

Dave Asprey ([00:00:01](#)):

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([00:00:07](#)):

You are listening to the Human Upgrade with Dave Asprey. Today we're going to talk about one of my favorite topics ever, the definition of biohacking as you change the environment around you and inside of you, so you have full control of your own biology, well, what's part of the environment around you? Animals, soil, bacteria, even fungus, the water, the air. How does that connect to living longer, higher human performance? Well, given that your body is a bag of mostly water containing tiny bags called cells that contain even tinier bags called mitochondria that have their own environmental sensors and their own distributed consciousness, they listen to all the variables in your environment that your conscious mind will probably never be aware of unless someone tells you about the things that make a difference. But the reason they make a difference is they do it at a very low level in your system that percolates up until you feel it.

([00:01:16](#)):

And that's why I made the decision 15 years ago or so to move to a place where I could build a regenerative farm. And I built one with 25 pigs, 25 sheep, three cows, and a variable number of chickens and turkeys depending on raccoon activity, and ran it for about seven years. I raised my kids on that farm in that environment, and I did it for them. And because I wanted also the experience of doing that, it was a huge amount of work and I oftentimes don't even talk about it that much on the show, but it's so fundamental to feeling good to have a clean, high quality food supply that it's an incredible luxury to be able to do that. Most people dream of that without knowing it's damned expensive to run a farm. And 90% of small farmers, the few that haven't been taken out by Bill Gates and company in large companies buying up all the farmland, 90% of them have daytime jobs and they come back and running a farm is a full-time job unquestionably, and it's one that doesn't have hours because the sheep are going to have little sheep in the middle of the night.

([00:02:30](#)):

You're going to be up every other night in spring for an entire month and things like that. So our guest today is Peter Ballard, who's a PhD and he's known as Doro godfather of the rum. He's an advocate for what ruminant animals do for human beings, not just for us though, but for the soil. And he's a forage extension specialist, and he worked in the forage seed industry for more than 12 years, and he's the immediate past president of the American Forage and Grassland Council in regular non-farm English. That means he knows what cows are supposed to eat, what soil is supposed to look like, and what happens when you feed ruminant animals, the right diet, what happens to our environment, to our bodies, and to the animals themselves. Peter, welcome to the show.

Peter Ballerstedt, PhD ([00:03:27](#)):

Thank you for the opportunity. I'm glad to be here.

Dave Asprey ([00:03:30](#)):

I remember in seventh grade hearing about ruminant animals and believing that it meant they thought about things a lot because they must ruminate. What the heck is a ruminant animal?

Peter Ballerstedt, PhD ([00:03:41](#)):

Well, they do in fact ruminate, but not in that way. I was going to say you had a really blessed childhood. If in the seventh grade you were thinking about ruminants. The ruminants are this large group of animals, cows, sheep, goats, bison, buffalo, antelope, deer, elk, giraffes, and they have a multi chambered stomach. So four stomachs typically we think of they have cloven hubs, some have antlers which shed, some have horns, which don't shed. But the big thing that they do is because of this specialized digestive system, they support a host of microorganisms in their first two stomachs, and it's those microorganisms that break down the cellulose and also make use of non-protein nitrogen. So they convert fiber into fat so that the ruminant animal can survive on a low fat, high fiber, poor protein level and quality diet and produce among other things, food of highest nutritional value for human beings.

Dave Asprey ([00:05:09](#)):

Peter, did you just insult vegans?

Peter Ballerstedt, PhD ([00:05:12](#)):

I don't intend to because you

Dave Asprey ([00:05:13](#)):

Said you need a specialized set of stomachs in order to eat low quality, high carbohydrate, high fiber foods to make enough energy to be healthy. And vegans don't have three stomachs.

Peter Ballerstedt, PhD ([00:05:24](#)):

Well, gorillas do that too, and they're not ruminants, but they do a special sort of thing that I'm not willing to do, which is eat their own droppings to take advantage of the post gastric fermentation. Ruminants are pre gastric fermenters. Just little differences there. We don't have rumens. Some of us look like we do, but

Dave Asprey ([00:05:46](#)):

I did have an episode that was really fascinating about drinking grown pea for Ayurvedic purposes maybe, but poop eating. I would just rather eat a steak. That seems like a better way to be healthy.

Peter Ballerstedt, PhD ([00:06:00](#)):

I'd rather get my B12 from red meat. Yes, thank you.

Dave Asprey ([00:06:03](#)):

Okay, that's a fair point. And by the way, everyone says, but gorillas can do it. Well, there's your answer. Yeah, you got to do what the gorillas do if you're going to try that approach. And I say this as a former devout raw vegan who shattered some teeth and demineralized myself and gave myself autoimmune conditions like so many people who decide they're going to go vegan for one of the three big stories about it. But you didn't always believe these things. What caused you to change your perspective on this?

Peter Ballerstedt, PhD ([00:06:32](#)):

Well, so I grew up in suburban Philadelphia. That's where I was born and raised, didn't take me long to realize I liked the country, whatever I thought that meant, had no idea what you could do to make a living there. You look back at your life at some point you realize all the inflection points and the people that influenced you and you had no idea at the time. So I'm well in that phase, a long story of how I got into agriculture studying it at post-secondary. But at some point there, I became fascinated with the whole question of pasture, ecology, animal plant interactions within grazing systems. So I had that graduated 86, but by 2007, I was a 51-year-old, balding, obese, pre-diabetic.

Dave Asprey ([00:07:29](#)):

You look like a cattle rancher from Kansas it sounds like.

Peter Ballerstedt, PhD ([00:07:32](#)):

Well, the statistics for the general population and the statistics for the agricultural population aren't that different, not good. So I discovered some information in 2007 that started me 2010. I started speaking publicly about trying to educate my agricultural tribes on metabolic health and trying to educate the metabolic tribes on ruminant animal agriculture.

Dave Asprey ([00:08:05](#)):

You've done fantastic work since then, and it's been part of my mission since the very early logs 12 years ago in the start of the biohacking movement, like grass fed butter, grass fed animals is different than industrial animals. It's different for the animal, it's different for your health, it's different from the environment. And big food is trying to give into you that oat milk is the same as cow milk and they're trying to convince you that industrial milk is the same as grass fed milk. They're not the same. And you had that unusual view of saying, all right, I come at it from a animal agriculture first, then you've lost a bunch of weight. And it was a mutual friend who helped on your path. It was Gary Tobbs and that little known fact, Gary Tobbs spoke at the longevity nonprofit that I ran in the early ts.

[\(00:08:53\)](#):

And I told him I'd written a book about fertility and he said, let me hook you up with my agent. So my first book was published as a result of meeting Gary Tobbs, not to mention his book as one of the preeminent books, if you guys dunno, good calories, bad calories. He was on episode 7 78, so totally worth understanding his work. And part of that is okay, he's got the metabolic health thing, but when you mix it with understanding of what's in animals that are fed grass, you get something that's incredibly potent. What I want to know is good calories. Bad calories isn't so heavy on grass fed. It's heavy on your don't have high insulin levels. How did you know it had to be grass fed?

Peter Ballerstedt, PhD ([00:09:34](#)):

Well, so maybe just to make sure everybody understands, when I started in 2007, right, 20 what? 808 is when good calories, bad calories came out, I'm trained in grass and grazing systems, ingestive behavior. So as soon as I started getting into this, I was hearing a lot of things from people within the community at the time promoting grass fed, and it tripped all my confirmation biases, of course. And then I started looking at what they were citing for their evidence. And I go, huh, I wonder if there could be some confounding here. And I'm also now getting involved more and more internationally because at times I get just tired of what people in high income countries entertain as things. And so I'm concerned about how we feed a population and I'm concerned about affordability and availability and access. And I'm also concerned about the 80% right now, the 20%, okay.

[\(00:10:44\)](#):

I have no doubt that if we could get 80% of the problem solved, then we'd see more problems, right? Yeah. But right now, I think that I'm more concerned about that biggest issue at this point. And when we have malnutrition globally being the biggest cause of death, and the biggest problem that I see with that is people don't understand malnutrition properly. They have the stereotypical image in their head of quorco and the victims of famine and things. So they don't yet, they still think of obesity as overnutrition. And that's a term that I see in the literature and amongst the community that are doing some work in other countries. So I want to focus people on the fact, as I say in other venues, that I think humanity's existential crisis is insufficient animal source food in our total food supply. We could explore that and I'd love to, and I get tremendous pushback from some audiences that I don't think I should be getting pushback from.

[\(00:11:57\)](#):

So it's always a surprise. Then the question comes, how are we going to produce that in a way that at least protects, if not enhances the environments in which it's going to take place, and how are we going to get that resource distributed through populations when we have issues of reliable energy, et cetera, et cetera. So it's a multi-phase thing. And I have come to the point where I think that if we could get people to make this fundamental change in thinking about animal source food, not being part of a healthy diet, but being the foundation of a healthy diet, then we'll see where that gets us and what we can find in the research.

Dave Asprey ([00:13:02](#)):

There's a population of a little bit north of a billion people who understands this, it's China since they increased the amount of animal meat in their diet, the average height in areas with more animal protein is three inches higher. They've bought most of the pork processing companies in the US and they buy as much protein as they can from global sources because, well, it's their in traditional Chinese medicine. And you can see the effects. We can survive on plants, but we don't thrive on them. And believing

something to be true that isn't true, and then building a world or just building your life around it, it's not because a bad person, it's because you made a mistake. You believe something that isn't true. Big pharma, there must be one cause for a disease. Now, quite often there's multiple causes and quite often it's not one thing that heals it, it's three things.

[\(00:13:58\)](#):

So a belief that one thing is the problem drives actually trillions of dollars of misallocate research. And if we understand human nutrition just at a basic level, well, we go about what we used to do and people say for it's all through the early S and paleo versus vegan and all that stuff. It's not really clear what caveman eat, but it is clear that meat has been a part, a major part, and the most important part of indigenous people around the world, and we have this precious resource that helped to inform me. I came at this first from a metabolic health perspective. I'm like, I would do anything to have my metabolism work because I was obese and had brain fog and arthritis and all those things. And I thought, all right. I had yak butter tea into bed on the side of Mount Kash, and I felt this huge surge of energy.

[\(00:14:52\)](#):

And this was right after coming off of being a vegan. I haven't felt this good in a couple of years. What is happening? I'm at high altitude. I came back to Silicon Valley and I bought some tea and I bought some butter and it tasted like crap and it didn't work. So I spent a thousand dollars on all the fancy teas didn't work. So I spent only a couple hundred bucks on 25 different brands of butter, and the two of them that were grass fed gave me the feeling that was not present on the others and what is it? And that led me on this grass fed journey, including things like the Westin, a Price Foundation, which has been publishing research from a dentist who traveled the world, surely you know about his work, but our audience may not. This is what, 80 years ago or something, and looked at tribes and what happened to their teeth and jaw formation and their height and their diseases when they switched from animal foods to grains. And it's profound. And we have people today intentionally cutting out red meat, and we have various big food companies using lies to call herds of cattle so that there just isn't any to eat to be because they're spreading these weird stories. And I'm hoping in this episode, we can go through some of the beliefs that people have from big media or people with agendas versus the reality of someone who's studied them for decades.

Peter Ballerstedt, PhD [\(00:16:17\)](#):

I sincerely hope that what I can do is offer some information that helps people feel more comfortable in what they found to be the best solution for them. I love the phrase that I heard from somebody about don't outsource your health. The other version of that is nobody's coming. Don't wait for somebody to come save you. So with all that in mind, we can say, as I did at Western Price, I forget how many years ago there would be no modern human beings without ruminants. Modern societies are dependent upon ruminant animal agriculture, and we will not meet the meat needs of 2050, let alone today without improving our ruminant animal systems globally. So that sort of sets the table and we can take any way we want to go through that.

Dave Asprey [\(00:17:24\)](#):

Well, there definitely is some confirmation bias here. Clearly I have the same perspective. There's three reasons that I hear people say that you should stop eating meat and specifically ruminant animals. The first one is they say it's bad for the environment. What's your response to that?

Peter Ballerstedt, PhD ([00:17:46](#)):

Well, I understand why people think that. I think that it's important for us to recognize there can be no sustainable food system without livestock agriculture in general and ruminants in particular. And so we need to drill down what is it in the environment that they think ruminants are bad for? Unfortunately, it too frequently devolves to one issue, and that's greenhouse gas emissions. There are many factors that we should look at, but that one tends to be the one that's gotten everybody's attention and it's been poorly understood. I was just at a European grasslands Congress where repeatedly researchers said something like The emissions we're measuring on cattle grazing are less than we expect, and we don't know why. What that tells me is we had some expectation of what they should be. That's what's been used in the models. When we get around to actually measuring them, we see that they're less.

([00:19:01](#)):

And then we have to couple that with the fact that whatever methane is burped out, note the end of a cow grazing grass is something that came from a natural process of ruminant digestion occurs in wildlife as well as domesticated ruminants. And so we have CO₂ being fixed into carbohydrate via photosynthesis, that carbohydrates ingested by the animal, the microbes break it down, and some portion of that fixed carbon is burped out as methane C four. That C four is oxidized to CO₂ within about 10 years. So it's a cycling of carbon in the biosphere, and it's an essential cycling of CO₂ in the biosphere because CO₂, it turns out, is essential for plant growth and therefore essential for our life. Now, contrast that with if we were to be consuming more crops that were produced with the burning of fossil fuels, that represents an increase in CO₂ in the atmosphere, not a cycling as grass-based systems could end up. And there's a number of other issues with the environment thing. You hear people say, well, if we weren't using all that land to raise cattle, then we could grow more food for, and that assumes that all land is created equal, which anyone who's traveled across the Western United States knows that that's not true for a number of reasons. Different ecosystems are more or less productive, and the vast majority of agricultural land in the world is not suitable for producing crops via cultivation.

Dave Asprey ([00:21:14](#)):

Wait a minute, you mean I can't just blanket the entire country in corn and soy for my vegan nuggets? They won't grow there. And if you did, the soil's not good enough, but then you'd have to kill all the animals who live there.

Peter Ballerstedt, PhD ([00:21:29](#)):

Well, that's another part of it. So my definition of agriculture is the history of humanity modifying its environments to produce more biomass than those environments would produce without those modifications. Now, that could be anthropogenic fire on the plains, for example, when grasslands were burnt to favor game and better hunting, or on the eastern seaboard when they burnt the other story of

forests so that they could gather nuts and also have better wildlife conditions for hunting. So the vast majority of the biomass that we produce in agriculture is not human edible. So even if I grow a crop of wheat or rice, over half of that biomass above ground material is not human edible, but it is edible by ruminants. So there is no plant agriculture without animal agriculture. There's no animal agriculture without plant agriculture. They're integrated in some parts of the world. We still have mixed farming in other parts of the world. They've gone down the specialization track, although there's some interesting work looking at reintegrating cropping livestock systems, and they're finding some very interesting things.

Dave Asprey ([00:22:49](#)):

I look at ruminant animals as doing the job of putting probiotics back in the soil. So when you raise a cow or a sheep, and again, I've done this, you get this amazing thing called either leather or wool, which is fully biodegradable. There's no microplastic in it. So you can wear a leather jacket, and when a hundred years later it's not wearable anymore, you can bury it and it'll go back to the soil without plastic anywhere unless it was in the zipper. That's kind of cool. And your vegan clothing, you're going to eat that in your fish 50 years from now. That's how it works.

Peter Ballerstedt, PhD ([00:23:28](#)):

And even more so half of humanity depends on manure for the fertilizer to produce the crops that they eat.

Dave Asprey ([00:23:39](#)):

There you go. Half

Peter Ballerstedt, PhD ([00:23:40](#)):

Of the world's farmers are still using draft animals. We still have a billion people in the world that are burning dung for cooking fuel, which means that they have a high rate of respiratory disease, et cetera, et cetera. So when I start thinking about more global systems, that's why sometimes I just want to ignore the wealthy countries because I think I got from Georgia Eid and I later found the citation, but she's the one that said first, 95% of the world's vegetarians are economic vegetarians. They're not philosophical vegetarians. They would eat more if they had access.

Dave Asprey ([00:24:23](#)):

There's another word for that, and it's not a nice word. It's called peasants

Peter Ballerstedt, PhD ([00:24:28](#)):

Poverty. Yes. Well, you mentioned the increase in stature. Funny thing, when our colonial ancestors came over from Europe, they tended to be the people that didn't have the land, right? I mean, they were fleeing for a better condition. They got to the colonial America, and early visitors were amazed at how much meat and game and fish these people were eating at every meal and stature increased. And so then when you had the dough, boys go back to Europe for what, 1917, and people stood in awe of these giants walking down the streets. So unfortunately, that trend reversed. Yes, we see it again and again and again, and that's one of the pieces of evidence. But we can look at other things like between 20, between a fifth and a quarter of children under five years old globally are stunted. And this is not merely stature, it's brain development, most importantly.

[\(00:25:39\)](#):

And they'll never make that up. So the human potential here has been restricted in utero and in infancy and early childhood. And what it takes to make up for the deficit is so small. This is the outrage. It's not a heavy lift. We're just distracted by things for any number of reasons that maybe they're a problem, but they're not our biggest problem. We have much bigger problems, and we need to get people aware of that so that we can mobilize the resources and the will to make these changes. Because I think that that's what we have to do in order to see a better future. And beyond,

Dave Asprey [\(00:26:31\)](#):

If you look at these ruminant animals and the way they work, you get stuff we know about. You get meat, you get milk, you get leather, and you get poop, which is a precious thing that cows produce. That's as important as the meat. And if you remove that from the system, you start having soil that won't grow plants, and then the cows can't eat those plants, and you can't eat those plants that you couldn't digest anyway. And this belief that keeps spreading about cows being bad for anything, where do you think it's coming from?

Peter Ballerstedt, PhD [\(00:27:08\)](#):

Well, there certainly is some worldviews and belief systems. We would be recognizing people like the Seventh Day Adventist. But a lot of what has become the environmental community has this idea as well. Frankly, there's a great deal of misanthropic feeling about human beings. They look at human beings as a cancer is a phrase that they use or that they need somehow a virus that would kill a third of humanity. So there's some really dark thinking that leads to some very bad places. The Irish famine in part was seen as nature's way of you have to be cruel to be kind. So there were just too many Irish. And so this is the way that nature was going to sort that out. Fast forward to the sixties, you had people like Paul Ehrlich saying, well, India has lost the race to fetus population. We shouldn't give them food aid unless they implement population control. So that was done in a way that frequently did not involve the knowledge or consent of the women being sterilized. Coincidentally or not. It tended to fall heaviest on the lowest class people. Shocking. Yeah, shocking. I know. So there's some real dark things that lie down this way. Again, I think that there's a substantial portion of the people involved in this conversation space who, as you said earlier, they legitimately believe these things for any number of reasons. Very

Dave Asprey [\(00:29:11\)](#):

Well-meaning,

Peter Ballerstedt, PhD ([00:29:13](#)):

Yeah, I call them sincerely wrong, but there are also people who know what the truth is, and yet they maintain. And so let's just say one group of researchers tried to estimate what the impact would be on greenhouse gas emissions. If we eliminated livestock agriculture from the United States, and they projected through their model that it would be a 2.5% reduction in greenhouse gas emissions in the US and 0.4%, 0.4% globally. Okay, it's not nothing, but it ain't great, but there's no solutions. There's only trade-offs. And what are the trade-offs? Well, they said it would create, they said create, I would say exacerbate, but it was their paper. Create essential nutrient deficiencies and imbalance our food system. Well, that doesn't sound like a very good trade to me. We can look at others. What is the environmental impact of the healthcare industry? I mean, it's a question I keep asking.

([00:30:25](#)):

I don't get real, but I have one paper in my collection that says that the US healthcare industry is a significant source of pollution, including 10%, one 0% of anthropogenic greenhouse gas emissions. Now, that's not done the same way as other people do their emissions estimates. EPA puts out a sources and sinks budget. They say that agriculture is part of what they call land use. That's the bucket that they put it in. They have another bucket called energy, another called transport, et cetera. So agriculture's in with forestry, agriculture is somewhere around 9% of total crop. Animal agriculture is 4% of total beef is 2% of total. So whatever healthcare is, it's big. And we're not looking at it. Okay.

Dave Asprey ([00:31:23](#)):

I actually did the math.

Peter Ballerstedt, PhD ([00:31:25](#)):

Yes,

Dave Asprey ([00:31:26](#)):

Believe it or not, I was working on a longevity venture fund, and I have to dig up the research, but I did a bunch of work to figure out the cost of hospital care just in terms of carbon, because people are obsessed with carbon. I'm more worried about the plastic and the chemicals and the antibiotics that get into our environment. But regardless, it was a meaningful number. If we could just extend human life and human health by just 10 years, the reduction in carbon from that would far exceed any theoretical thing that cows are providing.

Peter Ballerstedt, PhD ([00:32:03](#)):

Based on one estimate of the emissions intensity of the pharmaceutical industry globally, they said it was a higher intensity emitting industry than the automotive industry. But taking those figures, someone else said, if the average adult American with type two diabetes could eliminate their

medication use, let's just blue sky this, right? I'm being sarcastic that they would reduce their carbon footprint 29 to 9% more than they shifted from a high meat to a vegan diet. And anytime anyone talks to you about dietary changes, which by the way are the least impactful thing that we can entertain to lower the impacts of or the emissions from global livestock stock, there are far more far impactful ways to do that. But we're talking about the rest of your life, and we know that those diets are not sustainable. People can't stay on them. The vast majority, yes, there are the outliers, but by and large people end up coming off that. And so it's not the sort of impact that's frequently cited.

Dave Asprey ([00:33:26](#)):

There's something else that I've never seen accounted for, and this is real science. There is a study that looked at the amount of farting from vegans versus non-vegan omnivores.

Peter Ballerstedt, PhD ([00:33:42](#)):

Flattest, please, flattest.

Dave Asprey ([00:33:44](#)):

Flattest. Thank you. 17 times more flattest. If you are on a plant-based diet, what is the carbon emission from that?

Peter Ballerstedt, PhD ([00:33:52](#)):

Or if we are primarily fat burning as opposed to sugar burning, we breathe out less CO₂. Oh, yeah. So it's almost like this. CO₂ has to come out somewhere. I mean the respiratory quotient of 8 billion people. If you could shift that a few, and then I talk to people, and there are various ways that they restrict the conversation. It's like when I talk to people about sustainable food systems and they stop at the farm gate, it's like, well, what about the population that we're feeding? Oh, well, no, that's for, well, we'll leave that to the healthcare industry to talk about. And there's a part of me that says, okay, I get that. And if I'm being open-minded and charitable, I'll say, could we at least include another perspective? You seem to be very focused on one. When I'm less charitable, I say, you've done a poor job. Maybe it's time for somebody else to take it for a while. And I said at one conference, healthcare is an elective, food is a requirement, so maybe we should reorder our priorities. Just, I mean, I'm very grateful that if on my way up to Salem where I have to go in about less than an hour, that if I get in an accident and I break a leg, that I've got that sort of acute care, very grateful for that. And we do that pretty well. It's the chronic that we're not real good at.

Dave Asprey ([00:35:31](#)):

If we were to redistribute agriculture, bring back small farms, people having chickens in their backyards, people having cows or sheep or goats, do we have enough land, enough soil to feed the us?

Peter Ballerstedt, PhD ([00:35:46](#)):

Oh, yeah. Oh yeah. And I take that and I switch it. I hear a version of that we can't feed, right? I mean, that's the version. We can't feed everyone the kind of diet that has the amount of animal sourced food that you or I would recommend. I want to switch that and say, we must, yes, find a way. This is a moral imperative now. It's not taking one model and transplanting it everywhere around the world. That makes absolutely no sense. It is leveraging existing knowledge from both ways and getting that more distributed. There's one example in Nepal. Dairy is based on buffalo, not cows.

([00:36:36](#)):

They had a tremendous problem with mastitis. Some people put together a dry cow management program using existing technology, and they got that communicated to these produce, these dairy people, and they took this rate of mastitis infection from, it was over 50% and they drove it down less than 20. Now, this makes an animal welfare impact. This makes an environmental impact, this makes a profitability to the farmer impact all kinds of things. And it's like the work that shows that if we could feed these children and egg a day that we can then when they're nine years old, measure scholastic differences. Wow, this is not a heavy lift. And this is what partly gets me so aggravated about the people that want to sell us these other faux food and whatever, whatever. The fact is that, well, here's some statistics. Brazil has three times the cattle that we do in America, they produce less beef.

([00:37:50](#)):

A half of the world's cattle are in Africa or Asia, three quarters of the sheep and 98% of the goats are there. Whatever you're going to do to lower the impact of livestock, agriculture has to have Africa and Asia in mind where the animals are. And yet we entertain things in the high income countries. And the irony is that while we have people who are being harmed by too little because of poverty, access, affordability issues in the low and middle income countries, in the high income countries, we have people who are being harmed because they think that that's the right thing to do because they've been told by various authorities. And so part of this is to let people know that these issues that have been sold don't listen to the same people that sold you the diet that made you sick in the first place. And they're the same people. You can go back to the sixties and seventies and see the same people. Some of them are still around. I mean, some of these people have been wrong every time their lips move and air comes out, and yet they're still look to, for their expert opinion, they're better than weather people.

Dave Asprey ([00:39:14](#)):

I almost heard you say Dean Ornish, when you said that it was weird. I mean, that was just a glitch in my audio system. Yeah.

Peter Ballerstedt, PhD ([00:39:20](#)):

Well, I found something that I agree with Dean Ornish on. He said something like, what's good for your heart is good for your brain, or he put it the other way. And I agree with him, but I don't think he, and I agree on the details.

Dave Asprey ([00:39:36](#)):

He was one of the first Western trained doctors to say that diet and lifestyle are variables that matter. His recommendations are wrong, but at least he showed that they matter. And so I look at this and with what you just said, intentionally starving a population is a war crime. You're not allowed to do that. That's why Rumsfeld was actually wanted in several countries for war crimes before he passed away. So I feel like we're doing this, but we're doing it under the guise of just telling a story that some people desperately want to be true. It just isn't. And one of the unfortunate things that our brains do, especially when we don't get enough animal fats, is we do shortcut thinking. And if something is a really big problem, just tell yourself a story that is not a problem. And what you said there is it is a moral imperative for us to get animal protein because well, that supports life on the planet and it supports human health. So ignoring that, because you don't like the idea that an animal is going to die, that was going to die anyway if it had a life. But ignoring it and telling yourself a story, it's deeply harmful to your psyche. Like believing lies.

([00:40:53](#)):

Yes. Yeah, it is so painful. But also recognizing you were wrong is also painful. You went through this change with your metabolic health when you started eating grass-fed ruminants and made yourself much healthier. And I've had so many guests on the show who believed one thing about medicine, got sick, spotted the bullshit, and then changed. What do you think made you able to make this shift?

Peter Ballerstedt, PhD ([00:41:22](#)):

Well, so let me just start. So 2007 was the beginning for me of the sort of this phase. But starting in 91, I had to confront the fact that I was an alcoholic. And so that had to change. And so I have some experience with that community and that journey. And then I come along and see, and it was from reading Mike and Mary Dan E's protein Power. It was from reading Good calories, bad Calories. And the first thing that happened was, I got pissed off. The truth will set you free, but first it'll piss you off. Amen. And then it's like, okay, get over that. Get something useful. And so I realized that the people I had been trained to serve had been unfairly accused of being the cause of this health crisis that was rolling across the countryside. And so then I began to see that there was a need within that community.

([00:42:38](#)):

They themselves were talking about family enterprises, multi-generation. Anything that would, as you said earlier, extend health span of individuals within that would be beneficial, right? As well as we all care about the welfare of our offspring. So it doesn't have to be within any one community for that to hold truth. But I just found myself having opportunities. As I said earlier, this was not a considered plan that took me from lower Bucks County, Pennsylvania to where I am today talking to you. But I recognize

that the things that happened along that way prepared me and equipped me for this mission right now, which as I say, is to communicate to people that well, and again, colleagues keep giving. I mean the whole Don Pedro, the sod father of the ru, other people gave me each piece of that. I just shamelessly leverage everything. So one colleague, Adele, he gave me these, if we're engaged in conversation with other people, people of goodwill ought to be able to agree on two things.

[\(00:44:08\)](#):

One, we need to provide adequate essential nutrition, however you choose to do that. And I'm not ignoring the conversation downstream, but I want to make sure that we have this bit before we go any further. Of course, I would say, how about optimal? But let's settle for adequate. And then the second thing is that we ought to agree that a goal should be the restoration of metabolic health. Now, again, I would raise my hand at some point and say, how about we just maintain metabolic health? But again, if we can agree on those two things, then we're having some other kind of conversation and we need to act accordingly. Another colleague of Friedrich Lois out of Belgium, gave me three things. One, public health will be harmed by a further restriction of animal source foods. Wow, it's already being harmed by my mean. But number two, that there is no sustainable food system without animal source foods.

[\(00:45:18\)](#):

Number three is these are our ancestral foods. This is part of our cultural heritage, regardless of where that ancestry and heritage springs from. There's this artificial western construct that people are trying to impose on other that's called imperialism, and I resist this. So with all of those sort of as the foundational things, let's have a conversation. How are we going to produce that? Well, ruminants, they have this ecological advantage. There's no competition between ruminants and humans when it comes to feed and food, whether where it's produced or what we feed them. Okay, we have 700 million people in the world that are dependent on herding and pastoral lifestyle. What are you going to do if you're going to say, we're going to take that away? There was a paper recently that said, I think it was 12%. If we swapped out 12% of animal source food from mono gastrics to ruminants, we would reduce emissions and free up food for humans for like 500 million people.

[\(00:46:43\)](#):

Wow. Mono gastrics being chickens. And then we can get to raising ruminants on grassland is the only agricultural enterprise we have that can share the environments in which it's taking place. When we produce crops, we must dominate. We must wipe out the existing vegetation and till and et cetera, and et cetera. So there's a fundamental difference if we're going to talk about that. And I just saw a graphic that said, okay, if we're going to produce however much meat from different animals, you're going to have these emissions differences per unit, but how many animals do you have to kill to get that amount of meat? And so now you've got this balance between numbers of animals and emissions. And again, a paper that came out last April, estimated comparable emissions between wildlife dominated savannas and livestock dominated savannas. So we've been having these conversations as if there is some zero emission environment and the only emissions come from man's activities, and that's false, we start adding all these things up. The impact of the healthcare industry, which I will argue comes from malnutrition primarily. How do we balance that against food production? Everything we do has an impact when we convert farmland to suburban housing tracts, what happens to the emissions from those areas, et cetera, et cetera. So it tends to be a very much more nuanced and complicated. Somebody said, ecosystems are vastly more complex than we think, and they may be more complex than we can think.

[\(00:48:56\)](#):

Just the day before yesterday, I was at a breeding, grass breeding, forage breeding business, and they're looking at what takes place as roots go down into the soil and the relationship between the plants and the microorganisms, they support 20 to 40% of the carbon that's fixed in photosynthesis is exuded out the roots to feed the microorganisms that live within that R ophere. And so at the one example, they were seeing at depth changes in pH just due to the grassroots and that activity. Wow. So there's all these interesting things that are taking place, and we can apply those. Unfortunately, as I've said several times, we're being distracted by things that frankly aren't the biggest problems that we face.

Dave Asprey ([00:49:59](#)):

You brought up something that really inconvenient. If the reason that you've chosen to not eat animal foods is because you're worried about death. After I was a vegan, I ended up traveling to Nepal and Tibet, and I spent time at monasteries and studied esoteric things. And one of the rules there is no killing. And so if they were going to build something, they would sift through the soil and remove the earthworms. Very, very conscious. Yet they had a yakkin on the prayer pole. And so I found the head of the monastery, they ka malama, which is another ruminant, but a different flavor. And I said, you tell me no killing, but you have a yakkin on your prayer pole. You're a hypocrite. Now that wasn't rude because Tibetan Buddhists love debate, and he laughed just right in my face and said, one death feeds everyone. And if you calculate deaths per calorie, which is a moral obligation, if you are one of those death vegans, you cannot eat anything that's industrially farmed. The only choice is grass fed animals that are well-treated

Peter Ballerstedt, PhD ([00:51:06](#)):

Well. And even if you're going to do that, make sure that your calories are equal and they're not. Right. So I get involved in this conversation. People talk about trophic level or the system productivity, and they'll go kill a calories per acre or hectare, and they want to compare that. And it's like, well, but at some point we're going to feed these. And so are calories from plants metabolically equivalent to calories from animals? No. Is protein from plants metabolically equivalent to protein from animal? No. But yet we talk about pounds of, and it's not even protein, it's crude protein. And that's something that I've talked about in other places. And then I see people spending all this time trying to balance their diet based on what they read off a label or in a table. And they don't recognize all the limitations of the data, not the least of which is that value could be plus or minus 20%.

([00:52:09](#)):

So we have no idea. And somebody else just said, and this occurred to me earlier, I forgot to mention it. The gentleman I know from North Dakota State University, he ran a feeding trial with growing female pigs, and he tried to emulate the macronutrient composition of the American diet based on NHANES data. The attending veterinarian stopped the study because it was inhumane what was happening to the pigs, but he and someone else involved in protein nutrition for mono gastrics wrote a paper. And in it they have this line about, they have just described in detail all this detail, and they said, yeah, this is a lot for someone to ruminate on or digest or something. They were making the joke and they said, it's just easy. If you eat muscle meat, then you don't have to worry about any of this. It's as we get further and further and further away that you have to start trying to find ways to make this thing work. And so few people can make it work. Maybe that says something right. Everybody can't be doing it wrong.

Dave Asprey ([00:53:22](#)):

It seems like there are two big cons that the food industry has been so successful in spreading. The first one was that a calorie is a calorie, and so you can have corn syrup or steak, and they're the same. They're just not. So calories are not equivalent. And the second one is that protein is protein. And I always like to talk about the fact that snake venom is an animal protein you probably shouldn't eat unless you're in Taipei. And nerve gas is a plant-based protein. All proteins do different things. And for you to say, you need this much protein, this much fat, it's an excuse for the industrial food and chemical companies to sell you crap and tell you it's good for you. But if you track your own data, look at your lab tests, look at all the evidence out there, you're going to eat some animal protein if you want to live a long time and feel good and have healthy children.

Peter Ballerstedt, PhD ([00:54:10](#)):

Yeah. One other thing about animal source food is more than merely amino acids. I mean, it's all of the nutrition that we need. So again, that's been oversimplified. I get it. People were so scared of fat that they wanted to emphasize the protein, so they went away from talking about meat. But what they don't recognize is that puts them on par with the faux products that come out. But when we test those faux products, we see that in no way are they comparable. And there's some details that's come out recently to help us understand just how poor that's going to be for people who think it is. But again, we've been evaluating the nutrients and comparing them, and that extends to the environmental impacts. And so one paper that came out of New Zealand and I don't know, 2021, and so they said, okay, metrics matter was part of the title.

[\(00:55:20\)](#):

And they looked at a hundred and some odd of the poorest countries and territories, and they looked at the protein in their food supply and they broke it out by plant and then animal source in one bar. So you have two different colors. And then they drew this line across at the RDA for the increasingly endangered and rare 70 kilogram individual and said, okay, only a few down here. Only a few of the very poorest are below that level. Okay, understand RDAs a minimum. It's not the target and it's probably not 0.8. It's probably 1.2, 1.0, 1.6, maybe better goal. But in any case, and of course that's always reference protein, which means high quality protein, which means meat, eggs, dairy, seafood, as opposed to what they want you to believe. So then they said, okay, how much of that protein in quotes is actually digestible?

[\(00:56:28\)](#):

And now you get to where maybe two thirds aren't getting enough. And then they said, well, how much of that protein was actually utilizable because there was sufficient lysine to support the utilization of it, and now none of them are. And then they went further and they said, what's the environmental impact of protein from wheat versus dairy? And of course, dairy has a higher land use and higher water and higher greenhouse emission. When they looked at utilizable lysine, they brought them to parity. So all of these conversations that people think they're having are based on poor metrics, oversimplified understandings, and a certain amount of propaganda.

So again, relax. When you improve your health, you are improving the world. It may be the most impactful thing any one of us can do. We have no idea who's watching. So somebody may see what's happening and say, okay, what did you do? Some of us may place so that we can then spread the message a little further. But it starts with the individual. To get back to the question that you asked, it's the individual, have you had enough yet? Because if you understand the trajectory, it's going to get worse. So maybe it's time to try something different.

Dave Asprey ([00:58:01](#)):

If you love yourself and especially your kids enough and you have a high enough level of consciousness to ask questions, it becomes really, really clear what's necessary. Putting your health and how you feel at the front of requirements ahead of carbon, ahead of whatever sort of self-harm is the current in vogue. It's something that creates stronger and evolving humans over generations. Or we can devolve because we're eating garbage and we're telling ourselves it's not because we're just too tired due to the real thinking. I think your work is so scientifically validated. It's so strong. All of your points make sense that a human being who is rational and capable of thinking, who spends two hours going through the research and publish, is going to have to challenge some assumptions about reality. And that's the whole point of the show is I want to find people who are doing the kind of work you're doing saying, look, this is how it works.

([00:59:02](#)):

Does this make sense? Because you can believe, Peter, you cannot believe Peter, but he's worthy of consideration. And I believe that he's right on the things he's saying. And we're using hard numbers, hard science, measurements of emissions. But the difference is that if you're trained in industrial medicine or in industrial big pharma or even industrial food, you don't see systems. You only see single causes based on very flawed theories. And when you're trained in soil agriculture, it's a complex dynamic network subject to chaos theory and subject to a lot of distributed behaviors that only happen when you have soil microbes. It only happens when there's fungus and when there's a full intact ecosystem. And no, we don't understand it fully, but we can see when it's good enough because you can measure it. And the movement to destroy ecosystems and the name of human health or in the name of animal health, I believe it is fundamentally evil.

([01:00:02](#)):

It's not just wrong. It is anti-human. And it's if you're a biohacker or you're with me on this quest to live way longer than you're supposed to, understanding systems is the most important thing you could do. And understanding soil systems will directly contribute to you living longer and being a better human being along the way because you have enough energy to do the right thing. Peter, thank you for taking the time for the interview today. I know you've got to get to Salem and keep beating this drum. Keep sharing the data. You're doing great work in the world. Thank you. Thank you very much. I appreciate that. And thank you for what you're doing, and thank you for this opportunity. You're very welcome. And guys, if you wanted to Google it, it's Peter Ballerstedt, B-A-L-L-E-R-S-T-E-D-T. But just go to daveasprey.com and get the full transcript with all the links to everything we talked about. I'll see you soon, Peter.

Peter Ballerstedt, PhD

Thank you.

[\(01:00:59\)](#):