Your Questions Answered - Bret and Heather 83rd DarkHorse Po...

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**SPEAKERS**

Bret, Heather

**Bret** 00:11

Hey folks, welcome back to the Dark Horse podcast live stream number 83. Q and A's session with all kinds of madness. Yep. All right. So yeah, there's a certain amount of you know, yeah,

**Heather** 00:23

it's cute. All right. We have so many amazing questions this time. Even even more so than usual. I already feel bad about all the great questions we won't get through. So let's just do it. Because we're in the sink.

**Bret** 00:37

snapped in effectively. Yeah.

**Heather** 00:39

Okay. Is there any? Good? Okay. We start with three questions from last time, go to our discord question and then jump into some of the many questions from this time that are so good. Is there any benefit to being raised by biological parents as opposed to adoptive genetically unrelated parents?

**Bret** 01:03

Yeah, you want to? I'm ready. You go first. Okay. In one way, a simple yes. The simple Yes, is that the pattern is, especially in households in which you have a mixed brood between adopted and, and genetic children. There is a difference in things like injuries, abuse, all sorts of things. So that's probably reflective of a deeper pattern. And so yes, that is just that. That is not to say, though, that adoption doesn't work perfectly well. Especially in circumstances that that, that foster its functioning. So it's not an absolute answer. But yes, statistically speaking, that bias exists.

**Heather** 01:49

Yeah, I guess I would, there's, there's a lot to say here. What you said is true. Anecdotally, I grew up in a family of that description, and which I was the genetic child of, of my parents and my brother, you know, the four of us live together. And we're, you know, we're old, we were away, my brother. And I always told we looked like brother and sister. But he was adopted, and I was not. And the research evidence is a match for my anecdotal evidence that even though there were all attempts made to treat us completely equally it was it just didn't happen. And that is that has been observed across across situations that said, entirely genetic brood families and entirely non genetic brood families. might as well not have differences between them. And I don't I haven't seen the research there. But I would predict that, that parents who are loving, who have, you know, one or two or three kids, none of whom are their genetic kin, would likely not suffer in those families would not be in any way compromised by the fact that those children were not there. Yeah, precisely because sorry, precisely because, as you know, one of the main premises of our book, which I guess we'll talk about whenever our next live stream is because it's in Chapter One is that we are we are so much more software than hardware. Humans are We are at the point that we are born there is so much yet to be decided and discovered about who each of us is going to be that that that part of us that is determined by our genetics, is just far less important, relatively speaking in a human that it is even in a chimp or a wolf, and certainly that, you know, a sponge or a cedar tree

**Bret** 03:44

is also the case that adoption is probably wired into our software at the very least in a very ancient way. Absolutely. I've been lots of adoption of relatives on loss of a parent or something like that.

**Heather** 03:57

And there's adoption in other species as other primate species. Yeah. Not not stranger adoption.

**Bret** 04:02

Right. Right. Right. Stranger adoption is novel, but the point of its software is there it can be co opted. And it is also the case that when a family adopts, they're making a very deliberate choice. And so yeah, you know, there is the possibility

**Heather** 04:18

don't happen into adopting a child. Right. You don't adopt a child by accident. Yeah, yeah. And so you might therefore predict that such families would be more loving more, you know, more able to be fully present with their children. So how much credence should be placed in Garrett vandenbosch. His objection to ivermectin as a prophylactic this again a question from last week. And I don't remember enough about this a long time ago. Not that long ago, but it feels like a long time ago that you had the conversation with

**Bret** 04:51

there been a lot of bad arguments since

**Heather** 04:54

Yeah. And I don't know if he still feels the same way he did. Nor do I know exactly what

**Bret** 04:58

I don't know actually. So I can't The answer okay, but I should know. And I wanted to check back in with him anyway. This was an interesting moment. So I will do this. It was certainly an interesting,

**Heather** 05:11

interesting moment. Yeah. Yes, yes. True. What is your take on the political platform at Neil, for democratic president calm? That is I'm plugging a platform. I've worked on the last three or four years, but I think it's right up your alley. And you might find interesting. So I asked you while I was sorting all of these to take a quick look, I looked at it. And so Neal, number four democratic kneel for democratic

**Bret** 05:35

president calm. So forgive me, Neil, if that is in fact, your name. I hope I will, not butcher and having just briefly perused your site, your intent, but it seems to me that what he has done is kind of create a placeholder where he's going to kind of run for the office that he doesn't want and doesn't intend to take in order to hand it off to somebody who might be more suited to the job. Because he's not particularly ego driven. And he lays out some, some useful tools for thinking about political stuff and problem solving and, and things like that. And so I think he's a very dangerous person. Oh, really very dangerous. Yes.

**Heather** 06:22

I haven't seen it. But I can see on your face that I should be concerned. Well,

**Bret** 06:25

I'm sort of speaking for the powers that be right. Cool, you know, somebody like that, who's just kind of trying to do the right thing? Because somebody needs to do it. And dairy? Yeah. Well, I mean, jeez, if everybody started acting like that, you know, there'd be them, right? I mean, how would they distribute their garbage narratives? And yeah, how would we sell them shit? How would we sell them shit and make them do things and cow them into submission and all of the other stuff? So

**Heather** 06:53

why don't we call people into submission rather than shaping them into submission? Or bolt them into submission? Now? Why don't we kill them and not sheep them?

**Bret** 07:01

We talked about differently on sheep question. Be No, because it's, it's the action. So that's why you would bold them because ball could maneuver you into into, you know, quadrant of the pasture you didn't Why don't we move them

**Heather** 07:15

into submission?

**Bret** 07:16

Because they're too busy wolfing them down. I don't know I don't make this stuff up. I just respond to it.

**Heather** 07:24

Okay, from the discord this week. There were two questions and we're going with the second one. Why do bees keep putting up with us stealing their shit? What do they gain from being kept by us? Are we in a mutually beneficial relationship with bees? Or have we just enslaved them?

**Bret** 07:40

Oh, you so totally nailed it right there. Like one statement before the last day?

**Heather** 07:44

They always do. Yeah, they always do. Yeah, the dis the discord.

**Bret** 07:48

The discord that Yeah, the like all of the other critters that you want to feel terrible for because you think it's like a wild animal that you've plucked out of its life and inflicted death on? We are in a partner relationship that is spectacularly good for all of the creatures that we have partnered, that we have long partnered with. I would not make this argument at all, for the poor creatures who are captured for exotic foods or something like this. But

**Heather** 08:23

I mean, in fact, you make a strong argument against just that in your unheard piece. Yep,

**Bret** 08:28

it is. It is there. And I strongly believe this as much as I don't think this has anything to do with the bushmeat trade or the exotic animal trade,

**Heather** 08:38

other pandemics, other pandemics,

**Bret** 08:40

well almost certainly want HIV, HIV. But these things are barbaric in their own right, these trades and they do put us at greater danger than the other kinds of contact that you might might have with with wild creatures. But anyway, the point

**Heather** 08:56

is in beekeeping, not so much beekeeping Oh beekeeping.

**Bret** 09:00

beekeeping is good for bees.

**Heather** 09:01

Well, it's I mean, it's an interesting moment to be asking this, right. Like there's another part of human enterprise that is destroying bees, which we all know, right, like, you know, and it's not it's not universally agreed upon what is happening to the bees, but it almost certainly at least one big piece of the puzzle is the insecticides, things like glyphosate. So that has nothing to do with beekeepers, though,

**Bret** 09:23

right. So the point is the ancient relationship with bees or the semi ancient relationship with bees,

**Heather** 09:28

the HUD's are there they don't keep used to the hodza the hodza eat honey but they smoked them out and yeah, they still honey but they don't have a relationship with bees

**Bret** 09:36

right now. But the raising of bees is certainly positive for bees. And in fact, in North America, our bees are Asian imports, which is certainly good for them. We transported them across a gap we humans transported them across a gap that could not have covered. So anyway, yeah, there's lots positive from the B's perspective. You can say the same thing for chickens, sheep, goats, cows, everything else but The point is nothing says this is permanently a great relationship. And things get very different when you start factory farming and things like that. So what I would say is there is a healthy relationship. We shouldn't feel bad about having given these creatures such a great deal. But we actually have there's a, there's a contract, a moral contract between us and the creatures that we have. And we damn well better live up to it. Yeah.

**Heather** 10:25

All right, on to questions from this week. Dear HMB, could you please do a systematic analysis or series of pods or video, for each cited piece of ivermectin evidence in the flcc C's review PDF? We need your rational articulate analysis in a form that can be circulated and discussed worldwide. Thank you. I don't know. So this was this was one of the top monetary value questions, which occasionally I won't read them because they're just dub noxious and this wasn't abductions. Don't know if I'll do that. We've done some things very systematically and carefully. And there's a lot of moving things right now. And I just I'm not sure, but I appreciate hearing the request.

**Bret** 11:09

Yeah, I would say directly. There's a, there's a cost benefit analysis, what is the best use of our time? And I will say it's not, you know,

**Heather** 11:17

I would love for someone else to be doing that sort of like, you know, I always wanted great textbooks. Yeah. Well, there's a lot of reasons that I didn't use textbooks. One of them is that I don't like handing people per digested pap. But there was literally one book, aside from lab manuals when I was teaching comparative anatomy. That was nominally a textbook that I would ever consider giving to students. And that was peoc as evolutionary ecology. Yep. terrific, terrific book. Most textbooks are garbage. And it's really tough job. You know, it's a giant target. It's a moving target. The research is changing all the time. But I really, I always hoped for some other people who are great at what they were doing to really want to do that job. And this is the sort of thing that, you know, it's sort of more more in my skill set than yours ish. But I'd also don't think it's my highest and best use. So

**Bret** 12:07

no, it's not. And you know, I think, you know, I think, hey, look, we've won on lab like,

**Heather** 12:13

at least the first layer. This is, this isn't ivermectin right

**Bret** 12:17

now, but my point is lab link actually describes the proper way that this works. You know, there was a division of labor in the fight over the lab league. Yeah. And the people who were excellent at that other thing, did it. And in this case, you got a bit of a different situation, because you especially I think you and I, together are very good at analyzing these things. And you're very good at sorting the detail of exactly, you know, methodologically what happened, for example, but but, God, damn, there's a lot of failure. And yeah, we have become ivermectin all the time, and we could justify it, because it's a very, you know, because lives are at stake. But it's not the only place and so

**Heather** 13:00

well, it's different. The story isn't as technically complicated, right? Because it's not a question of an evolution and a potentially enhancing of evolution and, you know, and all the bits of the virus and and how its interacting with the body and the various systems in the body and all of that, which is just an amazing sort of scientific and detective story with regard to the origin. The what is the origin story of SARS GAVI to, or is ivermectin is a story, which is emerging from clinicians and from countries and so, you know, you're left with having to, you know, just receive data that you hope are good, and then assess how those data are analyzed. And, you know, I'm what, when I used to teach this sticks, I was very careful to teach the simplest possible because I hated the idea of people, having spent all this time generating money or observing a pattern, generating hypotheses, creating experimental design, collecting the data, and then shoving that into some black box of a statistical analysis that they had no control over that, then spit them out a number and they're like, guess computer says, Yes, sir. Computer says no. So I don't know, I don't trust and I don't know how to assess. Nor do I believe that most of the people who claim to know how to assess fully the very complicated system analyses that are being done for the most part, with these sort of meta analyses, actually know what they're doing. And, and I don't claim to know, I can get a few levels in but I don't I don't, I can't go all the way to baseline right now with these analyses.

**Bret** 14:40

All right. I now know what I think the answer to this question is okay. It makes no sense to do this. And the reason why it makes no sense to do this is that there's probably a ton to be said about the quality of those studies about their defects about the implication for their results, but the evidence is so far beyond what is necessary to apply a safe drug to an ongoing pandemic. Yeah, that the point is, you don't need that you're asking for precision when you've got enough accuracy to tell you to go.

**Heather** 15:07

Yeah, no. And I think that's why. That's why I just, like cleaned up the slides. And we're like, we're gonna show these slides, we're gonna, we're gonna just show these. And it rests on the idea that the data are what the data claimed to be. Yeah. But other than that, there's nothing to you like you come to your own conclusions. Look at, you know, these, these those slides that we showed in the first hour today. Simply, you know, if the data are what the data are claiming to be, here's case counts, here's fatality counts, before and after the introduction of ivermectin widespread across five different countries and in one of those countries across four different states. And you can look at what happened in states that did have ivermectin and what happened in a state that didn't. Yep. And come to your own conclusions, I guess. But I don't know how to look at those graphs. I don't actually I would like to hear what the the people who were saying there's no evidence, or you see what he's what they say in response to those. We're not claiming that those are hypothesis tests, right? But they, you know, one after another after another after another, and clinician saying, you know what, I'm just doing it

**Bret** 16:18

to wait as they are hypothesis tests. They are not hypothesis tests in the classic sense, okay. The fact is, every new country or every new province that applies ivermectin to a wave of COVID, is a test of hypothesis that ivermectin effectively treats COVID patients and prevents new infections period.

**Heather** 16:38

Yeah. Okay. So yeah, the first, the first time anyone does it on their own, not having thought not having seen data from elsewhere, and it's an observation and is the bunch of convergences. But presumably, at least let's just take the most obvious example, within India, unless all of those, whatever they're called Chief Ministers, did it on the same day simultaneously, they, you know, began to look and went like, Oh, actually, I'm gonna do what that guy did. Yep. Yep. Good. Canada has announced that for those who received the first dose of the AstraZeneca vaccine, the second dose can be either the AstraZeneca or the Pfizer or Madonna vaccine. Have you any thoughts on the logic to this? pS? Thank you both for keeping us sane last year. I think I think we talked about this. Yeah, I think last q&a.

**Bret** 17:26

Short answer is you would love to know what the competent torques are. But yeah, basically, there's nothing wrong with the logic that says they should work. But what we do know is that the expectations of how these vaccines work do not match what actually happens in the body.

**Heather** 17:40

Well, in both case, so AstraZeneca is DNA. Right? So AstraZeneca, and j&j are DNA and Pfizer, madana mRNA. But they're both using the spike protein. They're both, you know, basically coding for the spike protein that is then supposed to stick on the outside of your cells that your body is then supposed to recognize and then become immune to COVID, should you run into it. And so if that was all, as clean as it sounds like it should work, but the problem is that the spike protein doesn't seem to be sticking to the cells, and it's floating, circulating widely, and spike protein itself is a toxic mess.

**Bret** 18:13

Yeah. So the basic point is, vaccines do not work the way the brochure that describes them says they should, yes, possible that they do in some people and don't in others, but it is clear that there is an awful lot of leakage of spike protein that is supposed to stick in the cell surface. And in light of that, are you better off with two different? You know, there might be slightly different failure modes of the different vaccines? Maybe? You know, but

**Heather** 18:41

yeah, so maybe it's actually better. But you know, that those trials certainly haven't been done,

**Bret** 18:45

right? Yeah. Yeah, you can draw your own conclusions. But there's nothing fundamentally wrong with the idea of mixing between the vaccines because the whole point is you're informing your immune system with spike protein and a different mechanism that gets you there could be positive, it could be negative, it's probably not wildly different. But it could be that's a possibility

**Heather** 19:07

too. What is your opinion of insect repellent fabric such as insect guard which uses permethrin are they effective and safe? If not, how would you recommend navigating insect dense areas in the tropics? These are terrible for insects. They're they're simply terrible for insects, and they make your experience of war walking around the jungle, for instance, somewhat more comfortable, but you're killing insects. And what we saw when we were there last when we were the Amazon last January 2020. Was it still plenty of mosquitoes to bite you, but many, many fewer insects, and many, many fewer insectivorous birds and this wasn't just our observation, there are the data to support these observations that we you know, these these anecdotes, these annual observations that we made on the ground, we then found that one of the people was actually there. It's been doing pretty Surveys over the last several decades. And he said yep, they're plummeting, especially the insectivorous birds, because the insects are plummeting and you know why all is it you know, is it people's insecticide laden pants? Primarily? No, but it's not helping.

**Bret** 20:14

Yeah, I mean, I think these things probably aren't healthy for you. I always wonder you know the the stuff that is supposed to repel insects seems to be awfully toxic how much you know how much is the repelling based on the fact that you know the creatures have a detection for something toxic anyway. I never mess with insect repellent

**Heather** 20:36

Yeah, I remember back in the day, I think it was still a film camera back when I was shooting with some beautiful canon SLR and I was early enough in our in doing fieldwork that I did I did have DEET with me and I had applied it and been careful like you ups if you ever touch that stuff just don't touch anything else like you'll you'll kill amphibians almost on contact, but i just i thought i'd clean myself off and I went to hold the camera and I left a impregnated fingerprint that had melted the plastic on the back of my Canon camera body. And I was like that's it I'm yuck I am I am through

**Bret** 21:18

Yeah, but the other thing I mean, haven't been a fan of deep since I was a

**Heather** 21:24

Yeah, and permethrin is chrysanthemum based like this this is a botanical it's better

**Bret** 21:28

botanicals certainly the way to go if you're going to do it and you know there is something to be said for something that you're not wearing right? primary I read from candle downwind view for example there's also something to be said for understanding how the mosquitoes find you that they're basically following co2 plumes and that you can therefore you know, if you create a co2 plume is liable to be followed by mosquitoes it is certainly worth saying that if you're not breathing

**Heather** 21:53

does that

**Bret** 21:54

yeah but breathing in one place airflow all those things

**Heather** 22:00

it could have been taken to be suggesting that just you know sees your co2 plume and you're safe

**Bret** 22:05

there are some people I wouldn't mind cnmc stare co2 plume but but nonetheless now first of all it got to say if you're fearing the tropics because as bad as things are mosquito wise here in the temperate zone, they've got to be worse than the tropics This is just not true. The absolute worst places are you know, like, you know, places and I've been in worst mosquito I ever saw. We're in Maine, right? I know. Montana Alaska I've heard

**Heather** 22:32

Yeah, but I mean there for those of you who aren't as attractive to the mosquitoes as those of us who are you know, it certainly can be bad especially if you're doing like animal behavior which requires that you actually just sit still and keep your co2 plume where it is. And you know, I did for instance, I as you know, I began carrying mosquito coils like little mosquito coils and was like circling around my head to keep them away and I you know, set myself on fire because I was actually watching frogs and you don't need Yes, I'm

**Bret** 23:03

diving bell.

**Heather** 23:04

I need a diving bell. Alright, you don't need

**Bret** 23:07

them, but okay, mosquitoes are bad in the temperate zone. They're different bad in the tropics. Yeah, there are often ways of managing them that people who have to deal with them No, and learning their tricks is much better than importing some technological fix. Don't

**Heather** 23:21

set yourself on fire. But don't set yourself on fire. Yeah, indeed. Luckily, I was in the jungle, so I didn't it didn't spread right. smolder to bed, left a hole in my quick dry pants. Okay, next question. What do you do evolutionary biologists think about the possibility of life in our solar system beyond Earth. What about Europa or the moons around Saturn? Brett you get extra points if you can add a dad joke into your response

**Bret** 23:49

Oh, I mean the performance anxiety in this room

**Heather** 23:53

I shouldn't have read that last part that he wouldn't have known about the extra points so So

**Bret** 23:58

next I think I get points for the performance anxiety thing yeah okay all right.

**Heather** 24:03

Okay sure. Yeah, how many points this is this is lefty but not liberal no no no sorry lefty but not loony? Nice very good cool. I doubt it I think there's certainly life elsewhere in the galaxy even and I hope for conscious life elsewhere in the galaxy even but in the solar system. I doubt it I don't think so. Yeah there's something Yeah, I don't I don't feel like absolutely no no way no how but I doubt it

**Bret** 24:32

Yeah, I my my instinct is the preconditions for life. Are the question that if you get the right preconditions, the cascade of selective events that then results in adaptation and

**Heather** 24:45

our idea our idea of Goldilocks zone is real very human centric. So you know moons of Saturn. Yeah, but it's pretty freakin chilly out there it is, but Goldilocks zone is you know our bias,

**Bret** 24:56

but it's but I'm not even talking about that. I'm just talking about the The lack of energy, the lack of energy and how dynamic a system it creates, and whether that results in the kind of selection that is necessary to get you all the way to adaptation. I'd love it. I'm not expecting something super cool on the moon of on Europa or Yeah, it's it's, yeah, yeah.

**Heather** 25:18

It's gonna be Matt like, Matt we're feeling like right? Yeah. planktonic who's like

**Bret** 25:23

who's, but I mean, how cool would it be to? You know, see a little lose that didn't come from here. Right? I think it would be great. You and I both.

**Heather** 25:32

It's part of why we're together.

**Bret** 25:34

Yes. Yes. Get excited about you know, didn't come from here. A, what would you call it? It's a properly exotic who's?

**Heather** 25:43

Yes, properly exotic. Who's that wouldn't recognize high tea but hitting its face? If it even has a face? Most probably doesn't know it doesn't tend to. Okay, this is a I think it's one question but some three parts here. You said that schools primary defect was that it didn't fit normal human motivational structures, and that school should be self rewarding, such that you were not driven to succeed to please others. I was raised in a family culture and it's a it's a female name asking the question. I was raised in a female culture where excellence in school was the golden ticket at a financial hardship. Growing up, there was no demonstrated interest whatsoever in the actual workings of the subject of study. Five years post graduation, I have a biocide degree from the top College in my country, I find myself depressed, apathetic and unmotivated, resentful, and fearful of learning and making mistakes. Any advice on how I could stop being a cog in a job I hate and work toward acquiring knowledge and skills that I'm interested in and fulfilled by

**Bret** 26:42

tragic, it is tragic. But I also think I also think that there's there's hope for Yeah, because what you need is to find the question, the venue, whatever it is, where your search can lead you to something important enough that you will understand it to be a very good thing to have found it. And even just the fact of searching for it will cause there to be a, you know, a hunger. And so anyway, my point is really about foothills, right, that the key for figuring out how to retool yourself is finding the event that constitutes your first taste of that other thing that you want to accomplish. And that you can learn from that allows you Oh, that was pretty good. That was cool. That was a small eureka moment, but I liked it. Right? And then the point is, we'll Okay, if that's how you get to that one. What else would I be interested in? Maybe bigger game, right?

**Heather** 27:36

Yeah. Well, and that's, you know, it, it probably feels like it's too late. But it's not me. And frankly, you wouldn't be asking this question here. If you really, really thought it was too late. And at some level, it's never too late. I do think that much of the world and much of science and many scientists teach science, you say you have a biocide degree, as if it's the textbook, it's rote learning, it's rote memorization. It's feeding back lists of facts. It's, you know, if you have a bullet point list, then you have the thing. And that's really the antithesis of science. Right? That's like, the conclusions of science that we think are true at one time. And hopefully, we're mostly accurate, but it's not what science actually is. And so trying to figure out, you know, trying to remember maybe where you have been interested in, you know, where there have been little glimmers of like, Oh, I wonder I wonder what I wonder if I wonder why in the arena where you are working, you know, start to pursue those and you know, find the foothills as Brett says and, and and move from there.

**Bret** 28:41

Yeah, I'm reminded of what students first reaction when you take them into a tropical forest often is, right, where you know, our experiences, there are questions all over, right? You walk through the forest, and most of the questions are a little right. But they're there. And they, they shout themselves at you if you know how to listen. But until you know how to listen, it just looks like a sea of green. And this.

**Heather** 29:10

I mean, this is something I actually wrote into my first book, right that this was exactly my concern. When our first Professor walked us into, into the forest in Costa Rica. He said, You know, he sort of opened up his arm and said, look at all the questions. It's like, all I see is green. Like, I don't see any questions at all.

**Bret** 29:31

Right? But if you know, I mean, let's, let's say that it took you two weeks, right? And you don't, you're walking and you don't see a single question. You see some cool stuff, but you can't figure it out. If it took you two weeks to get your your first question, which your first very long, it's not very long. And your first question is the key to understanding you get a search image, so called for such things and so to the extent that you've found one, and the point is Oh, well alright, I know how I found that And then you find a bunch more like it and then you find a few that aren't like it. And next thing you know, they're all over the place. So, something like that. Good luck.

**Heather** 30:08

Yeah. We have three, just wonderful comments here. All send money to these good, honest thinking people, critical thinkers support our own economy to feed those willing to consider ideas against the priests and Pharisees of our time masquerading as scientists. Like you. That's awesome. Thank you. And thank you, Heather and Brett for being guiding lights in a time of darkness sanity in a time of insanity, curiosity in a time of absolutes, free thinkers in a time of forced compliance of thought. I just bought the book on Audible. Awesome, awesome. And thank you, Heather. Thank you, Brett. Much appreciation from Somerset, England. You were the highlight of my week. And then this, did you know that Amazon lists Dianetics as a related product to your book? Also, Heather, please allow Brett to make more dead jokes. The painful jokes outweigh the pain from working. No, I did not know that Amazon lists Dianetics as a related product and what the hell are they doing?

**Bret** 31:10

Yeah, what? What is that?

**Heather** 31:11

I don't know. It's it's beginning.

**Bret** 31:16

Yeah, it may be right, right. Okay. Oh,

**Heather** 31:23

no, that's all Ron Hubbard, right? Yeah. It's not a cult. It's evolution. God's sake,

**Bret** 31:31

you're talking about our thing. Our thing? Yes.

**Heather** 31:35

This all of its functional medic suggests that fasting could be a reset for gut health hypothesis extends to autoimmune disorders, hormone and insulin suppression is key. Have you seen any research that feels evolutionarily likely? So I'm not sure exactly what that final evolutionarily likely exactly means? But yeah, we've we've talked here, I'm not sure we talk actually much in the book in our in our food chapter about intermittent fasting. But we have talked here before and elsewhere about both the physiological evidence for it being a great way to reset gut health and basically decrease inflammation, which seems to be one of the key factors in so much illness among so many moderns. But then another, another completely different line of evidence for its value, is how many different cultural traditions use some form of intermittent fasting. Right? So you know, from Well, at the moment, I'm only coming up with one which is, you know, Ramadan, for Muslims, but there there there are many peoples and traditions across time and space, that have used IMF intermittent fasting in some form. And that suggests right there that there is some value to it.

**Bret** 32:45

Yes, it is also the case that whether one chooses to do it or not, and ancestor would very likely have faced it enforced by the environment, and it's uneven rate at which it coughs up things to eat. So anyway, yes, there's an argument to be made for the fact that Yeah, your system is built for it.

**Heather** 33:05

Yeah, and, you know, I usually don't like the metaphor of like a cleansing. But I think there's some accuracy there here. If you don't take it too far that you're getting getting yourself got empty on, you know, it least and sporadic basis, if not a regular basis, will help make sure that your stuff doesn't build up. Yeah, yeah. And it's not it's not perfect, but I think it's okay,

**Bret** 33:30

by analogy to there's lots of things that we now know require sleep to function, you know, in an illogical things, for example. And the point is that cycling rather than always being sort of doing something

**Heather** 33:45

Yeah. And sleep Yeah, sleep comes easier sleep, come sleep is better. Sleep is deeper. Sleep is more healing. Obviously not if you're starving. Yeah. But if it's been more, I don't know, something like more than four hours since you've eaten, right? If you're actually, you know, certainly if you've got alcohol in your system, recently, you know, it feels easy to fall asleep, but you're really just passing out even if you've only had a couple of drinks. Like it's not it's not sleep that you're falling into really, and it's a disturbed sleep. It's I say that, you know, we drank it, and it totally

**Bret** 34:14

messes up your, your dreams. Yeah, cycles, too. And so all sorts of processing. So I guess that's the point is that there is some sort of ancestral pattern of you don't always have the, you know, your ancestors didn't have a refrigerator, right up until very recently. very recent ancestors had a refrigerator just slightly farther back and an icebox and then pretty much nothing. Maybe they had a cave, you know, my ancestors. I'm not the boss of your ancestors. But in any case, there would have been an awful lot of inadvertent fasting yet, right.

**Heather** 34:53

Let's call it intermittent and pretend we were trying to do that. Let's be cats about this. I will call it sell it. But But no, but it is built into a lot of, you know, fasting and then feasting. It is built in. Yeah, a lot of cultural traditions as well.

**Bret** 35:08

Well, I guess the thing of confession I don't really know what they mean by intermittent fasting means it seems to me like if it's not intermittent, it's famine. Is that wrong?

**Heather** 35:19

What they mean is periodic. So like, regularly, like it's either circadian or periodic. weeklies but yeah, so it's like it's on a schedule, I think. Right? Okay. But

**Bret** 35:31

yeah, internet written does not. It's not a good description, but in any case,

**Heather** 35:40

setting. Oh, oh, can they hear what you're saying? Zach. Okay, so yeah, you could so Zach, our producer, who is currently not speaking into it, Mike says, think of the intermittent setting on windshield wipers Zack who drives now? And well, two drives Well,

**Bret** 36:01

apparently knows how to use this winch.

**Heather** 36:03

Yeah, no, isn't it? Well, he does live in the Pacific Northwest. So that's not that surprising. But he points out that it's like the intermittent setting on winter wipers, which is just the medium, the medium thing, and I guess both of those uses of intermittent are not generally what I think of when I think intermittent.

**Bret** 36:18

No, I think of the maddening phenomenon when something is wrong with your vehicle. But the problem is intermittent. So you

**Heather** 36:24

take it, like I know what's not happening, right? Exactly.

**Bret** 36:28

So I'm not sure it's all that helpful. I think periodic fasting would be a much better, better description. But anyway, because that's a an ancient phenomenon that would have been enforced by nature. If nothing else, a lot of things may sort of expect it to be and to the extent that you disrupted with refrigerator phenomenon, you don't know how to do any cascading effects. There'll be absolutely.

**Heather** 36:52

I just picked up my ivermectin to implement as a prophylactic. I understand that your family has chosen that mode as well. What dose do you recommend? Incidentally, my doctor refused to prescribe me ivermectin and suggested either I think there's a word missing here, either of t. Two, which I said no, I think it's probably either the vaccines maybe? I'm not sure. The doctor prescribed it. The doctor did prescribe it told me to take one a week for three weeks thoughts would be protected. So go on to the flcc website and look for the mask plus plus cost protocol.

**Bret** 37:29

Yeah, but I will say so I have to say this. We are not doctors, we are scientists, we are not in a position to give you medical advice. We can tell you something about how we look at things and you can take it as you will. But the thing that I would say is the data and I was specially especially struck by the fact that there are apparently very strongly measurable effects in populations that use ivermectin for preventing parasites preventing and treating parasites, and that those usages the prophylactic use is much rarer than the prophylactic dose that one would extrapolate from the FL CCC documents. So here's the question. It seems that this drug is very, very safe. So there may be I wouldn't, you know, no drug is perfectly safe. All drugs have impacts on your liver. And I don't want to be on anything for the rest of my life. Right? Right. My assumption is that, you know, hopefully we get a handle on community, tanks months to a couple of years. And anyway, it's not that long. I do too. But you know, a couple of years. seems likely to say but here's the question what we are not finding out because we are busy pretending that there is no evidence that this works. is we are not finding out. Okay, one of the studies the Argentina study showed 100% effectiveness, not a huge study, but it was 800

**Heather** 38:58

Well, just let's let's just be careful. So it was 800. So it was like 790 something so call it 800. Who were given the ivermectin protocol and 400, who are not of those 800 some considerable fraction, I don't know what the number is some considerable fraction actually exactly follow the protocol of that considerable fraction of the 800 who've perfectly followed the protocol, there was 100% efficacy, but there were some people in that 800 again, I don't know the percentage who didn't totally follow the protocol. And they were not totally completely covered. Okay, from COVID. But presumably to be

**Bret** 39:33

perfectly perfectly accurate and precise, if possible. Presumably, a category that says the binary category did or didn't follow the protocol did follow the protocol means one thing and one thing only didn't follow the protocol can mean anything. Yep, anything except the one thing. So what that means is there can be people who didn't take any in that group. So if we limit the analysis to those who follow the protocol, we see something like 100% protection are not claiming that that pattern would continue. If you got a much larger data set, it might it might not I don't know.

**Heather** 40:06

But there's no a priori reason to think it wouldn't. Well, right.

**Bret** 40:10

And the point would be this if you if you are always right, but 100% protection suggest that the dose is too high. Right? Right, what you really want because assuming that the dose was not chosen, for some reason that reached 100%. And probably we don't know what dose reaches 100%, because you need a lot of study to figure out exactly what that dose is. The point is, it's probably a guess. And so if it gets if it gets reaches 100%, then what you want to do is say how much in excess is that guess of the necessary thing you want to back it off until you get to the number where 100% is just barely maintain.

**Heather** 40:56

And this is actually related to an important point that we should probably make on the main podcast at some point, which is that at you know, and actually, this is something I found when I first started looking into ivermectin, whatever, that was couple three weeks ago now, which was one of the first things you run into is, but the dose basically, the dose needed to treat is 100 times the toxic level, you know, the recommended level, and it's guaranteed to be toxic, and therefore you can't use it. And what that number is based on is some animal trial, some animal model trial in which they just chose an amount. They just chose a dosage, and found, indeed, that it was protective. But they they weren't saying that's the dosage that you need, right? They were just saying, well, this is the first one we tried, and it worked. And so what you then do is you titrate isn't the right word, but you basically back it off in successive trials, which is effectively we've ever had done and like Slovakia and Czech Republic and Panama and Mexico and India and all these other countries.

**Bret** 41:55

I don't think it was an animal trial. I think it was a tissue trial.

**Heather** 41:59

Oh, yes, no, you're right. It was in vitro, right? Yeah. So

**Bret** 42:02

yes, so even worse, because even really it right? Yeah, Wheatley, it's completely missing formative because really, I'm not saying that the experiment was bad. But what it was was in the early in the early days of COVID, right? You have a disease. You don't know what might work, right? You don't want to you know, give some

**Heather** 42:26

anti helminth drug

**Bret** 42:27

you don't want to give such a weak dose of a drug that something useful shows no effect so you err in the direction of let's just see vitro like

**Heather** 42:36

you're not you're right, you're not even harming lab animals, but you shouldn't want to harm but you know, like, right vitro, you're doing like, this is doing no harm. It's just a quick and

**Bret** 42:44

dirty survey to see what molecules show promise and are worth studying. So to take that as if it's an idiot these people think that dose is tolerable to people. Oh, nobody said that. Right. What they're doing is they're just looking for what molecules work. Yep. So anyway, that's Yes.

**Heather** 42:58

Good. Yeah. On a related note, what's up with hissing? Cats his geese his my ex girlfriends hiss. Why is that a common warning? Also, you shouldn't be wearing hats like those without a bolo tie. This is owl Quinn again. He always wants you in a bolo tie. Not me though. I'm not wearing a bolo tie. But neither are you. True. I mean, I don't think my hat requires a bolo tie. Doesn't Yeah, my hat which is now still a very weird color for me, because my red hat got destroyed in the boat accident. Right? That was the death of the Red Hat. Anyway,

**Bret** 43:31

I'm near the death of you but yes, yes.

**Heather** 43:33

I lost a treasured people but hat Yep. A bunch of other stuff but Okay, what's up with hissing apparently Al's ex girlfriend's hiss and cats his and geese hiss and other things

**Bret** 43:46

how could this person how I see my Al's a guy How could aliveness cockroaches

**Heather** 43:51

yeah and Madagascar the cockroaches Yeah,

**Bret** 43:55

I just think wild guess. I think this is gonna start with some creature and this is like APA somatic but it sounds so APA somatic is when a creature is colorful or has a pattern on it that alerts you that it shouldn't be messed with because it wouldn't have such a bold pattern if it was tasty for example. So in any case, if you imagine that there are you know if there are snakes that hiss and there are

**Heather** 44:21

well I was just gonna say I think I know you're going to like Apple sematic for the sound a snake makes as it tastes the air

**Bret** 44:30

well I don't know I was imagining you think

**Heather** 44:32

they're actually actively hissing as opposed to that's because that's the like, that's the the two pronged right tongue out that then goes into the vomeronasal organ sure,

**Bret** 44:41

but I haven't noticed the sound but I you don't get close enough to snakes ma'am. Small ones to the sound maybe is not that perfect. I have never heard a sound from from a snake tasting the air and doing the vomeronasal thing. But I do think that there are some snakes that his that I may be responding to a myth. I was hoping that you'd know as the as the herpetologist of the two of us.

**Heather** 45:04

Yeah. I don't know.

**Bret** 45:08

Well you know what we're gonna find out really soon, right? People are gonna contact us but if in fact there is some frightening creature that hisses I mean, I guess

**Heather** 45:16

I was saying I think snakes do his but I don't think it's a particular subset of of snakes, but I'm not sure about that. It's not that I never occurred to me of snakes. It's like yes, snakes,

**Bret** 45:26

snakes as well. If snakes hips, then it's probably an allusion to that. And in fact, we can come up with another example. You're probably going to know which snake and there's more than one, but there's at least one snake that is not a rattler, but uses dry leaves and wiggles its tail to create a rattle like sound. Oh, yeah.

**Heather** 45:49

Yeah, someone that's sympatric with rattlesnakes, but of course, rattlesnakes are kind of big broad range. Yep. Yeah, I can't think I mean, it may even be just you know, also garter snakes are also ubiquitous, big broad range. They may do it. But it might, it might more likely be someone who's also visually epistatic. Yeah, Lee copying rattlesnakes? I can't I think I think that is a known behavior. And I can't think of what else

**Bret** 46:15

I've read about it. And I've heard but I can't remember.

**Heather** 46:18

I could go get my big book of snakes. It's a good one. Next time, all right. We didn't really we didn't. We're good. Congratulations to Zach on making it to rocketry championships. Your son is literally rocket scientist and the unsung hero of the Dark Horse podcast. Yes, he is. Yeah, he's awesome.

**Bret** 46:37

I'm sorry, I have to correct you. We think to him sometimes when he refuses to get out of bed in the morning. He doesn't like it which is why it works.

**Heather** 46:46

So he's been sung he's not the unsung he's the son here of the son of the Dark Horse You know, I think even though he me probably it's not his favorite moment to be sung to if we picked a different song he'd probably appreciate wasn't Apollo. Yeah, he says any other song when we picked the worst song we could think of? And also remember the lyrics to? Yes, yeah, maybe we'll just leave it at that and let people guess. I think we will. And maybe we'll tell you next time anyway,

**Bret** 47:11

it's not it's raining men. Might be a close second.

**Heather** 47:21

What advice would you give a 46 year old wanting to learn more about math? I am right brain thinker who never grasped anything beyond the basics. Thank you, Alison. But it depends on what kind of math you're talking about. You know, something like Khan Academy is really, really great actually. And you know, they have they have better and worse arenas but but it's it's pretty great. I guess I guess I would want to know what like what what kind of math you're interested in the, you know, the the Twitter account run by our friend. It's called great women of mathematics. GW, oh, maths is terrific. And you pick up math here and there. And he also does sort of, you know, history of math stuff, but it's also got actual math. Yes, it is.

**Bret** 48:12

It is open to you, no matter what you were identified as at birth. Sorry. All right. I have now interrupted your flow.

**Heather** 48:25

Oh, go for it. Well, I have to say about mouth.

**Bret** 48:28

I was gonna add one thing. I don't have anything really useful to offer on how do you get into math, I would say the thing I experienced was whether or not you had a teacher who loved the subject and understood it deeply made all the difference. Math was incredibly painful when the teacher didn't really get it or care.

**Heather** 48:48

So that was, that's hard for a 46 year old, right?

**Bret** 48:51

But in that vein, I was going to recommend a particular mathematical thing that I thought was super cool and actually points you to a teacher that I would recommend. Vi Hart who is on YouTube has a number of videos that are that spelled vi I think h AR T. Anyway, Vi Hart has one video I would suggest you start with which is on the Fibonacci sequence in nature. I think it's pretty marvelous. This is my heart. Yep, that's my heart attack. You can show this briefly. Okay, anyway, her thing is a cool a cool channel. And, and the Fibonacci sequence in nature thing is especially good because I will just, I think we've talked about it once before, actually. But you if you look around in plants, and you see all the Fibonacci sequences, you think, my God, what's going on here are the plants better at math than we thought. And in fact, something else entirely is going on. And those are Fibonacci sequences, but they got there a different way and they're there for a really good reason. It's super cool. So anyway, we could return to that some other time. But but it's cool stuff. And I

**Heather** 50:04

guess I would say, you know, again, you know, this, this won't be helpful because it's, you know about the particular situation that I had growing up. My father is a mathematician, and he instilled in me such a deep love of math, because it was it was everywhere. And we were always playing at math. And he had actually, when I announced that I was going to become biologists He's like, why biology is the least interesting science. I think before he died, we managed to

**Bret** 50:28

compel him I think that that was like yeah, it was not his instinct was not

**Heather** 50:33

his instinct. And so when I was growing up playing in math space all the time, it wasn't about you know, finding Fibonacci sequences and plants it was much more Well, it was about practical was about engineering is about putting up fences and you know, making sure things didn't fall in such and purely abstract and just like the beauty of the numbers, and for me, that got me there, but I'm not sure that that if you were coming late to it that you that you would,

**Bret** 50:59

you know, I wish now that you mentioned that, given that your dad was not on board with biology at first, that we had been able to have the conversation with him about Mandelbrot. Right so my, my investigation of Mandelbrot got cut short by what happened in in 2017 at evergreen. But the insight that drove Mandelbrot to discover what he did this is fractals guy was fractals was that effectively math as instantiated at the time is inadequate to deal with biology. Right that there are processes is 19th century he's no, he's 20 century. In fact,

**Heather** 51:42

he Oh, yeah. Okay. Yeah, I

**Bret** 51:44

had him. He may still be alive. Really? Probably not. But anyway, yeah. That I think was a Bell Labs. No, he was at IBM, I think. But anyway, he, he noticed that there were certain mathematical problems that created paradoxes that needed some different kind of mathematics. So for example, if you have a shoreline, and you want to know what the the distance along the shore is, the finer and finer you measure, the greater the distance because you've got all these undulations right down to the molecular level. And so effectively the finer you measure, if you measure with infinite fineness, you get an infinite shoreline no matter how short it is, right? So that's, that's a mathematical paradox in any way. He found these things in biology and he pursued them and figured out how you address these things. And he didn't I don't think he invented fractals, but he took a very crude fractal science and advanced it radically. And anyway, I would love to have the conversation with your dad about years where biology and math meet and it snaps into place you won't notice because mathematically, we didn't get anywhere near good enough for this for to characterize the math that your dad would have studied.

**Heather** 52:53

Yep, absolutely. So you were much closer to right here he was. Mandelbrot was born in 20 1924 and died in 2010 2010. What time are we at sec. Okay, um, let us there's just some comedy questions here. Let's get through them quickly, and then move into the next hour. This is super cool. Scott Adams give you high praise in his stream this morning regarding ivermectin while also offering tips for how scientists in general can gain more credibility with those who lack a scientific background. Please check it out.

**Bret** 53:29

Cool. That's great. Yeah, that's it. Thanks, God.

**Heather** 53:32

Yeah. during questioning about our helped other countries Biden mentioned ivermectin by name as support that we would be sending. I can't find this clip anywhere on YouTube. Do you have thoughts? Love you guys? So I'm reading that not because I've heard of this at all, but so that it's out? I don't know. I don't know anything about this. But I'd love to see that. Yeah, I'd love to see Biden talking about that. And then of course, that would raise the questions of why we don't let that happen here. But so I don't think about it. Do you see any evidence of any variant posing a greater threat than the base SARS COVID to? And do you have thoughts or feelings regarding giveaways and lotteries to incentivize getting the vaccine? I think some of the variants are more highly transmissible. I haven't seen anything about them having higher fatality rates. I've only I've only seen stuff about transmissibility, you know, and but there's the data are so crap that I don't know what that means. Right? And that are being shared with

**Bret** 54:34

us transmissibility data now exists in the confusing environment in which you've got people vaccinated. So yeah, yeah. So the extent to which we are now causing I would say the thing I fear more than the variance is the diversity. Yeah, right. It's a diversity of of, of SARS, Kofi two variants is frightening because it's a harder puzzle to deal with by a lot.

**Heather** 54:55

So what maybe what if I may rephrase the thing that you fear But I agree with the thing that you fear more than any individual variant is the number and array and diversity of variants. Yeah.

**Bret** 55:07

And I worry a lot that Garrett vandenbosch might be right about the relationship I've seen. I've seen some data that has a scary connection that's possible. You know, there's a lot that

**Heather** 55:24

says You may be right, that mass vaccination during a pandemic can drive new variants.

**Bret** 55:31

Right. That's the thing that you certainly write about it in principle, in practice, that we could make things far worse. In other words, a scenario in which we come close to, you know, if we were smart, and we ivermectin our way there, that'd be one thing. But let's say we got close to vaccinating our way out of the pandemic, and it generates a variant so far removed from the modern vaccines. Yep. That we effectively restart it. That is a frightening scenario. So anyway, it is I don't know, but I would say it's the it's the diversity of the variants more than it is any individual one.

**Heather** 56:11

What do you think about the incentives to Oh,

**Bret** 56:13

yeah, I hate this. I hate this.

**Heather** 56:17

It's for shame, really, for sure. So

**Bret** 56:21

especially in light of the fact that what's really what's really going on here is you've got hesitancy, I'm sure some of the hesitancy is loony. And a lot of the hesitancy is not learning. And for you to incentivize people into ignoring the hazard that they feel, even though you do it because you think you're doing the right thing for Planet Earth, you're leading people to ignore a danger that you are not in a position to say does not exist. And that makes you responsible for what happens. downstream of that event. I would also point out, and I can't remember who said this to me, somebody in the last day or two somebody pointed out the I will figure out who it was. I haven't talked to that many people. The classist nature of such incentives, right? The wealthier you are, the easier it is to ignore, and the more likely you are to be educated enough to ignore a lottery being used to induce you to face some hazard that you instinctively otherwise would, would be held back by. And so the extent to which we are going to end up extending the experiment of these vaccines to people who are not as well positioned to resist the carrot that we are delivering, or not as capable of seeing past the unlikeliness that a lottery will smile upon them. Right, there's something very, very wrong. And again, the obsession with vaccinating everybody I would be so on board if these things were clearly safe, or if we had reason to believe the system was excellent at doing that, and that the only thing there was was a tiny chance of a long term harm, but I don't think that's where we are. Yep.

**Heather** 58:17

Okay, quickly, two more. What is the reaction to your No, no Madison, ivermectin podcast, Ben like both privately and publicly

**Bret** 58:28

overwhelming support. The mechanisms that distributed have behaved very oddly, I've seen anomalies on the YouTube whatever it's called the YouTube studio app I've never seen before things behave strangely, the numbers were going up up up really, really fast. And then they hit this YouTube molasses phenomenon yesterday, where the rate suddenly plummets to near zero. And the graph of views does not show a discontinuity or a plateau it's perfectly smooth. So it sort of looks like something behind the scenes wants this not to be visible. But if you're paying attention to the number of people who've seen it, there's something clearly happened. Same thing happens on Twitter, there's been a lot of hostility, and a lot of that hostility is garbagey. You know, you know, you don't know it works. Prove it, this kind of thing. Why aren't we talking about how great vaccines are right, you know, blood on your hands kind of stuff. And then there's the sock puppet thing, where they're all of these sock puppet accounts or burner accounts or whatever they are that you know, if you just simply click through to them, they look so weird, you know, all you've got 16 followers and you signed up in 2009. And you follow 800 people. I don't know what that is, but that's not organic. So there's something that wants to come conversation to have a certain sound and it keeps timing in and trying to control the conversation. So anyway, it's very confusing. That's the answer to your question.

**Heather** 1:00:07

One last question here and then we'll move to a few questions from this hour. If Brett is Maverick, does that mean Heather is Iceman Zack? That's a reference to the movie Top Gun. I trust your parents have educated us sufficiently in this regard. Know Zach, I don't remember actually. I know we watched Top Gun with Toby recently, but it's possible you were you were there. You weren't out doing rocketry at the time. Okay. Okay, so I think we've both got a few characteristics of the maverick character and of the The Iceman character.

**Bret** 1:00:38

Totally don't remember these characters well enough to say anything about it really well. Let's

**Heather** 1:00:42

see, Maverick is his is his main dude. Tom Cruise. Yes.

**Bret** 1:00:47

So I would say physical resemblance. Definitely. Not for me. No for me.

**Heather** 1:00:53

And Iceman is Oh, what's his name? It's the Yeah, I can't remember his name. But

**Bret** 1:00:59

oh, wait, wait, it's Uh, yes. Val Kilmer. Yeah, there's a Falco? I

**Heather** 1:01:03

think so the guy who then who then plays Jim Morrison.

**Bret** 1:01:07

Right, right. Totally.

**Heather** 1:01:09

Yeah, that's about all I got. But no, I mean, the character. I think I think Iceman is called that because he just he's, he keeps it completely cool when he's in the cockpit. He does. He does. He does not make errors there. And Maverick it runs hotter. And I think I think there are places there are domains in our lives where each of those descriptions are a better fit for you and a better fit for me. And it's not it's not all one. Yep, yep. All right. Oh, my goodness. Look at how many amazing questions. Really appreciate it, guys. And I'm sorry, we won't get through like a tropical forest. Yes. Oh, I see your words. I brought I brought I bought 1.87%. ivermectin paste for my horse. For homogenious paste. I could compute the dosage for a 180 pound horse. I know you aren't medics are vets. But are there any unsafe downsides of another species consumed?

**Bret** 1:02:13

I can only tell you what I've heard and read, which is that it's the same stuff. And the animal stuff tastes like apples.

**Heather** 1:02:23

Yeah, I mean, it wouldn't surprise me if there was something different in the formulation that certainly you know, even if you like crunchy food, you probably don't snack on your cat's kibble. Right? Like, you know, they're lesser, generally the standards are lower. And we there are certainly some things that humans can eat that our animals cannot and presumably vice versa is true as well. So I you know, that is all true. And I don't, I don't know. But I think again, the flcc has some has some stuff on

**Bret** 1:02:58

Well, the flcc will help you they will prescribe ivermectin. And there are other ways to get it. I certainly bought ivermectin. I can't remember exactly how it worked. If there was a pharmacy, and it had a doctor and you had a consult that was at least available. But

**Heather** 1:03:19

I don't but we have heard from people that the horse stuff tastes like apples. I think the horse stuff famously I think and there and those people are

**Bret** 1:03:25

still around. Well, we don't. We don't know what fraction of them are still around. But those who are still around report that it tastes like apples. Let's put it this way. I sourced human ivermectin because it's preferable. On the other hand, in an emergency, I wouldn't have hesitated. You know, this is me. It's not you. I wouldn't have hesitated in an emergency. Because the fact is COVID does damage over time. The later you apply this stuff, the less likely it is to work and less effective is going to be and so time is of the essence and like that. But yeah, yeah.

**Heather** 1:04:03

Can we imagine a means for otherwise safe ivermectin to have a long term risk interacting with COVID? Also, How hard would it be to engineer a serial passage? This effect either well, or ill intentioned?

**Bret** 1:04:15

We were I don't get the last part.

**Heather** 1:04:17

Yeah, much. I don't. I don't know. Like ivermectin isn't alive. So you can't cereal passage ivermectin. It doesn't change as it goes through organisms, right. It is it is a static medicine. But so the first one can we imagine a means for otherwise safe ivermectin to have long term risk interacting with COVID.

**Bret** 1:04:45

Hold on a second. I'm trying so the the, the landscape that you're looking in is the following thing. You got antibodies and you got receptors that work like antibodies but are On the cell surface, and they're basically structural set of proteins. And then they have a variable tips right there why faves you've seen you know, the diagram, we've all seen of antibodies or wives floating around. Those tips are variable, they're electromagnetically variable. And so they stick to stuff that's unique to them, whereas the rest of the antibody is generic, at least within the category of antibody that it is. But as your immune system develops and affinity for something, if you get vaccinated, let's say let's say the vaccine works exactly as planned, the spike protein comes to the surface of your cell, the immune system regards it as foreign basically sees your cell as infected with virus, it learns the virus signature by contacting a spike protein, there is selection that then produces cells that are better and better at sticking to the spike protein. Okay, that's how it's all supposed to work. The ivermectin binds to the spike protein, and so has impacts on that process. And it is also the case that antibodies can create their inverse, the immune system can react to antibodies, and it can create the inverse sticky pattern, right? So all sorts of things are possible in this landscape where, you know, if, if it is true, that antibodies pick up the inverse of the spike protein in order to stick to it, then the inverse of an antibody that has the the antibody that has the spike protein imprint, and the inverse of that antibody is a different antibody now looks like spike protein in some regard. Now, I don't think it will look enough like spike protein to matter, right? In other words, it's not going to, you know, stick to as to well enough to disrupt the cell in all likelihood, but no conceivable if something down that road could happen in principle. Sure. Lots of things are are Yes.

**Heather** 1:06:57

Well, I guess this is I was maybe my version of this question earlier this week was, is there? Are we at risk of ivermectin equivalent of antibiotic resistance? Right. It's exactly that that analogy. And we sort of concluded Probably not, but theoretically, is it completely outside the realm of possibility? It's not completely outside

**Bret** 1:07:21

the outside of the realm of possibility out it's much less likely because ivermectin is nonspecific, right?

**Heather** 1:07:28

I mean, it is. It's, it's insanely nonspecific, like it's it is, it really does seem to be one of less than a handful of Wonder drugs with regard to the general nature of things that will bind to and can cure you,

**Bret** 1:07:46

which I should point out is why I want to see the dosage driven down to the absolute minimum necessary to do the job,

**Heather** 1:07:52

right? Because Because like antibiotics, we risk driving, all sorts of other things that might be are symbiotic out

**Bret** 1:08:00

with it. If this is a super sticky, awesome molecule. And the point is actually, I thought it was possible. Thank

**Heather** 1:08:06

you very much. I'd

**Bret** 1:08:07

like as little apart as possible for that to get the job done. And yeah, you know, short term, it matters less than long term to be sure. But boy, would it be great to stop pretending it didn't work and start figuring out how best to use it.

**Heather** 1:08:20

That's crazy talk.

**Bret** 1:08:22

Probably.

**Heather** 1:08:25

A key phrase as of late seems to be pyramid scheme. Maybe it's a key meme. Which ones do you see collapsing? I hope you enjoy a weekend off and thanks for your central lifeboat through these times. It's interesting, I haven't actually haven't seen pyramid scheme come up. But I'm trying to not pay attention to as much of what's just coming across feeds.

**Bret** 1:08:44

I want to frame it a little differently. Okay, go for it. pyramid scheme is the only game in town. Why? Because it profits faster than anything else. So what that means is those of us who want to do real stuff in the world and not play the pyramid scheme game are going to lose to those who play the pyramid scheme game and play it well. Right? The pyramid scheme game can also be called the bubble game. Right? The the financial crisis of 2008 was basically a a scheme whereby the particular thing in question was mortgages and mortgage backed securities, and credit default swaps. And the other thing is that allowed the thing to happen. But the basic point was a bubble began to emerge. Those who understood where the bubble was could write it up and escape before it collapsed, leaving the, you know, a huge destruction of wealth and the bill handed to other people, largely us the public who had to bail out the institutions in order to restore the world economy. But the basic point is, if you're real, if you really want to be a billionaire, right, you probably want to get good at the bubble game and get rid of everything else from your mind, figure out how to just recognize the next bubble, how to understand when to get in, when To get out that kind of thing, that's going to be the quickest route to the top. And it is not only not productive, it is absolutely destructive, right? We're living in a bubble economy, where this is the game. So anyway, my point is, why is a pyramid scheme everywhere? Because pyramid schemes are everywhere, you know, to a greater and lesser degree. Yep. And the danger that this puts us all in is massive. So it ought to be the highest priority to figure out how to make pyramid schemes not pay. That's the key thing they have to stop paying, or you're gonna see nothing but them from here on. Yes,

**Heather** 1:10:37

good. Is genetic immunity to COVID possible due to higher innate immunity towards flu, for instance, my dad and I are the only two people we know of on our street who tested negative during India's second wave peak spread. It's interesting,

**Bret** 1:10:52

I will bet you that there is a genetic immunity and probably have a couple of different kinds.

**Heather** 1:10:58

Sadly, that's what that's would be my guess, you know, based on no data at all, but that'd be my guess, highly likely

**Bret** 1:11:03

that some people are all but immune or completely immune. And then there's a question of whether you could acquire immunity without encounter with COVID. So that you are walking around genetically as if vaccinated, from you know, from before the pandemic ever began.

**Heather** 1:11:20

Yep. Next question. Someone asked about the rates of vaccination for Indian states to go up 39%, Delhi 35%. tn is Tamil Nadu, 14% and Uttar Pradesh 10%. calculated for 15 states and the range is 10 to 39%. That's an that's apparently from that same source, ap COVID-19 india.org, that the data were being gathered from to make those graphs that I showed, using only one dose, so percentage, as from zero to 200. That's interesting. I didn't see the question about asking about rates of vaccination for Indian states. But I was actually thinking, actually, if you would show my screen again, Zack, that let me just go back to this one. So this is all four of the states that were just mentioned, this is go on under Pradesh and Delhi and Tamil Nadu. As I was looking at these as I was preparing these for today, I was thinking what I really want is the same graphs with vaccination rates overlaid. So that we can see so that we can see the two obvious things, you know, do back Does, does early vaccination slow the spread of cases or fatalities? And does that interface with the spread of with the widespread distribution of ivermectin? Yep. And, and, of course, the question isn't, does widespread vaccination, slow the spread or not? The question, unfortunately, is does widespread vaccination slow the spread? Do not much to the spread, or accelerate the spread perhaps of new variants?

**Bret** 1:13:12

Yes. And what does it do to the rate of death? Yes. Another question. Exactly. Imagine though, you remember back in the early days of COVID, when, just like, right after 911, suddenly, there was journalism everywhere and people who were had been in the corporate machine and were doing pseudo journalism, were suddenly reporting on stuff. And it was wild and, and science came to life as COVID was new. And everybody was trying to figure out what's going on other preprint servers, they go wild west. Yeah, on peer review. It's the Wild West, but there was lots of stuff about it. Yeah, it was great. Imagine that that was going on now. Instead of having settled back into whatever the, you know, the game is, currently, we were excited about the fact that we had various tools at our disposal, it would be frickin great to figure out what their interaction was, which ones were safe, which ones weren't what the best treatment was from a cost benefit analysis perspective. People could be furiously at work figuring out what do we do now collectively, because we're all in this together

**Heather** 1:14:10

instead, to continue your analogy we're all looking for weapons of mass destruction.

**Bret** 1:14:14

Yeah, in Iraq. We're looking for weapons I

**Heather** 1:14:17

mean, that's that's it that like, we all bought a story or told us like a bunch of journalism happened and they're like, Oh, this is it. This is where we go I have no one look at the man behind the curtain. And

**Bret** 1:14:28

yes, we are looking for weapons of mass destruction interact, while the Chinese are looking for the real killer of Jays ex wife,

**Heather** 1:14:37

Chinese.

**Bret** 1:14:38

Well, I'm figuring they're, they're looking for the population of creatures or people in which the virus was circulating before it got to Wuhan. Okay, you know,

**Heather** 1:14:47

yeah, sure they're. Okay. Have you heard the idea that there was potential motive for a purposeful lab leak due to Trump's trade deal with China having a force majeure clause I have not heard that.

**Bret** 1:15:02

Nope. So I haven't heard it I would just say if your thing is intentional not leak, right? You have a fact you have to deal with. It made no sense if the idea was the Chinese for example, wanting to have the covid 19 pandemic made no sense to release it in Wuhan. Release it in eunan we probably never would have figured out it was a lab leak because those few people who figured out there was something weird with the genome would not have had the central fact that called most people's attention to the hazard here, which was this showed up in Wuhan which makes no sense. So it sounds to me like the hypothesis being advanced here is that it was not the Chinese are related with somebody else trying to quash a deal which I see no evidence but anyway deal with the fact that if your hypothesis is the Chinese released this to accomplish x releasing it in Wuhan didn't make any sense right? You have to at least figure out why they would have done that and I have yet to see a reason. Yeah.

**Heather** 1:16:08

Okay, we got a lot a lot here. We're probably well over an hour at this point. Several of these are just comments so we're gonna I'm just gonna read through a few more and then at some point we're just gonna have to call it a call it a Saturday.

**Bret** 1:16:21

We're gonna call it a Saturday I

**Heather** 1:16:22

call it a third. I don't know. It's Saturday. Yeah,

**Bret** 1:16:26

I have not caught up to that fact yet. But

**Heather** 1:16:29

I'm thought of talking to round about ivermectin, I presume you mean Rand Paul, not the RAND Corporation. Although boy for the RAND Corporation were interested they could they could make a difference. Yeah. Sure. That could I actually I don't I assume that if this is about Rand Paul, that Rand Paul has. Ben's said something I actually I just don't know, I don't know, any of what's going on in in politics space on this.

**Bret** 1:16:55

I'd certainly talked to Rand Paul about this. For one thing. I mean, you know, a, he's been in the right place on gaina. Function lab lakeya, directly, exposed Fauci, you lied to his face. And anyway, so he's been good on this. He's a doctor. He? I'm trying remember exactly did he say he'd had COVID and therefore wasn't going to get vaccinated? I don't know. I think he said that, if I've got it wrong, I'm sorry. But I believe that was the story. And my sense was, yeah, that's exactly the right, you know, reasonable people can disagree over the wisdom of getting vaccinated. In the first place, I think ivermectin actually changes the puzzle so radically, that the reasonable person argument begins to disappear. But the person who's had COVID doesn't need the vaccine and doesn't need the risk, whatever that risk may be. So anyway, what I'm what I'm saying is I've heard Rand Paul makes sense several times. It sounds like he's not following the science ish. I got that from what's his. What, what video was that? Oh, who is it? A t gal? Look it up. Yeah.

**Heather** 1:18:18

That's a good one. You keep you keep talking man. Anyway,

**Bret** 1:18:20

all I was saying was, I think Rand Paul is making some sense on this topic, quite a bit of sense. And he's courageous about it. And there's so much on the line here. I wouldn't under ordinary circumstances be troubled by crossing the aisle to talk to Rand Paul, but for God's sake, this is an emergency. Like, I'll talk to anybody who is anywhere in a position to help and is capable of hearing the message and there's no question that Rand Paul's there

**Heather** 1:18:48

is AK who was the who made the video that I showed you? I can't figure it out.

**Bret** 1:18:57

I'm sorry. JT something.

**Heather** 1:19:00

Okay. Zach's gonna figure it out because my my half assed attempt to search in here not working. Okay, where are my questions? Here we go. Do you have thoughts on AOC rejecting the $100,000 that Matt Walsh or the daily wire raised to help AOC his grandma, so many conservatives are volunteering to help her yet she and other leftists won't meet us halfway? How can we bridge this divide? Again, I didn't know anything about this. I don't know. Well, but yeah.

**Bret** 1:19:34

Okay, so AOC has been a very destructive force. I think she has played to our sympathies. And it's this kind of weaponized empathy thing, and I'm not a fan. On the other hand, I think that there's this campaign to go after her on the basis that she drives a Tesla or you know, that her grandmother There's places, you know, not nice. And I think the point is, there are supposed to be rules to this goddamn game, right? And the goddamn game is supposed to involve leaving people's families out of stuff, right? If you've got combatants in the game, you don't go after their families, right? Do you really want to be scrutinized for what car you drive? Do we want to go after a OC and then it's all have to account for what car we drive. Right? This is insane. This is lunacy. AOC is vulnerable at a policy level. Let us talk about where she is wrong on policy. And if he lies, we should talk about that. But I don't believe we should be talking about what car she drives and we should be. You know, I agree we

**Heather** 1:20:40

shouldn't be talking about what car she drives. And I actually, you know, I, I suspect that I agree with her on some policy issues, although I don't know what they are at the moment. I feel like I did see something on Twitter, about grandmother in Puerto Rico. Yeah, right. So so she she brings it in, though, so. Right. So right, there's a she's too much ego, right? And like politicians have to be ego or else they wouldn't like they wouldn't be successful. Right? But you know, she I don't think it's, it's a legitimate rhetorical move, is to bring in the stuff and then say, you can't touch that stuff. That's not nice. Like you, you. You brought it to the table?

**Bret** 1:21:27

No, you're right about this. So I guess I guess, then my appeal is to both sides, right?

**Heather** 1:21:33

It has, like everyone has to up their game. But whoever, whichever side goes, second loses. Or may No, I mean, I'm sorry, whichever side goes first loses. Yeah. Now if you if you lay off first and the other side, just rocket fuel.

**Bret** 1:21:44

So I guess the point is, I think you're convincing me. Okay, so AOC, drag something in, to pull on heartstrings, right? It raises an obvious question. And

**Heather** 1:21:59

I don't even know if it does. Really, all I think I saw is like, here's a picture of my poor grandma's house in Puerto Rico. It's destroyed something like this. And I don't, it does pull on heartstrings, but it doesn't raise questions on our raises questions like she she needs to be raising up all of her beloved family members, before she can, you know, drive, I don't even know she drove Tesla. But before she can, you know, dress the part to do the job that she's trying to do here. Well, that's also not how it goes.

**Bret** 1:22:35

So it sounds like I've convinced you and you've convinced me

**Heather** 1:22:37

No, I think that she's not playing a fair game. But I think that her her antagonists are also not playing a fair game. And I think in this case, it with regard to the particular thing that is to say, Did she walk onto the stage and start it? Yes. But had it started before she ever walked on the stage in the public eye? Yes. Yeah. So there is no you know, she started at Easter like they all started it. Yeah. Like there's there's no tracking it back to origin. And you know, it's it's the entire conversation that is broken.

**Bret** 1:23:12

I'm compelled by exactly the solution on solution. Yeah. Now we've got a fairly corrupt system is the problem. And basically, you know, it's all symptoms until you figure out how that how that works. But yeah, look, AOC has extended, she has pushed the envelope with respect to the rules. She has, you know, I believe manipulated us with tears and all sorts of stuff and stories that are exaggerated, and she's pulled all kinds of shenanigans. So I'm not sympathetic. On the other hand, I do think somebody has to speak for, you know, the reasonable rules of the game, right? You can't have Andy now getting the crap beaten out of him in the streets of Portland, frankly, a reporter has the right to go anywhere that goddamn one on any street in any American city that they choose to report on, right? And Tifa doesn't get a fucking vote. So my point is, there are rules and that's one of them. And hey, we, you know, Grant people a certain amount of leeway. And we don't, you know, nitpick the details of their lives or what they post on social media for any hint of hypocrisy. We actually have to be generous to an extent in this. And so anyway, that umbrella extends to AOC as it does to everybody else. You know whether she deserves it or not specifically, yeah.

**Heather** 1:24:35

This is the same person who was asking about if you if they might have genetic immunity, having been living on a street, somewhere in India, they don't specify with this person and their father. I think we're the only two people who haven't gotten COVID. To put it in context. I've been in the COVID Hospital and patients of cough near me, I was masked. I've lived in the same house with three people who tested positive two of those wanted to spread to others. After they left my house 102 others who tested positive later. I'm not planning to take the AstraZeneca vaccine my innate immunity seems to be good. We'll take ivermectin as precaution a fairly active also 10 kilometers walking plus 45 minutes boxing daily. So yeah, I think all of that looks like good. Good analysis.

**Bret** 1:25:22

Yeah, good analysis and, you know, again I want I want a huge effort put into figuring out exactly how good ivermectin is, what its limits are, what the minimum amount necessary is, but the I, from what I have seen, I think there's every reason to believe you are better protected with ivermectin than you are with the vaccines. Right? So in light of that, given that you seem to have innate immunity, maybe you just got lucky a bunch of times. Yeah, that's certainly possible. But whether or not you have great innate immunity, ivermectin appears to be highly protective and very, very low risk. And that's probably all you can ask. We don't have anything better than that's what's clear.

**Heather** 1:26:06

Okay. I'm just gonna grab a couple more. I'm gonna find one more question. start scrolling down. A couple more comments. First, Indiana Weinstein and Heather Croft I see. And can you make a clip of how they use the graphs with regard to the effect of ivermectin? Yeah, I think we should do that. as well. Oh, yes. Well, the PowerPoint that I was showing will be linked to in the description as well. At least the main one, Three cheers for the BS. Whoo. All right. Thanks so much for answering my question at the top with regard to flcc evidence, I was mainly hoping to have a source to argue and defend for the ivermectin but I understand your position. I'm a big fan love your work. And to do. How about let's end on. There's so many. So many. If you had recovered from COVID-19 last April. April isn't a word as I know, I think it's getting It's getting late. If you had recovered from COVID-19, last April, would you prophylactically dose with ivermectin or trust your natural immunity, especially if someone close tested positive? It's a really good question. And that actually raises I have been asked privately a couple of times recently, like wait a minute, I'm confused. I recently went back and watched the very first episode in which you Heather said described something that you and Zack had had in February of 2020 that you really thought might be COVID and we haven't we don't return to us Let me just say yeah, briefly. That as much as what both Zack and I experienced in February of 2020 seemed a perfect match for what was then being described as COVID and and was totally unlike anything that either of us had ever experienced before like waking up feeling asphyxiated. Unable to stand up like I actually fell down and just a hacking cough that would not stop the most reliable it seems a symptom of COVID that wasn't being talked about then yet which is loss of taste and smell was not a feature for either of us. And all of us got tested relatively early. But we're not sure about the reliability of those tests. But we all came back negative and Brett and I have since been tested as well and it just keeps coming back negative for for for prior infection. So I think it's I think it's not likely at this point I said Zack and I had it although it seemed at the time like oh actually that's that's a perfect fit.

**Bret** 1:28:54

We wait before I go there I just want to say the evidence is particularly strong because against AI scientists to having had it Yeah. Because the evidence that you had the same thing as each other is very good. Yes. Right. So the point is any individual could have COVID and not lose their sense of smell but the chances are much lower that you'd have two people who had COVID and neither of them lose their sense of smell the chances of somebody not showing up as positive on Have you ever had COVID test is high enough but the chance that two people wouldn't show up as positive or having been positive is much lower and then

**Heather** 1:29:29

that one person would show up as never having had it on I think it was like three different three

**Bret** 1:29:33

different types right. So combined, I think you had something bad something flu like and you know, as bad as you've had, but it wasn't COVID it was also very early. I can't remember the dates of your

**Heather** 1:29:44

beer but I had just been in LA so that the timing actually the timing was possible. Like I picked something up like in the rental car and the plane in LA

**Bret** 1:29:52

I knew it was possible but the point is the timing does not point to it was

**Heather** 1:29:55

I think the timing actually worked. We can debate that. But I don't think

**Bret** 1:30:01

but anyway I think the question that you've asked that let's put that part aside

**Heather** 1:30:05

if if someone and presumably this person is asking on behalf of someone that they actually know or are right, if you would recover from COVID-19 last April would you prophylactically dose with ivermectin or trust your natural immunity? Especially if someone close tested positive so let's take that's two different questions. So

**Bret** 1:30:20

hold on the they've asked the question as what would we do and that is the way we are going to answer it right? This is not advice for you. This is what we would do in that hypothetical circumstance. I've got my answer you got yours? Yeah,

**Heather** 1:30:36

I do. Okay,

**Bret** 1:30:38

I'll start my answer is I would not prophylactically dose but I would have it on hand and the very first sign of symptoms I wouldn't hesitate as far as if somebody tested positive who was close to you like somebody in your house I might consider then taking it the cost of ivermectin is low the risk and the burden on the system is low. But if you've had COVID You're pretty well immune. Right?

**Heather** 1:31:08

So this is going to be shocking to you but that's exactly the answer that I had arrived at with I don't think this is a difference I think just adding one level of precision here which is that last April is getting to the outside of that window that it may be you're losing your immunity at that point. Yeah. So it would be you know it'd be great to get an antibody test for instance just to see if you actually tighter yeah your for your tighter and I would say depending on what if someone closed as a positive means if it's someone you're sharing a home with and it's 14 months ago that you tested positive? I think that I would prophylactically dose with ivermectin for the time period you know, for a month or so. But otherwise I think I wouldn't because your natural immunity should do it. Yeah, but I would definitely have it on hand Alright, and

**Bret** 1:31:57

I'm going to add one nuance here too and

**Heather** 1:31:59

then I'm gonna add another one. I don't know what it is yet. Yeah, we'll

**Bret** 1:32:03

find out Yeah, fighting. No, I would say if you were in a city in which a new variant was spreading, then the sense that you were immune from a previous encounter with COVID is much less secure. And then I would just does with ivermectin

**Heather** 1:32:19

Yeah. No, good. I don't have anything to add. All right, which I think I think this is it I think we're done all right. I think we're done. So we probably won't come back before next Saturday because it's the last week of school for one of our boys and we got you've got another podcast I don't think you're gonna be doing it live stream but maybe actually another person in the studio right? We got another person coming here this week for a cool, cool podcast. Yeah, so join us at our Patreon. Subscribe and liked about this channel and the clips channel. Check out our book website and consider consider doing an early purchase on that that would be awesome. What else I can't think of any other the other logistics thing so I will say love the ones with whom you live and eat good food and get outside.

**Bret** 1:33:16

And if you encounter somebody playing the bubble game, steal their shoes.