTube, it's harder to correct. You can't go and edit in segments. We put it in the captions but that was the one teaching moment. If you make a mistake, it's substantive and relate to data, you apologize and correct the mistake. Use it as a teaching moment. The other one was to say, "Hey..." In all the thousands of hours of content we've put out, I'm sure I've made some small errors. I think I once said serotonin when I meant dopamine and you're going, you're riffing. It's a reminder to be careful to edit, double check. But the internet usually edits for us and then we go make corrections. But it didn't feel good at first. But ultimately, I can laugh at myself about it. Long ago at Berkeley when I was TA-ing my first class, it was a bio-psychology class. It should be in 1998 or 1999. I was drawing the pituitary gland which has an anterior and a posterior lobe. It actually has a medial lobe too. I had 5,600 students in that lecture hall. I drew, it was chalkboard and I drew the two lobes of the pituitary and I said... My back was to the audience, I said, "And so, they just hang there," and everyone just erupted in laughter because it looked like a scrotum with two testicles. I remember thinking like, "Oh my god. I don't think I can turn around and face this." I got to turn around sooner or later so I turned around and we just all had a big laugh together. It was embarrassing. I'll tell you one thing though, they never forgot about the two lobes of the pituitary.

### **Lex Fridman**

Yeah. And you haven't forgotten about that either.

### **Andrew Huberman**

Right. There's a high salience for these kinds of things. It also was fun to see how excited people get to see people trip. It's like an elite sprinter trips and does something stupid, like runs the opposite direction out the blocks or something like that and... Or I recall it, one World Cup match years ago, a guy scored against his own team. I think they killed the guy. Do you remember that?

### **Lex Fridman**

Mm-hmm.

**Andrew Huberman**

Some South American or Central American team and they killed the guy. But yeah, let's look it up. I just said, "World Cup..." Yeah. He was gunned down.

**Lex Fridman**

Andres Escobar scored against his own team in 1994 World Cup in the United States, just 27 years old playing for the Colombia National team.

**Andrew Huberman**

Yeah. Last name Escobar.

**Lex Fridman**

That's a good name. I think it would protect you.

**Andrew Huberman**

Listen, so there's some gaffes that get people killed, right? So how forgiving are we for online mistakes? It's the nature of the mistakes. People were quite gracious about the gaffe and some weren't. It's interesting that we, as public health science educators, we'll do long podcasts sometimes and you need to be really careful. What's great is AI allows you to check these things now more readily. So that's cool. There are ways that it's now going to be more self-correcting. I mean, I think there's a lot of errors out there on the internet and people are finding them and it's cool. Things are getting cleaned up.

**Lex Fridman**

Yeah. But mistakes, nevertheless, will happen. Do you feel the pressure of not making mistakes?

**Andrew Huberman**

Sure. I mean, I try and get things right to the best of my ability. I check with experts. It's interesting. When people really don't like something that was said in a podcast, a lot of times I chuckle because I'm... At Stanford, we have some amazing scientists but I talk to them people elsewhere and it's always interesting to me how I'll get divergent information. And then, I'll find the overlap in the Venn diagram. I have this question, do I just stay with the overlap in the Venn diagram? I did an episode on oral health. I didn't know this until I researched that episode but oral health is critically related to heart health and brain health. That there's a bacteria that causes cavities, streptococcus, that can make its way into other parts of the body through the mouth that can cause serious issues. There's the idea that some forms of dementia, some forms of heart disease start in the mouth basically. I talked to no fewer than four dentists, dental experts, and there was a lot of convergence. I also learned that teeth can demineralize, that's the formation of cavities. They can also re-mineralize. As long as the cavity isn't too deep, it can actually fill itself back in, especially if you provide the right substrates for it. That saliva is this incredible fluid that has all this

capacity to re-mineralize teeth, provided the milieu is right. Things like alcohol-based mouth washes, killing off some of the critical things you need. It was fascinating and I put out that episode thinking, "Well, I'm not a dentist. I'm not an oral health episode but I talked to a pediatric dentist." There's a terrific one, Dr. Downskor Staci, S-T-A-C-I, on Instagram, does great content. Talked to some others. And then, I just waited for the attack. I was like, "Here we go," and it didn't come. Dentists were thanking me. I was like... That's a rare thing. More often than not, if I do an episode about, say, psilocybin or MDMA, you get some people liking it. Or ADHD and the drugs for ADHD, we did a whole episode on the Ritalin, Vyvanse, Adderall stuff. You get people saying, "Thank you. I prescribed this to my kid and it really helps." But they're private about the fact that they do it because they get so much attack from other people. So I like to find the center of mass, report that, try and make it as clear as possible. And then, I know that there's some stuff where I'm going to catch shit. What's frustrating for me is when I see claims that I'm against fluoridization of water. Which I'm not, right? We talked about the benefits of fluoride. It builds hyper strong bonds within the teeth. I went and looked at some of literally the crystal... Excuse me. Not the crystal structure. But essentially, the micron and sub micron structure of teeth is incredible and where fluoride can get in there and form these super strong bonds. You can also form them with things like hydroxyapatite and, "Why is there fluoride in water?" "Well, it's the best..." Okay. You say some things that are interesting. But then, somehow it gets turned into like you're against fluoridization which I'm not. I've been accused of being against sunscreen. I wear mineral-based sunscreen on my face. I don't want to get skin cancer or I use a physical barrier. There is a cohort of people out there that think that all sunscreens are bad. I'm not one of them. I'm not what's called a sunscreen truther. But then, you get attacked for... So we're talking about, there are certain sunscreens that are problematic so what... Rhonda Patrick's now starting to get vocal about this. And so, there are certain topics it's interesting for which you have to listen carefully to what somebody is saying but there's a lump or lumping as opposed to splitting of what health educators say. And so, it just seems like, like with politics, there's this urgency to just put people into a camp of expert versus renegade or something. It's not like that. It's just not like that. So the short answer is, I really strive, really strive to get things right, but I know that I'm going to piss certain people off. You've taught me and Joe's taught me and other podcasters have taught me. That if you worry too much about it, then you aren't going to get the newest information out there. Like peptides, there's very little human data, unless you're talking about Vyleesi or the Melana... The stuff in the alpha- melanocyte stimulating hormone stuff which are prescribed for female libido to enhance female libido or Sermorelin which is for certain growth hormone deficiencies. With rare exception, there's very little human data. But people are still super interested and a lot of people are taking and doing these things so you want to get the information out.

### **Lex Fridman**

Do you try to not just look at the science but research what the various communities are talking about? Like maybe research what the conspiracy theorists are talking about? Just so you know all the armies that are going to be attacking your castle.

**Andrew Huberman**

Yes. So for instance, there's a community of people online that believe that if you consume seed oils or something, that you're setting up your skin sunburn. And if you don't... There's all these theories. So I like to know what the theories are. I like to know what the extremes are but I also like to know what the standard conversation is. But there's generally more agreement than disagreement. I think where I've been bullish actually is... Like supplements. People go, "Oh, supplement-" Kind of bullish actually are supplements. People go, "Oh, supplements." Well, there's food supplements, like a protein powder, which is different than a vitamin, and then they are compounds. There are compounds that have real benefit, but people get very nervous about the fact that they're not regulated, but some of them are vetted for potency and for safety with more rigor than others. And it's interesting to see how people who take care of themselves and put a lot of work into that are often attacked. That's been interesting. Also, one of the most controversial topics nowadays is Ozempic, Mounjaro. I'm very middle-of-the-road on this. I don't understand why the "health wellness community" is so against these things. I also don't understand why they have to be looked at as the only route. For some people, they've really helped them lose weight, and yes, there can be some muscle loss and other lean body loss, but that can be offset with resistance training. They've helped a lot of people. And other people are like, "No, this stuff is terrible." I think the most interesting thing about Ozempic, Mounjaro is that they are GLP-1. They're in the GLP-1 pathway, glucagon-like peptide-1, and it was discovered in Gila monsters, which is a lizard basically, and now the entomologists will dive on me. It's a big lizard-looking thing that doesn't eat very often, and they figured out that there's this peptide that allows it to curb its own appetite at the level of the brain and the gut, and it has a lot of homology to, sequence homology, to what we now call GLP-1. So I love any time there's animal biology links to cool human biology links to a drug that's powerful that can help people with obesity and type 2 diabetes, and there's evidence they can even curb some addictions. Those are newer data. But I don't see it as an either/or. In fact, I've been a little bit disappointed at the way that the, whatever you want to call it, health wellness, biohacking community has slammed on Ozempic, Mounjaro. They're like, "Just get out and run and do..." Listen, there are people who are carrying substantial amounts of weight that running could injure them. They get on these drugs and they can improve, and then hopefully they're also doing resistance training and eating better, and then you're bringing all the elements together.

**Lex Fridman**

Well, why do you think the criticism is happening? Is it that Ozempic became super popular so people are misusing it or that kind of thing?

**Andrew Huberman**

No, I think what it is that people think if it's a pharmaceutical, it's bad, and then or if it's a supplement, it's bad depending on which camp they're in, and wouldn't it be wonderful to fill in the gap between this divide? What I would like to see in politics and in health is neither

right nor left, but what we can just call a league of reasonable people that looks at things on an issue-by-issue basis and fills in the center because I think most people are in the... I don't want to say center in a political way, but I think most people are reasonable, they want to be reasonable, but that's not what sells clicks. That's not what not drives interest. But I'm a very... I look at issue by issue, person by person. I don't like ingroup-outgroup stuff. I never have. I've got friends from all walks of life. I've said this on other podcasts and it always sounds like a political statement, but the push towards polarization, it's so frustrating. If there's one thing that's discouraging to me as I get older each year, I'm like, "Wow, are we ever going to get out of this polarization?" Speaking of which, how are you going to vote for the presidential election?

**Lex Fridman**

I'm still trying to figure out how to interview the people involved and do it well.

**Andrew Huberman**

What do you think the role of podcast is going to be in this year's election?

**Lex Fridman**

I would love long-form conversations to happen with the candidates. I think it's going to be huge. I would love Trump to go on Rogan. I'm embarrassed to say this, but I honestly would love to see Joe Biden go on Joe Rogan also.

**Andrew Huberman**

I would imagine that both would go on, but separately.

**Lex Fridman**

Separately, I think is... I think a debate, Joe does debates, but I think Joe at his best is one-on-one conversation, really intimate. I just wish that Joe Biden would actually do long-form conversations.

**Andrew Huberman**

I thought he had done a... Wasn't he... I think he was on Jay Shetty's podcast.

**Lex Fridman**

He did Jay Shetty, he did a few, but when I mean long-form, I mean really long-form, like two, three hours and more relaxed. It was much more orchestrated. Because what happens when the interview is a little bit too short, it becomes into this generic, political type of NBC and CNN type of interview. You get a set of questions and you don't get to really feel the human, expose the human to the light, and at the full... We talked about the shadow. The good, the bad, and the ugly. So I think there's something magical about two, three, four hours, but it doesn't have to be that long, but it has to have that feeling to it where there's not people standing around and everybody's nervous and you're going to be strictly sticking

to the question-and-answer type of feel, but just shooting shit, which Rogan is the best by far in the world at that.

**Andrew Huberman**

Yeah, he's - I don't think people really appreciate how skilled he is at what he does. And the number... I mean, the three or four podcasts per week, plus the UFC announcing, plus comedy tours and stadiums, plus doing comedy shows in the middle of the week, plus a husband and a father and a friend, and jiu-jitsu, the guy's got superhuman levels of output. I agree that long-form conversation is a whole other business, and I think that people want and deserve to know the people that are running for office in a different way and to really get to know them. Well, listen, I guess you... I mean, is it clear that he's going to do jail time or maybe he gets away with a fine?

**Lex Fridman**

No, no. I wouldn't say I'm [inaudible 01:00:09].

**Andrew Huberman**

Because I was going to say, I mean, does that mean you're going to be podcasting from -

**Lex Fridman**

In prison?

**Andrew Huberman**

- jail?

**Lex Fridman**

Yeah, we're going to. In fact, I'm going to figure out how to commit a crime so I can get in prison with him.

**Andrew Huberman**

Please don't. Please don't.

**Lex Fridman**

Well, that's -

**Andrew Huberman**

I'm sure they have visitors, right?

**Lex Fridman**

That just doesn't feel an authentic way to get the interview, but yeah, I understand.



**Andrew Huberman**

You wouldn't be able to wear that suit. You'd be wearing a different suit.

**Lex Fridman**

That's true. That's true.

**Andrew Huberman**

It's going to be interesting, and you do, I'm not just saying this because you're my friend, but you would do a marvelous job. I think you should sit down with all of them separately to keep it civil and see what happens. Here's one thing that I found really interesting in this whole political landscape. When I'm in Los Angeles, I often get invited to these, they're not dinners, but gatherings where a local bunch of podcasters will come together, but a lot of people from the entertainment industry, big agencies, big tech, like big, big tech, many of the people have been on this podcast, and they'll host a discussion or a debate. And what you find if you look around the room and you talk to people is that about half the people in the room are very left-leaning and very outspoken about that and they'll tell you exactly who they want to see win the presidential race, and the other half will tell you that they're for the other side. A lot of people that people assume are on one side of the aisle or the other are in the exact opposite side. Now, some people are very open about who they're for, but it's been very interesting to see how when you get people one-on-one, they're telling you they want X candidate to win or Y candidate to win, and sometimes I'm like, "Really? I can't believe it. You?" They're like, "Yep." And so it's what people think about people's political leanings is often exactly wrong, and that's been eyeopening for me. And I've seen that in university campuses too. And so it's going to be really, really interesting to see what happens in November.

**Lex Fridman**

In addition to that, as you said, most people are close to the center, despite what Twitter makes it seem like. Most people, whether they're center-left or center-right, they're kind of close to the center.

**Andrew Huberman**

Yeah. I mean, to me the most interesting question, who is going to be the next big candidate in years to come? Who's that going to be? Right now, I don't see or know of that person. Who's it going to be?

**Lex Fridman**

Yeah, the young, promising candidates. We're not seeing them. We're not seeing... Like, who? Another way to ask that question. Who would want to be?

**Andrew Huberman**

Well, that's the issue, right? Who wants to live in this 12-hour news cycle where you're just trying to dunk on the other team so that nobody notices the shit that you fucked up? That's not only not fun or interesting, it also is just like it's got to be psychosis-inducing at some point. And I think that God willing, we're going to... Some young guy or woman is on this and refuses to back down and was just determined to be president and will make it happen, but I don't even know who the viable candidates are. Maybe you, Lex. You know? We should ask Saagar. Saagar would know.

**Lex Fridman**

Yeah. Maybe Saagar himself.

**Andrew Huberman**

Saagar's show is awesome.

**Lex Fridman**

Yeah, it is.

**Andrew Huberman**

He and Krystal do a great thing.

**Lex Fridman**

He's incredible.

**Andrew Huberman**

Especially since they have somewhat divergent opinions on things. That's what makes it so cool.

**Lex Fridman**

Yeah, he's great. He looks great in a suit. He looks real sexy.

**Andrew Huberman**

He's taking real good care of himself. I think he's getting married soon. Congratulations, Saagar. Forgive me for not remembering your future wife's name.

**Lex Fridman**

He won my heart by giving me a biography of Hitler as a present.

**Andrew Huberman**

That's what he gave you?

**Lex Fridman**

Yeah.

**Andrew Huberman**

I gave you a hatchet with a poem inscribed in it.

**Lex Fridman**

That just shows the fundamental difference between the two.

**Andrew Huberman**

With a poem inscribed in it.

**Lex Fridman**

Which was pretty damn good.

**Andrew Huberman**

I realized everything we bring up on the screen is really -

**Lex Fridman**

Dark.

**Andrew Huberman**

- depressing, like the soccer player getting killed. Can we bring up something happy?

**Lex Fridman**

Sure. Let's go to Nature is Metal Instagram.

**Andrew Huberman**

That's pretty intense. We actually did a collaborative post on a shark thing.

**Lex Fridman**

Really?

**Andrew Huberman**

Yeah.

**Lex Fridman**

What kind of shark thing?

**Andrew Huberman**

So to generate the fear VR stimulus for my lab in 20 - was it? Yeah, 2016. We went down to Guadalupe Island off the coast of Mexico. Me and a guy named Michael Muller, who's a very

famous portrait photographer, but also takes photos of sharks. And we used 360 video to build VR of great white sharks. Brought it back to the lab. We published that study in Current Biology. In 2017, went back down there, and that was the year that I exited the cage. You lower the cage with a crane, and that year, I exited the cage. I had a whole mess with a air failure the day before. I was breathing from a hookah line while in the cage. I had no scuba on. Divers were out. The thing got boa-constricted up and I had an air failure and I had to actually share air and it was a whole mess. A story for another time. But the next day, because I didn't want to get PTSD and it was pretty scary, the next day I cage-exited with some other divers. And it turns out with these great white sharks, in Guadalupe, the water's very clear and you can swim toward them and then they'll veer off you if you swim toward them. Otherwise, they see you as prey. Well, in the evening, you've brought all the cages up and you're hopefully all alive. And we were hanging out, fishing for tuna. We had one of the crew on board had a line in the water and was fishing for tuna for dinner, and a shark took the tuna off the line, and it's a very dramatic take. And you can see the just absolute size of these great white sharks. The waters there are filled with them. That's the one. So this video, just the Neuralink link, was shot by Matt MacDougall, who is the head neurosurgeon at Neuralink. There it is. It takes it. Now, believe it or not, it looks like it missed, like it didn't get the fish. It actually just cut that thing like a band saw. I'm up on the deck with Matt.

**Lex Fridman**

Whoa.

**Andrew Huberman**

Yeah. And so when you look at it from the side, you really get a sense of the girth of this fricking thing. So as it comes up, if you-

**Lex Fridman**

Look at that.

**Andrew Huberman**

Look at the size of that thing.

**Lex Fridman**

It's the crushing power.

**Andrew Huberman**

And they move through the water with such speed. Just a couple - when you're in the cage and the cage is lowered down below the surface, they're going around. You're not allowed to chum the water there. Some people do it. And then when you cage-exit, they're like, "Well, what are you doing out here?" And then you swim toward them, they veer off. But what's interesting is that if you look at how they move through the water, all it takes for one of these great white sharks when it sees a tuna or something it wants to eat, is two flicks of

the tail and it becomes like a missile. It's just unbelievable economy of effort. And Ocean Ramsey, who is, in my opinion, the greatest of all cage-exit shark divers, this woman who dove with enormous great white sharks, she really understands their behavior, when they're aggressive, when they're not going to be aggressive. She and her husband, Juan, I believe his name is, they understand how the tiger sharks differ from the great white sharks. We were down there basically not understanding any of this. We never should have been there. And actually, the air failure the day before, plus cage-exiting the next day, I told myself after coming up from the cage exit, "That's it. I'm no longer taking risks with my life. I want to live." Got back across the border a couple days later, and I was like, "That's it. I don't take risks with my life any longer." But yeah, MacDougall, Matt MacDougall shot that video and then it went "viral" through Nature is Metal. We passed them that video.

**Lex Fridman**

Actually, I saw a video where an instructor was explaining how to behave with a shark in the water and that you don't want to be swimming away because then you're acting like a prey.

**Andrew Huberman**

That's right.

**Lex Fridman**

And then you want to be acting like a predator by looking at it and swimming towards it.

**Andrew Huberman**

Right towards them and they'll bank off. Now, if you don't see them, they're ambush predators, so if you're swimming on the surface, they'll -

**Lex Fridman**

And apparently if they get close, you should just guide them away by grabbing them and moving them away.

**Andrew Huberman**

Yeah. Some people will actually roll them, but if they're coming in full speed, you're not going to roll the shark. But here we are back to dark stuff again. I like the Shark Attack Map, and the Shark Attack Map shows that Northern California, there were a couple. Actually, a guy's head got taken off. He was swimming north of San Francisco. There's been a couple in Northern California. That was really tragic, but most of them are in Florida and Australia.

**Lex Fridman**

Florida, same with alligators.

**Andrew Huberman**

The Surfrider Foundation Shark Attack Map. There it is. They have a great map.

**Lex Fridman**

There you go.

**Andrew Huberman**

That's what they look like.

**Lex Fridman**

Beautiful maps.

**Andrew Huberman**

They have all their scars on them. So if you zoom in on... I mean, look at this. If you go to North America.

**Lex Fridman**

Look at skulls. There's a -

**Andrew Huberman**

Yeah, where there're deadly attacks. But in, yeah, Northern California, sadly, this is really tragic. If you zoom in on this one, I read about this. This guy, if you can click the link, a 52-year-old male. He was in chest-high water. This is just tragic. I feel so sad for him and his family. He's just... Three members of the party chose to go in. Njai was in this chest-high water, 25 to 50 yards from shore, great white breached the water, seized his head, and that was it. So it does happen. It's very infrequent. If you don't go in the ocean, it's a very, very, very low probability, but-

**Lex Fridman**

But if it doesn't happen six times in a row... No, I'm just kidding.

**Andrew Huberman**

A 120% chance, yeah.

**Lex Fridman**

Who do you think wins, a saltwater crocodile or a shark?

**Andrew Huberman**

Okay. I do not like saltwater crocodiles. They scare me to no end. Muller - Michael Muller, who dove all over the world, he sent me a picture of him diving with salties - saltwater crocs - in Cuba. It was a smaller one, but goodness grace. Have you seen the size of some of those saltwater crocs?

**Lex Fridman**

Yeah, yeah. They're tremendous.

**Andrew Huberman**

I'm thinking the sharks are so agile, they're amazing. They've head-cammed one or body-cammed one moving through the kelp bed, and you look and it's just they're so agile moving through the water. And it's looking up at the surface, like the camera's looking at the surface, and you just realize if you're out there and you're swimming and you get hit by a shark, you're not going to-

**Lex Fridman**

I was going to talk shit and say that a salty has way more bite force, but according to the internet, recent data indicates that the shark has a stronger bite. So I was assuming that a crocodile would've a stronger bite force and therefore agility doesn't matter, but apparently a shark...

**Andrew Huberman**

Yeah, and turning one of those big salties is probably not that... You know, turning it around is like a battleship. I mean, those sharks are unbelievable. They can hit from all sorts... Oh, and they do this thing. We saw this. You're out of the cage or in the cage and you'll look at one and you'll see it's eye looking at you. They can't really foveate, but they'll look at you, and you're tracking it and then you'll look down and you'll realize that one's coming at you. They're ambush predators. They're working together. It's fascinating.

**Lex Fridman**

I like how you know that they can't foveate.

**Andrew Huberman**

Right?

**Lex Fridman**

You're already considering the vision system there. It's a very primitive vision system.

**Andrew Huberman**

Yeah, yeah. Eyes on them, very primitive eyes on the side of the head. Their vision is decent enough. They're mostly obviously sensing things with their electro-sensing in the water, but also olfaction. Yeah, I spend far too much time thinking about and learning about the visual systems of different animals. If you get me going on this, we'll be here all night.

**Lex Fridman**

See? This is why I have this megalodon tooth. I saw this in a store and I got it because this is from a shark.

**Andrew Huberman**

Goodness. Yeah. I can't say I ever saw one with teeth this big, but it's beautiful.

**Lex Fridman**

Just imagine it.

**Andrew Huberman**

It's beautiful. Yeah, probably your blood pressure just goes and you don't feel a thing.

**Lex Fridman**

Yeah, it's not going to...

**Andrew Huberman**

Before we went down for the cage exit, a guy in our crew, Pat Dosset, who's a very experienced diver, asked one of the South African divers, "What's the contingency plan if somebody catches a bite?" And they were like... He was like, "Every man for himself." And they're basically saying if somebody catches a bite, that's it. You know? Anyway, I thought we were going to bring up something happy.

**Lex Fridman**

Well, that is happy.

**Andrew Huberman**

Well, we lived. We lived.

**Lex Fridman**

Nature is beautiful.

**Andrew Huberman**

Yeah, nature is beautiful. We lived, but there are happy things. You brought up Nature is Metal. See, this is the difference between Russian Americans and Americans. It's like maybe this is actually a good time to bring up your ayahuasca journey. I've never done ayahuasca, but I'm curious about it. I'm also curious about ibogaine, iboga, but you told me that you did ayahuasca and that for you, it wasn't the dark, scary ride that it is for everybody else.

**Lex Fridman**

Yeah, it was an incredible experience for me. I did it twice actually.

**Andrew Huberman**

And have you done high-dose psilocybin?

**Lex Fridman**

Never, no. I just did small-dose psilocybin a couple times, so I was nervous about it. I was very scared.



**Andrew Huberman**

Yeah, understandably so. I've done high-dose psilocybin. It's terrifying, but I've always gotten something very useful out of it.

**Lex Fridman**

So I mean, I was nervous about whatever demons might hide in the shadow, in the Jungian shadow. I was nervous. But I think it turns out, I don't know what the lesson is to draw from that, but my experience is -

**Andrew Huberman**

Be born Russian.

**Lex Fridman**

It must be the Russian thing. I mean, there's also something to the jungle there. It strips away all the bullshit of life and you're just there. I forgot the outside civilization exists. I forgot time because when you don't have your phone, you don't have meetings or calls or whatever, you lose a sense of time. The sun comes up. The sun comes down.

**Andrew Huberman**

That's the fundamental biological timer. You know, every mammalian species has a short wavelength. So you think like blue, UV type, but absorbing cone, and a longer wavelength absorbing cone. And it does this interesting subtraction to designate when it's morning and evening because when the sun is low in the sky, you've got short-wavelength and long-wavelength light. Like when you look at a sunrise, it's got blues and yellows, orange and yellows. You look in the evening, reds, orange, and blues, and in the middle of the day, it's full-spectrum light. Now, it's always full-spectrum light, but because of some atmospheric elements and because of the low solar angle, that difference between the different wavelengths of light is the fundamental signal that the neurons in your eye pay attention to and signal to your circadian timekeeping mechanism. At the core of our brain in the suprachiasmatic nucleus, we are wired to be entrained to the rising and setting of the sun. That's the biological timer, which makes perfect sense because obviously, as the planet spin and revolve-

**Lex Fridman**

I also wonder how that is affected by, in the rainforest, the sun is not visible often, so you're under the cover of the trees. So maybe that affects probably psychology.

**Andrew Huberman**

Well, their social rhythms, their feeding rhythms, sometimes in terms of some species will signal the timing of activity of other species, but yet getting out from the canopy is critical. Of course, even under the canopy during the daytime, there's far more photons than at night. This is always what I'm telling people to get sunlight in their eyes in the morning and

in the evening. People say, "There's no light, no sunlight this time here." I'm like, "Go outside on a really overcast day. It's far brighter than it is at night." So there's still lots of sunlight, even if you can't see the sun as an object. But I love time perception shifts. And you mentioned that in the jungle, it's linked to the rising and setting of the sun. You also mentioned that on ayahuasca, you zoomed out from the Earth. These are, to me, the most interesting aspects of having a human brain as opposed to another brain. Of course, I've only ever had a human brain, which is that you can consciously set your time domain window. We can be focused here, we can be focused on all of Austin, or we can be focused on the entire planet. You can make those choices consciously. But in the time domain, it's hard. Different activities bring us into fine-slicing or more broad-bending of time depending on what we're doing, programming or exercising or researching or podcasting. But just how unbelievably fluid the human brain is in terms of the aperture of the time-space window, of our cognition, and of our experience. And I feel like this is perhaps one of the more valuable tools that we have access to that we don't really leverage as much as we should, which is when things are really hard, you need to zoom out and see it as one element within your whole lifespan. And that there's more to come. I mean, people commit suicide because they can't see beyond the time domain they're in or they think it's going to go on forever. When we're happy, we rarely think this is going to last forever, which is an interesting contrast in its own right. But I think that psychedelics, while I have very little experience with them, I have some, and it sounds like they're just a very interesting window into the different apertures.

### **Lex Fridman**

Well, how to surf that wave is probably a skill. One of the things I was prepared for and I think is important is not to resist. I think I understand what it means to resist a thing, a powerful wave, and it's not going to be good. So you have to be able to surf it. So I was ready for that, to relax through it, and maybe because I'm quite good at that from knowing how to relax in all kinds of disciplines, playing piano and guitar when I was super young and then through jiu-jitsu, knowing the value of relaxation and through all kinds of sports, to be able to relax the body fully, just to accept whatever happens to you, that process is probably why it was a very positive experience for me.

### **Andrew Huberman**

Do you have any interest in iboga? I'm very interested in ibogaine and iboga. There's a colleague of mine and researcher at Stanford, Nolan Williams, who's been doing some transcranial magnetic stimulation and brain imaging on people who have taken ibogaine. Ibogaine, as I understand it, gives a 22-hour psychedelic journey where no hallucinations with the eyes open, but you close your eyes and you get a very high-resolution image of actual events that happened in your life. But then you have agency within those movies. I think you have to be of healthy heart to be able to do it. I think you have to be on a heart rate monitor. It's not trivial. It's not like these other psychedelics. But there's a wonderful group called Veteran Solutions that has used iboga combined with some other psychedelics in the

veterans' community to great success for things like PTSD. And it's a group I've really tried to support in any way that I can, mainly by being vocal about the great work they're doing. But you hear incredible stories of people who are just near-cratered in their life or zombied by PTSD and other things post-war, get back a lightness or achieve a lightness and a clarity that they didn't feel they had. So I'm very curious about these compounds. The state of Kentucky, we should check this, but I believe it's taken money from the opioid crisis settlement for ibogaine research. So this is no longer... Yeah, so if you look here, let's see. Did they do it? Oh, no.

**Lex Fridman**

No.

**Andrew Huberman**

Oh, no. They backed away.

**Lex Fridman**

"Kentucky backs away from the plan to fund opioid treatment research with settlement money."

**Andrew Huberman**

They were going to use the money to treat opioid... Now officials are backing off. \$50 billion? What? Is on its way over the coming years, \$50 billion.

**Lex Fridman**

"\$50 billion is on its way to state and local government over the coming years. The pool of funding comes from multiple legal statements with pharmaceutical companies that profited from manufacturing or selling opioid painkillers."

**Andrew Huberman**

"Kentucky has some of the highest number of deaths from the opioid..." So they were going to do psychedelic research with ibogaine, supporting research on illegal, folks, psychedelic drug called ibogaine. Well, I guess they backed away from it. Well, sooner or later we'll get some happy news up on the internet during this episode.

**Lex Fridman**

I don't know what you're talking about. The shark and the crocodile fighting, that is beautiful.

**Andrew Huberman**

Yeah, yeah, that's true. That's true. And you survived the jungle.

**Lex Fridman**

Well, that's the thing.

**Andrew Huberman**

I was writing to you on WhatsApp multiple times because I was going to put on the internet, "Are you okay?" And if you were like, "Alive." And then, I was going to just put it to Twitter - just like, "Are you okay? And if you're alive..." And then, I was going to just put it to Twitter - just like, "He's alive." But then of course, you're far too classy for that so you just came back alive.

**Lex Fridman**

Well, jungle or not, one of the lessons is also when you hear the call for adventure, just fucking do it.

**Andrew Huberman**

I was going to ask you, it's a kind of silly question, but give me a small fraction of the things on your bucket list.

**Lex Fridman**

Bucket list?

**Andrew Huberman**

Yeah.

**Lex Fridman**

Go to Mars.

**Andrew Huberman**

Yeah. What's the status of that?

**Lex Fridman**

I don't know. I'm being patient about the whole thing.

**Andrew Huberman**

Red Planet ran that cartoon of you guys. That one was pretty funny.

**Lex Fridman**

That's true.

**Andrew Huberman**

Actually, that one was pretty funny. The one where Goggins is already up there.

**Lex Fridman**

Yeah.

**Andrew Huberman**

That's a funny one.

**Lex Fridman**

Probably also true. I would love to die on Mars. I just love humanity reaching onto the stars and doing this bold adventure, and taking big risks and exploring. I love exploration.

**Andrew Huberman**

What about seeing different animal species? I'm a huge fan of this guy, Joel Sartore, where he has this photo arc project where he takes portraits of all these different animals. If people aren't already following him on Instagram, he's doing some really important work. This guy's Instagram is amazing.

**Lex Fridman**

Portraits of animals.

**Andrew Huberman**

Well, look at these portraits. The amount of, I don't want to say personality because we don't want to project anything onto them, but the eyes, and he'll occasionally put in a little owl. I delight in things like this. I've got some content coming on animals and animal neuroscience and eyes.

**Lex Fridman**

Dogs or all kinds?

**Andrew Huberman**

All animals. And I'm very interested in kids' content that incorporates animals, so we have some things brewing there. I could look at this kind of stuff all day long. Look at that bat. Bats, people thinking about bats as little flickering, little annoying disease carrying things, but look how beautiful that little sucker is.

**Lex Fridman**

How's your podcast with the Cookie Monster coming?

**Andrew Huberman**

Oh, yeah. We've been in discussions with Cookie. I can't say too much about that, but Cookie Monster embodies dopamine, right? Cookie Monster wants Cookie, right? Wants Cookie right now. It was that one tweet. "Cookie Monster, I bounce because cookies come from all directions." It's just embodying the desire for something, which is an incredible aspect of

ourselves. The other one is, do you remember a little while ago, Elmo put out a tweet? "Hey, how's everyone doing out there?" And it went viral. And the surgeon general of the United States had been talking about the loneliness crisis. He came on the podcast, and a lot of people have been talking about problems with loneliness, mental health issues with loneliness. Elmo puts out a tweet, "Hey, how's everyone doing out there?" And everyone gravitates towards it. So the different Sesame Street characters really embody the different kinds of aspects of self through very narrow neural circuit perspective. Snuffleupagus is shy and Oscar the Grouch is grouchy, and The Count. "One, two."

**Lex Fridman**

The archetypes of the-

**Andrew Huberman**

The archetypes-

**Lex Fridman**

It's very Jungian, once again.

**Andrew Huberman**

Yeah, and I think that the creators of Sesame Street clearly either understand that or it's an unconscious genius to that, so yeah, there are some things brewing on conversations with Sesame Street characters. I know you'd like to talk to Vladimir Putin. I'd like to talk to Cookie Monster. It illustrates the differences in our sophistication or something. It illustrates a lot. Yeah, it illustrates a lot.

**Lex Fridman**

[inaudible 01:24:44].

**Andrew Huberman**

But yeah, I also love animation. Not anime, that's not my thing, but animation, so I'm very interested in the use of animation to get science content across. So there are a bunch of things brewing, but anyway, I delight in Sartore's work and there's a conservation aspect to it as well, but I think that mostly, I want to thank you for finally putting up something where something's not being killed or there's some sad outcome.

**Lex Fridman**

These are all really positive.

**Andrew Huberman**

They're really cool. And every once in a while... Look at that mountain lion, but I also like to look at these and some of them remind me of certain people. So let's just scroll through.

Like for instance, I think when we don't try and process it too much... Okay, look at this cat, this civic cat. Amazing. I feel like this is someone I met once as a young kid.

**Lex Fridman**

A curiosity.

**Andrew Huberman**

Curiosity and a playfulness.

**Lex Fridman**

Carnivore.

**Andrew Huberman**

Carnivore, frontalized eyes, [inaudible 01:25:44].

**Lex Fridman**

Found in forested areas.

**Andrew Huberman**

Right. So then you go down, like this beautiful fish.

**Lex Fridman**

Neon pink.

**Andrew Huberman**

Right. Because it reminds you of some of the influencers you see on Instagram, right? Except this one's natural. Just kidding. Let's see. No filter.

**Lex Fridman**

No filter.

**Andrew Huberman**

Yeah. Let's see. I feel like -

**Lex Fridman**

Bears. I'm a big fan of bears.

**Andrew Huberman**

Yeah, bears are beautiful. This one kind of reminds me of you a little bit. There's a stoic nature to it, a curiosity, so you can kind of feel like the essence of animals. You don't even have to do psychedelics to get there.

**Lex Fridman**

Well, look at that. The behind the scenes of how it's actually [inaudible 01:26:21].

**Andrew Huberman**

Yeah. And then there's -

**Lex Fridman**

Wow.

**Andrew Huberman**

Yeah.

**Lex Fridman**

Yeah. In the jungle, the diversity of life was also stark. From a scientific perspective, just the fact that most of those species are not identified was fascinating. It was like every little insect is a kind of discovery.

**Andrew Huberman**

Right. One of the reasons I love New York City so much, despite its problems at times, is that everywhere you look, there's life. It's like a tropical reef. If you've ever done scuba diving or snorkeling, you look on a tropical reef and there's some little crab working on something, and everywhere you look, there's life. In the Bay Area, if you go scuba diving or snorkeling, it's like a kelp bed. The Bay Area is like a kelp bed. Every once in a while, some big fish goes by. It's like a big IPO, but most of the time, not a whole lot happens. Actually, the Bay Area, it's interesting as I've been going back there more and more recently, there are really cool little subcultures starting to pop up again.

**Lex Fridman**

Nice.

**Andrew Huberman**

There's incredible skateboarding. The GX 1000 guys are these guys that bomb down hills. They're nuts. They're just going-

**Lex Fridman**

So just speed, not tricks.

**Andrew Huberman**

You've got to see GX 1000, these guys going down hills in San Francisco. They are wild, and unfortunately, occasionally someone will get hit by a car. But GX 1000, look, into intersections, they have spotters. You can see someone there.



**Lex Fridman**

Oh, I see. That's [inaudible 01:27:48].

**Andrew Huberman**

Into traffic. Yeah, into traffic, so-

**Lex Fridman**

In San Francisco.

**Andrew Huberman**

Yeah. This is crazy. This is unbelievable, and they're just wild. But in any case.

**Lex Fridman**

What's on your bucket list that you haven't done?

**Andrew Huberman**

Well, I'm working on a book, so I'm actually going to head to a cabin for a couple of weeks and write, which I've never done. People talk about doing this, but I'm going to do that. I'm excited for that, just the mental space of really dropping into writing.

**Lex Fridman**

Like Jack Nicholson in The Shining cabin.

**Andrew Huberman**

Let's hope not.

**Lex Fridman**

Okay.

**Andrew Huberman**

Let's hope not. You know, before... I mean, I only started doing public facing anything posting on Instagram in 2019, but I used to head up to Gualala on the northern coast of California, sometimes by myself to a little cabin there and spend a weekend by myself and just read and write papers and things like that. I used to do that all the time. I miss that, so some of that. I'm trying to spend a bit more time with my relatives in Argentina, relatives on the East coast, see my parents more. They're in good health, thankfully. I want to get married and have a family. That's an important priority. I'm putting a lot of work in there.

**Lex Fridman**

Yeah, that's a big one.

**Andrew Huberman**

Yeah.

**Lex Fridman**

That's a big one.

**Andrew Huberman**

Yeah. Putting a lot of work into the runway on that. What else?

**Lex Fridman**

What's your advice for people about that? Or give advice to yourself about how to find love in this world? How to build a family and get there?

**Andrew Huberman**

And then I'll listen to it someday and see if I hit the mark? Yeah, well obviously, pick the right partner, but also do the work on yourself. Know yourself. The oracle, know thyself. And I think... Listen, I have a friend – he's a new friend, but he's a friend – who I met for a meal. He's a very, very well known actor overseas and his stuff has made it over here. And we've become friends and we went to lunch and we were talking about work and being public facing and all this kind of thing. And then I said, "You have kids, right?" And he says he has four kids. I was like, "Oh yeah, I see your posts with the kids. You seem really happy." And he just looked at me, he leaned in and he said, "It's the best gift you'll ever give yourself." And he also said, "And pick your partner, the mother of your kids, very carefully." So that's good advice coming from... Excellent advice coming from somebody who's very successful in work and family, so that's the only thing I can pass along. We hear this from friends of ours as well, but kids are amazing and family's amazing. All these people who want to be immortal and live to be 200 or something. There's also the old-fashioned way of having children that live on and evolve a new legacy but they have half your DNA, so that's exciting.

**Lex Fridman**

Yeah, I think you would make an amazing dad.

**Andrew Huberman**

Thank you.

**Lex Fridman**

It seems like a fun thing. And I've also gotten advice from friends who are super high performing and have a lot of kids. They'll say, "Just don't overthink it. Start having kids." Let's go.

**Andrew Huberman**

Right. Well, the chaos of kids is it can either bury you or it can give you energy, but I grew up in a big pack of boys always doing wild and crazy things and so that kind of energy is great. And if it's not a big pack of wild boys, you have daughters and they can be a different form of chaos. Sometimes, the same form of chaos.

**Lex Fridman**

How many kids do you think you want?

**Andrew Huberman**

It's either two or five. Very different dynamics. You're one of two, right? You have a brother?

**Lex Fridman**

Yep.

**Andrew Huberman**

Yeah. I'm very close with my sister. I couldn't imagine having another sibling because there's so much richness there. We talk almost every day, three, four times a week, sometimes just briefly, but we're tight. We really look out for one another. She's an amazing person, truly an amazing person, and has raised her daughter in an amazing way. My niece is going to head to college in a year or two and my sister's done an amazing job, and her dad's done a great job too. They both really put a lot into the family aspect.

**Lex Fridman**

I got a chance to spend time with a really amazing person in Peru, in the Amazon jungle, and he is one of 20 kids.

**Andrew Huberman**

Wow.

**Lex Fridman**

It's mostly guys, so it's just a lot of brothers and I think two sisters.

**Andrew Huberman**

I just had Jonathan Haidt on the podcast, the guy who was talking about the anxious generation, coddling the American mind. He's great. But he was saying that in order to keep kids healthy, they need to not be on social media or have smartphones until they're 16. I've actually been thinking a lot about getting a bunch of friends onto neighboring properties. Everyone talks about this. Not creating a commune or anything like that, but I think Jonathan's right. We were more or less... Our brain wiring does best when we are raised in small village type environments where kids can forage the whole free-range kids idea. And I

grew up skateboarding and building forts and dirt clod wars and all that stuff. It would be so strange to have a childhood without that.

**Lex Fridman**

Yeah, and I think more and more as we wake up to the negative aspects of digital interaction, we'll put more and more value to in-person interaction.

**Andrew Huberman**

It's cool to see, for instance, kids in New York City just moving around the city with so much sense of agency. It's really, really cool. The suburbs where I grew up, as soon as we could get out, take the 7F bus up to San Francisco and hang out with wild ones, while there were dangers, we couldn't wait to get out of the suburbs. The moment that forts and dirt clod wars and stuff didn't cut it, we just wanted into the city. So bucket list, I will probably move to a major city, not Los Angeles or San Francisco, in the next few years. New York City potentially.

**Lex Fridman**

Those are all such different flavors of experiences.

**Andrew Huberman**

Yeah. So I'd love to live in New York City for a while. I've always wanted to do that and I will do that. I've always wanted to also have a place in a very rural area, so Colorado or Montana are high on my list right now, and to be able to pivot back and forth between the two would be great, just for such different experiences. And also, I like a very physical life, so the idea of getting up with the sun in a Montana or a Colorado type environment, and I've been putting some effort towards finding a spot for that. And New York City to me, I know it's got its issues and people say it wasn't what it was. Okay, I get it, but listen, I've never lived there so for me, it'd be entirely new, and Schulz seems full of life.

**Lex Fridman**

There is an energy to that city and he represents that, and the full diversity of weird that is represented in New York City is great.

**Andrew Huberman**

Yeah, you walk down the street, there's a person with a cat on their head and no one gives a shit.

**Lex Fridman**

Yeah, that's great.

**Andrew Huberman**

San Francisco used to be like that. The joke was you have to be naked and on fire in San Francisco before someone takes it, but now, it's changed. But again, recently I've noticed that San Francisco, it's not just about the skateboarders. There's some community houses of people in tech that are super interesting. There's some community housing of people not in tech that I've learned about and known people who have lived there, and it's cool. There's stuff happening in these cities that's new and different. That's what youth is for. They're supposed to evolve, evolve things out.

**Lex Fridman**

So amidst all that, you still have to get shit done. I've been really obsessed with tracking time recently, making sure I have daily activities. I have habits that I'm maintaining, and I'm very religious about making sure I get shit done.

**Andrew Huberman**

Do you use an app or something like that?

**Lex Fridman**

No, just Google sheets. So basically, a spreadsheet that I'm tracking daily, and I write scripts that whenever I achieve a goal, it glows green.

**Andrew Huberman**

Do you track your workouts and all that kind of stuff too?

**Lex Fridman**

No, just the fact that I got the workout done, so it's a check mark thing. So I'm really, really big on making sure I do a thing. It doesn't matter how long it is. So I have a rule for myself that I do a set of tasks for at least five minutes every day, and it turns out that many of them, I do way longer, but just even just doing it, I have to do it every day, and there's currently 11 of them. It's just a thing. One of them is playing guitar, for example. Do you do that kind of stuff? Do you do daily habits?

**Andrew Huberman**

Yeah, I do. I wake up. If I don't feel I slept enough, I do this non-sleep deep rest yoga nidra thing that I talked about a bunch. We actually released a few of those tracks as audio tracks on Spotify. 10 minute, 20 minute ones. It puts me back into a state that feels like sleep and I feel very rested. Actually, Matt Walker and I are going to run a study. He's just submitted the IRB to run a study on NSDR and what it's actually doing to the brain. There's some evidence of increases in dopamine, et cetera, but those are older studies. Still cool studies, but so I'll do that, get up, hydrate, and if I've got my act together, I punch some caffeine down, like some Mattina, some coffee, maybe another Mattina, and resistance train three days a week, run three days a week and then take one day off, and like to be done by 8:39 and then I want

to get into some real work. I actually have a sticky note on my computer just reminding me how good it feels to accomplish some real work, and then I go into it. Right now, it's the book writing, researching a podcast, and just fight tooth and nail to stay off social media, text message, WhatsApp, YouTube, all that. Get something done.

**Lex Fridman**

How long can you go? Can you go three hours, just deep focus?

**Andrew Huberman**

If I hit a groove, yeah, 90 minutes to three hours if I'm really in a groove.

**Lex Fridman**

That's tough. For me, I start the day. Actually, that's why I'm afraid, I'd really prize those morning hours. I start with the work, and I'm trying to hit the four-hour mark of deep focus.

**Andrew Huberman**

Great.

**Lex Fridman**

I love it, and often report. I'm really, really deeply-

**Andrew Huberman**

[inaudible 01:38:27] Yeah.

**Lex Fridman**

It's often torture actually. It's really, really difficult.

**Andrew Huberman**

Oh, yeah, the agitation. But I've sat across the table from you a couple of years ago when I was out here in Austin doing some work and I was working on stuff, and I noticed you'll just stare at your notebook sometimes, just pen at the same position and then you'll get back into it. There are those, building that hydraulic pressure and then go. Yeah, I try and get something done of value, then the communications start, and talking to my podcast producer. My team is everything. The magic potion in the podcast is Rob Moore who has been in the room with me every single solo. Costello used to be in there with us but that's it. People have asked, journalists have asked, can they sit in? Friends have asked. Nope, just Rob, and for guest interviews, he's there as well. And I talk to Rob all the time, all the time. We talk multiple times per day, and in life, I've made some errors in certain relationship domains in my life in terms of partner choice and things like that, and I certainly don't blame all of it on them, I've played my role. But in terms of picking business partners and friends to work with, Rob is just, it's been bullseye and Rob has been amazing. Mike Blabac, our

photographer, and the guys I mentioned earlier, we just communicate as much as we need to and we pour over every decision like near neuroticism before we put anything out there.

**Lex Fridman**

So including even creative decisions of topics to cover, all of that?

**Andrew Huberman**

Yeah, like a photo for the book jacket the other day, Mike shoots photos, and then we look at them, we pour over them together. A Logo for the Perform podcast with Andy Galpin that we're launching, like, is that the right contour? Mike, he's got the aesthetic thing because he was at DC so long as a portrait photographer, and it's cute, he was close friends with Ken Block who did Gymkhana, all the car jumping in the city stuff. Mike, he's a true master of that stuff, and we just pour over every little decision. But even which sponsors. There are dozens of ads now. By the way, that whole Jawzrsizer thing of me saying, "Oh, a guy went from a two to a seven." I never said that. That's AI. I would never call a number off somebody. A two to a seven, are you kidding me? It's crazy. So it's AI. If you bought the thing, I'm sorry, but our sponsors, we list the sponsors that we have and why on our website, and the decision, do we work with this person or not? Do we still like the product? We've got ways with sponsors because of changes in the product. Most of the time, it's amicable, all good, but just every detail and that just takes a ton of time and energy. But I try and work mostly on content and my team's constantly trying to keep me out of the other discussions, because I obsess. But yeah, you have to have a team of some sort, someone that you can run things by.

**Lex Fridman**

For sure, but one of the challenges, the larger the team is, and I'd like to be involved in a lot of different kinds of stuff, including engineering stuff, robotics, work, research, all of those interactions, at least for me, take away from the deep work, the deep focus.

**Andrew Huberman**

Right.

**Lex Fridman**

Unfortunately, I get drained by social interaction, even with the people I love and really respect and all that kind of stuff.

**Andrew Huberman**

You're an introvert.

**Lex Fridman**

Yeah, fundamentally an introvert. So to me, it's a trade off – getting done versus collaborating, and I have to choose wisely because without collaboration, without a great

team, which I'm fortunate enough to be a part of, you wouldn't get anything really done. But as an individual contributor, to get stuff done, to do the hard work of researching or programming, all that kind of stuff, you need the hours of deep work.

### **Andrew Huberman**

I used to spend a lot more time alone. That's on my bucket list, spend a bit more time dropped into work alone. I think social media causes our brain to go the other direction. I try and answer some comments and then get back to work.

### **Lex Fridman**

After going to the jungle, I appreciate not using the device. I played with the idea of spending maybe one week a month not using social media at all.

### **Andrew Huberman**

I use it, so after that morning block, I'll eat some lunch and I'll usually do something while I'm doing lunch or something, and then a bit more work and that real work, deep work. And then around 2:30, I do a non-sleep deep rest, take a short nap, wake up, boom, maybe a little more caffeine and then lean into it again. And then I find if you've really put in the deep work, two or three bouts per day by about five or 6:00 PM, it's over. I was down at Jocko's place not that long ago, and in the evening, did a sauna session with him and some family members of his and some of their friends. And it's really cool, they all work all day and train all day, and then in the evening, they get together and they sauna and cold plunge. I'm really into this whole thing of gathering with other people at a specific time of day. I have a gym at my house and Tim will come over and train. We've slowed that down in recent months, but I think gathering in groups once a day, being alone for part of the day, it's very fundamental stuff. We're not saying anything that hasn't been said millions of times before, but how often do people actually do that and call the party, be the person to bring people together if it's not happening? That's something I've really had to learn, even though I'm an introvert, like hey, gather people together. You came through town the other day and there's a lot of people at the house. It was rad. Actually, it was funny because I was getting a massage when you walked in. I don't sit around getting massages very often but I was getting one that day, and then everyone came in and the dog came in and everyone was piled in. It was very sweet.

### **Lex Fridman**

Again, no devices, but choose wisely the people you gather with.

### **Andrew Huberman**

Right, and I was clothed.



**Lex Fridman**

Thank you for clarifying. I wasn't, which is very weird. Yeah, yeah, the friends you surround yourself with, that's another thing. I understood that from ayahuasca and from just the experience in the jungle, is just select the people. Just be careful how you allocate your time. I just saw somewhere, Conor McGregor has this good line, I wrote it down, about loyalty. He said, "Don't eat with people you wouldn't starve with." That guy is, he's big on loyalty. All the shit talk, all of that, set that aside. To me, loyalty is really big, because then if you invest in certain people in your life and they stick by you and you stick by them, what else is life about?

**Andrew Huberman**

Yeah, well, hardship will show you who your real friends are, that's for sure, and we're fortunate to have a lot of them. It'll also show you who really has put in the time to try and understand you and understand people. People are complicated. I love that, so can you read the quote once more?

**Lex Fridman**

Don't eat with people you wouldn't starve with. Yeah. So in that way, a hardship is a gift. It shows you.

**Andrew Huberman**

Definitely, and it makes you stronger. It definitely makes you stronger.

**Lex Fridman**

Let's go get some food.

**Andrew Huberman**

Yeah. You're a one meal a day guy.

**Lex Fridman**

Yeah.

**Andrew Huberman**

I actually ate something earlier, but it was a protein shake and a couple of pieces of biltong. I hope we're eating a steak.

**Lex Fridman**

I hope so too. I'm full of nicotine and caffeine.

**Andrew Huberman**

Yeah. What do you think? How do you feel?

**Lex Fridman**

I feel good.

**Andrew Huberman**

Yeah. I was thinking you'd probably like it. I only did a half a piece and I won't have more for a little while, but -

**Lex Fridman**

A little too good.

**Andrew Huberman**

Yeah.

**Lex Fridman**

Thank you for talking once again, brother.

**Andrew Huberman**

Yeah, thanks so much, Lex. It's been a great ride, this podcast thing, and you're the reason I started the podcast. You inspired me to do it, you told me to do it. I did it. And you've also been an amazing friend. You showed up in some very challenging times and you've shown up for me publicly, you've shown up for me in my home, in my life, and it's an honor to have you as a friend. Thank you.

**Lex Fridman**

I love you, brother.

**Andrew Huberman**

Love you too.

**Lex Fridman**

Thanks for listening to this conversation with Andrew Huberman. To support this podcast, please check out our sponsors in the description. And now, let me leave you with some words from Carl Jung. Until you make the unconscious conscious, it will direct your life and you'll call it fate. Thank you for listening and I hope to see you next time.