

Paleo Solution - 357

[0:00:00]

Robb: Hey, folks. Robb Wolf here, another edition of The Paleo Solution Podcast. Today's guest is Dr. Bill Schindler. He is an associate professor in the Department of Anthropology at Washington College. He is also the co-star of the wildly popular National Geographic Channel show, The Great Human Race. Professor Schindler, how are you doing?

Bill: Good. Thank you, Robb. Glad to be here.

Robb: Thank you for showing up. Just so folks know, I dropped the ball on our first recording and I'm still feeling horrible about that. I need to be shot with an atlatl at some point for however I messed up our scheduling. Huge apologies on that. But, Dr. Schindler, I'm a huge fan of your work and just the whole concept of looking at our not so remote ancestors as kind of an insight into modern health and wellness and whatnot. But I'm really curious, how did you get into all of this stuff? Pursuing the anthropology, pursuing your deep knowledge of primitive skills and whatnot?

Bill: Really, Robb, it really has -- It started with food. It really did. I started, well, I grew up watching Julie Child regularly, on a regular basis. I mean, even five years old, I had it on the TV. And I just loved seeing people preparing food, watching their mother in the kitchen. And my father was a big hunter and fisherman and he took me outside all the time. I didn't know it then but what I loved was just the connection with my food from the very beginning to the very end.

When I was ten, I started to forage. It was the one thing that I started to do outside of what my parents were showing me and it was difficult to get across into the house because it was the kind of thing that my parents weren't used to. But I started to forage and, again, just built that connection with my food and with nature more than I ever had before. And I started to realize that the hunting piece of this, the hunting and the fishing and the trapping was something that I felt I need to do.

I never really liked killing but I felt the responsibility to do so. And the archeology started to come into this when I wanted to take the hunting and the fishing and the trapping to the next level. I really wanted to do it all. Hunting is a great thing to do to connect but I wanted to connect on a deeper level. I wanted to learn how to make bows and make arrowheads and make the arrows or make the string and make the nets and all of that.

Then in the '80s, it was difficult to find people that were in that world. I didn't know then there were people all over the world doing these things but we didn't have Facebook or the internet to connect. I stumbled around for a while. When I started to learn some of these skills, I realized that I wanted that connection to be even more meaningful. I wanted to not know how to make an arrowhead from anywhere in the world and any time period and go out and hunt with it.

I wanted to learn that if I was going to hunt white tailed deer in Eastern and North American I wanted to learn how to make an arrowhead the way people did in the past in that location and then go hunt with these things. And that was where the archeology comes in because I've realized that you need the archeologists to inform skill set at that level.

Robb: Right. Interesting. So, I've kind of noticed this and I think you alluded to it a bit but curious as to your opinion on it. Even though social media can be frustrating and fragmenting, it is interesting that maybe some archaic skill sets that maybe otherwise could have been lost to history like people are YouTubing themselves doing flint knapping and how to create cordage out of the tendons of animals and stuff like that, then it's pretty accessible to anybody else that's interested in this. What are your thoughts around that?

Bill: I completely agree. I'm the chair of an organization, a worldwide organization that focuses on experimental archeology, primitive technology, open air museums and reenactment, historic and prehistoric reenactment. It's based out of the Netherlands. And this organization, it's called Exarc, is an amazing organization. It's a network really, a hub of all these primitive technologists and people that deal with these sorts of skills and interpreting to the public.

And the way that we can do what we do is because of the internet, and the way that we can share this information. And my son, he's 11 years old, and I will tell you just you can talk with him, he's on YouTube every day for a little while -- not every day. But he's on YouTube quite a bit and then he sees people doing different kinds of things that I know nothing about and then he's out in the garage or out in the woods trying to replicate that. It really is. When used properly, it's a powerful, powerful tool.

Robb: Right, right. So, I have two daughters, four and a half and two and a half, and we've started to do a bit of foraging around our property. I live in Reno, Nevada and so it's a little bit of a bleak environment in some ways. High desert.

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I'm getting myself acquainted with some of the indigenous foods that still exist around here. But how would you recommend, if folks have kids, how do you get

them going with this stuff? And inevitably, people bring up the safety concern like foraging for mushrooms, potentially a little more dodgy versus like roots, shoots and berries, maybe a little less dangerous. But how would you introduce this to kids?

Bill: Well, first of all, I think it's great to introduce it to kids. I grew up as a kid being scared of things that didn't come from a grocery store. I mean, that was the environment in the '70s. If it didn't have a label, didn't have an expiration date on it, we shouldn't be eating it, right? And I'm still fighting that mind even in my adult life. I think kids seeing food coming from the place that it comes from and seeing it in its raw natural state is a wonderful thing that will set their minds up for how they view the rest of the world for the rest of their lives.

It's funny you say mushrooms. I do a lot of urban and rural foraging tours and one of the things that most foragers say is that you should identify a plant and at least three different sources before you'd start to attempt to consume it. And there is something to that. I definitely would say with mushrooms, no doubt, I mean, there are mushrooms out there, there are plants out there in North America that will kill you. There are ones that will make you sick. The majority of them are absolutely fine.

But the mushrooms, the ones that don't kill you, that you shouldn't be eating make you wish you were dead before you recovered. They're that bad. I mean, kidney failure, liver shut down, terrible, terrible things. So, mushrooms, there's definitely a place for that. There's about 15 that I deal with on a regular basis every year. Well, we could talk about those in a minute. But plants, however, the first thing I think that I would suggest is that we don't approach it from the sense of fear.

I mean, we are the only species on the planet that turns to other people to tell us how we should be eating. And it's a weird thing. And so our ancestors who biologically have been the same for 200,000 years, but even prior to that, other earlier humans, brain size is the third of the size arrows. You're doing absolutely fine living off of plants and other wild things. So, there's no reason to be scared but respectful, I think, is a better approach. We need to be respectful.

And we need to understand that every single plant that we eat in the grocery store, and I know you know this but I know that a lot of people don't, every single plant that we eat, every single domesticated plant has a wild ancestor. They didn't just appear one day. They've been modified sometimes through selective pressure and sometimes, obviously, through genetic modification on a different level today but they all have a wild ancestor. And these are the kinds of foods that we're looking for and those foods have a nutrient density in them that is far above anything we can get at any grocery store, even organic produce.

So, I think we should -- The other recommendation is I grew -- Again, growing up, doing this on my own with just a few field guides, I had this idea of, this notion that I needed to go, this romantic notion of going into the middle of the woods to find these plants, somewhere very remote that should take me a long time to get somewhere to find these exotic plants. And I had a Peterson Field Guides. That was my first book. And this is little encyclopedia book with not a lot of information but ton of different plants.

And every time I identified a plant and ate it, I took a leaf and I put it in the book and pressed it. This book, it started an inch thick and it became three inches thick over years. But there are a whole bunch of plants that I couldn't find. For years, I just couldn't identify them. And they are frustrating to me because they'd say they're very easy to find. And then one year I went to visit Wildman Steve Brill. Have you ever heard of Wildman Steve?

Robb: Yeah, yeah.

Bill: So, I remember I took a foraging course from him in Central Park. This is a long time ago. And we met at the entrance to the park near the Museum of Natural History. And he would meet you and at that time it was 10 bucks maybe collected from everybody and we'd start to talk and we took about five steps and he turned around and he said, "Look at your feet." And I looked at my feet. I'm thinking we had to walk for miles before we found something.

I was five or six steps, "Turn around. Look at your feet." And I looked at my feet and just about every plant that I couldn't identify was sitting at my feet. They were in my lawn. And then when I went home I saw they were in my lawn at my house. So, you don't need to go to somewhere exotic. In fact, one of the worst places to go look for wild plants is in the middle of the woods. They don't grow there very easily with the canopy and the shade.

Robb: Right, right. Doc, so, I don't want to ask an overly leading question here but -- I'm trying to figure out how to throw it out there. But what can modern medicine with all these degenerative diseases that don't seem easily fixed with a magic pill, the way that penicillin was so effective against infectious disease? What can be learned from this anthropological perspective on our not so distant ancestors?

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Bill: That was really well done. That wasn't too leading.

Robb: Okay. Clearly, I have huge confirmation bias on this. So thank you.

Bill: I think, if we, holistically, if we break down all these cultural modern barriers about what's good or bad or right or wrong or acceptable or unacceptable and really look at how people dealt with each other, their environment, their food, their diet in the past, we could learn a lot. And the problem is everybody I talked to, and even me, we go to a certain point and there's a place where we cut it off. This is the line we don't cross any longer.

But if you really look at how people dealt with their own health and their diet, we look at things like, obviously, beginning at birth with -- And there's, obviously, impacts on the modern western diseases. But everything from natural child birth to breastfeeding to things like pre-mastication of food. If you look at people, parents chewing their food before they give it to their children, imparting all those natural enzymes and all that, wonderful bacteria into their kids.

And with diet, we go to a certain point -- We're doing a huge event tonight, tomorrow and Friday at the college here on insects, entomophagy, insects as food. It's a place that a lot of people won't even let their brains go in the modern western world but people around the world have always eaten insects and many still do today. In fact, I believe it's the first nutrient dense food our ancestors had access to before they had any tools whatsoever.

So, things like getting dirty and staying dirty and having their hands inside of animals and in the dirt and all that wonderful bacteria in these places. Now we use, obviously, hand sanitizers and those sorts of things. It's not just about diet but in large part it is. And to circle real quickly back to our earlier conversation about foraging, one of the other things we need to keep in mind as well is that most many wild plants have some sort of a toxin in them and we're scared of this word toxin. We shouldn't have it in our bodies.

Well, if you look at the wild plants that ended up becoming domesticated and staples in many diets around the world, almost all of those plants are toxic at some level. And we found one of the cool things that when you look over time that our ancestors did was that they developed technologies to detoxify these foods through fermentation and drying and cooking and a whole host of others. Geophagy. Sometimes they would actually eat dirt or clay at the same time they ingested some of these foods.

But these plants had toxins in them. Many people might disagree with me but we have a liver for a reason. We abuse our liver with alcohol today. But we do and we don't use it the right way. And we shouldn't be scared of this word toxin because if the only wild plants that we introduce into our diets are these very safe dandelion leaf or a chickweed leaf or something like this. It's not really making a difference.

We should look at this from a completely different perspective, step outside of what we think is right and wrong and valid and invalid and proper and non-proper. And I think we can really make some tremendous gains there, meaningful gains.

Robb: Right, right. Doc, how would optimum foraging strategy plus palate fatigue kind of fit in to that whole story of trying to optimize our nutritional intake while also trying to mitigate that toxicant exposure to some degree?

Bill: Well, it's not a simple equation. Some of the issues with optimal foraging theory and calculations are coming at it from modern perspectives on things. So, if you look at some of the calculations done -- So, optimal foraging theory, for the listeners who don't know what it is, and there's many different facets to it, but it's literally trying to figure out what makes the most sense for somebody in the past when they make decisions about how to feed themselves. In other words, how do you get the most for the least amount of work?

And the idea is that if you can figure this out and understand all the different piece of this, that you can, the people in this particular place at this particular time will go after this resource first and then this one and then this one. So, some of the problems that we can't put our finger on are, obviously, cultural, religious taboos or issues and things like this. But we also don't, I think, completely understand the way people dealt with these foods in the past.

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So, when we look at some of these optimal foraging calculations for things like marrow and other parts of animals, they are sometimes hard to get. A lot of the ones that I, the calculations I've seen don't take into account that all you need to do is take the bones, crush them real quick and throw them in a pot of water to get the marrow extraction out into the stew or the soup. Instead of taking all this time and extracting the marrow out and calculating how much time it takes to take cold marrow out of a bone which, obviously, a time consuming process.

One of the more recent issues with modern archeology when we look at some of these labor-averse caloric return calculations is with acorns. And for years, and it's still even in the literature today -- And if you look at Euell Gibbons' *Staling the Wild Asparagus* and some of these other books, and they talk about how to get leaching tannic acid out of acorns, they say, which is a water soluble toxin, you take the acorns and you throw them in a big pot, you fill it with water, you boil it until it turns brown, you dump out the water, put more water in, boil it again. It's just like a six our eight-hour process depending on the type of acorn you have.

And I did that for ten years. It doesn't make sense. And because of those calculations we restricted or regulated acorns, we call it a survival food. Which it, obviously, is not. But what you need to do is you take the acorns and you crush them first and then you increase the surface area and you can leach the tannic acid out with cold water in about 20 minutes. Completely different thing.

So, when we make these calculations, I think, again, it's modern people trying to figure this out. Sometimes we nail it. Sometimes, I think, we're way off base. But with that said, we make decisions for a lot of reasons. So, manioc, bitter manioc, which is a staple food in parts of South America and even in Africa today, is a very poisonous plant. It has cyanide producing compounds. And through selective pressure, even indigenous people, have been able to produce a plant called sweet manioc.

Sweet manioc has very little toxin in it. It's so little of a toxin that with just a little bit of cooking, the toxin is dispelled and it's absolutely safe to eat. In fact, there are grocery stores in North America that carry sweet manioc. But if you look at most indigenous groups that still rely on manioc, which is a plant that will kill you if you process it wrong and there are people that die from it, not regular basis, but I understand that people die from it every year when it's not processed properly and detoxified.

People still plant, the majority of indigenous people that rely on it as a staple still plant the bitter manioc version of the plant. And the reason is because those toxins that are there are natural insecticides and herbicides and fungicides and they plant 100 plants, they'll get a 100% yield back. And it's worth it for them to do that, not destroy their environment, make sure they have a huge yield, and process it after it comes out of the ground then it is to deal with all the other issues. And those are hard to calculate for.

Robb: Right, right. And it's fascinating to me that folks on a very intuitive level figured out that kind of economic thermodynamic interface there. It didn't, the folks that didn't figure that out probably didn't last long enough to pass on those, the means or what have you. But I've been looking at just kind of modern health challenges in a world that is full of hyperpalatable foods and almost an infinite variety of options and then kind of overlaying that with this kind of optimum foraging strategy like get as much as you can for as little effort.

And it seems like a really gnarly situation to deal with. Like you can order food to your door, pop it in the microwave, eat it, sit in your chair and work on the computer to make the money to keep doing that process. And from an evolutionary perspective you're really kind of winning. You are really pushing that optimum foraging strategy thing out to the nth degree. But then we have some serious health consequences with that.

Bill: Sure. I think one of the issues with optimal foraging theory as well -- Don't get me wrong. There's some tremendous things about optimal foraging theory that allow us to get inside into the past that is wonderful. But one of the problems is that it's almost always calories used as currency. So, it's how many calories can you get for the least amount of work or by traveling, or the least amount to forage these plants or what have you.

And I think the better way to deal with this -- Well, let me back up for just a second. I talk a lot about food and prehistory and prehistoric diets and whatnot in my work and in my classes. And there was one particular day in class a few years ago when I said something about processing food.

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And the student raised their hand and they said, "Professor Schindler, you talk about processing food all the time. When you talk about processing food in the past, you got a smile on your face and it's always, you relay it as this positive thing and when you talk about it in the modern sense it's always kind of negative connotation. Where do you draw the line?" And it caught me off guard. I said, "I got to get back to you. I got to think about this. I don't know."

So, it was a soul searching thing. I know it sounds like a little thing but I didn't know where I drew the line and it took me a couple of days and I came back and I said, "Look, this is what I think where I draw the line. If you look at people in the past and the way they made decisions about how to feed themselves, it was how can I get the most amount for the least amount of work?" And so how can I get the most nutrient dense food with the least amount of work? And how can I develop technologies that allow me to extract more nutrients or make more nutrients available to my body? Period.

And then in the modern sense, processing food, most of our decisions are for other reasons usually at the expense of nutrient density. When I say nutrient density I do not mean calories. I mean, things like quality saturated fats, proteins, these kinds of things that we need at such a high level in our diets. And certainly vitamins and minerals and those kinds of things. And that student's question has really helped me shape my entire philosophy since then and I'm so thankful that it was posed, the question was posed to me. And if you look at it, that's exactly what we've done. And we start, and I don't mean to get too off track here so feel free to--

Robb: There is no off track on this. We can go as deep in the weeds as you want.

Bill:

Okay, fantastic. I might throw a few dates and a few technologies here very quickly to help kind of set the stage. The first jump in brain size that we see in our ancestors began about five to seven million years ago with australopithecine and some others and that's about the time when we first stand up. And what we think we see there, and what I'm going to lay out here, there's a direct correlation between food technology and our biological evolution, and it's so obvious.

What we see here with this jumping brain size, and our brain is the most nutrient needy organ in our body, is the introduction of what we call underground storage organs or roots, tubers and corns, these kinds of carbohydrate rich foods that we didn't have in our diets before because all of our primate ancestors before that were just herbivores and frugivore and, in some cases, insectivores. So, they eat fruits, vegetables and insects.

Now, fruits and vegetables are fantastic but they're not nutrient dense at all and especially the domesticated ones we have today that are full of water and sugar. So, their ability to grow, nourish themselves, feed babies, grow brains was limited by their diet. When they started to access more calorie dense foods we see a little bit of a jump in brain size, not much. Then about three and half million years ago, somewhere between three and a half and two and a half million years ago, we developed our first stone tool technology.

It's also at this time period that we see the first remnants of butchered animals. We see the marks on the bones on these stone tools. That is the first significant jump in brain size that we see. So, the introduction of animals into our diets. And what's interesting here is that they're not -- And still keep in mind this idea of nutrient density. Meat is much more nutrient dense than vegetables or fruits -- Well, insects, some of them can be on par but much more nutrient dense than fruits and vegetables.

And the only access to animals that we think they had at this time period between three and a half to two and a half million years ago was scavenged animals killed by something else. We didn't have the ability to hunt, we don't think, but we could butcher food from scavenged kills on the savannah. So, that's wonderful. So, a jump in brain size, bodies began to grow, we start seeing a lot of things happening and technologies began to emerge.

And these stone tools are fantastic because the stone tool that I'm talking about, this old one tool kit can be made in less than a second. But the relationship with the environment is transformed literally in that second. So, the example I give to my students is imagine if you're sitting -- We're in the middle of the woods, we're naked, we have no food whatsoever, we are starving and kind of like a

Hunger Games, a parachute comes down and drops 200 pound deer in front of you.

We would starve to death and we would die before that animal rotted to the point where we could really get into it. We could eat it some, we could eat its eyes, and maybe a little bit at the back end and that's about as far as we could get. We would starve to death. But if we could have that stone tool, really basic one second to make stone tool, to make stone tool, we would eat the entire animal.

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But in this particular case, three and a half million years ago, they are just eating flesh or just eating meat. What changes about two million years ago, which is where we see an exponential change in growth in brain size, in body size, both, are two major developments. One is fire and the other is the ability to hunt. And when we hunt, we have first access to the most nutrient dense parts of an animal, the fat, the organs, the blood, the brains, the eyes.

Those things are the really nutrient dense part. And then the flesh is there as well which we can access later. But that's where we see this huge jump in brain size. Numerous things happened at that point but brain size and body growth are the two biggest ones. And over time, other things began to happen as well. We began to do better things with fire. We began to make stone and then later on ceramic pottery and cook directly on the fire and all sorts of liquids. We can hunt in better ways and eventually about 12,000 years ago we began to farm.

But up until that period, our bodies are changing in direct response to the technologies that allow us to transform our diets. And if you think about it in that way, then we're in a really, really, really bad place right now because our bodies are a direct result of these technologies, these change in diets and what's happened to our diet. And this is, obviously, not news to many of your listeners, but what's happened to our diets in the past several hundred years especially, but even in the past 12,000 years, is completely against everything that's happened for millions of years beforehand.

Robb: Thank you. That was absolutely amazing. And then, additionally, I really buy into this perspective also and just find a profound benefit from a clinical perspective and also from a hypothesis generation perspective using this anthropological lens to look at all this stuff, to start asking questions. Like modern medical science has been really good in this kind of reductionist process of figuring out mechanisms and metabolic pathways and whatnot but it's really been largely lacking this organizing framework that like in physics you've got quantum mechanics and Newtonian kind of physics and biology has this evolution via

natural selection, medicine is kind of applied biology. But it's really rare that you have many people asking questions from that starting place of maybe discordance theory and this evolutionary biology perspective.

Bill: Yeah. And we need to. We truly need to. Our bodies are biologically almost as the same for the past 200,000 years. And as we know, the past 12,000 or 15,000 years, we began to domesticate plants and then a little bit later domesticating animals and then the industrial revolution. We know that transformed our diets. We don't need to go back into that. But what we do need to remember is that our bodies are the same as they worked 200,000 years ago and they were what they were 20,000 years ago because of three and a half million years of technological transformation, technological innovation that transformed our diets.

That's really, really important. So, I'm actually in many ways glad that we weren't able to talk before and we're talking now because a lot has happened in the meantime. And one that I'm glad to be able to talk about, one is that we are starting a lab here at the college, we're in the developmental phase, now called the Eastern Shore Food Lab and our kind of tagline is informed by the past, inspired by the future.

And the whole mission of this food lab that we're developing is to explore and create food system solutions that are economically, environmentally and even culturally sustainable by taking lessons from these three and a half million years of our dietary past, infusing them with modern technologies. Because one of the things, I think, that's really interesting, which I'd love to hear your perspective on as well, is that if I'm even half way correct with this idea of valuing this kind of looking for nutrient dense food and developing technologies to increase nutrient density, there are things that have happened in the past 12,000 years that I think we should consider as viable options for ways of transforming our foods to make them a better, to make them healthy for us.

I don't necessarily agree with cutting things off at 12,000 years that everything before is good and everything after is bad. It's too simple. If you're going to, for instance, if you're going to eat grains, they should be soaked or fermented. And if you're going to eat bread it should be lacto -- I'm sorry, not lacto. It should be a sourdough long fermentation kind of old world fermented bread sort of thing.

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And when we get into a conversation that's that deep, that's when we can have meaningful conversations around food. Everybody talks about food all the time but none of it is meaningful, right? Because we don't have that background to

have that real conversation where we lump really amazing old world sourdough bread in the same category as a modern bread. Exactly.

So, what we're going to do is we are looking to identify as many of these prehistoric and even existing technologies from the past, fuse them with as many things as we can of modern technologies that allow us to transform these foods into foods that are acceptable in the modern western world because you and I think have, and I'm sure many of your listeners, have the same -- We're into this for the right reasons and we think it's fantastic and we've transformed our diets and our lives based upon this idea.

But it needs to, something needs to happen for a lot of the rest of the modern western world to buy into this. And part of that is we have expectations of taste and texture and presentation of food that stops people too early from exploring things, exploring foods that I think they should put into their mouths and into their bodies. Anyhow, we're going to be working on this over the next several years, probably launching at the next year and a half.

In fact, I'm taking off next year for a full year sabbatical and I'm traveling the world to work with indigenous peoples, foragers, hunters, fishermen, and top star Michelin chefs to try to make some of these connections as early as possible.

Robb: That's amazing. If you want help with fundraising or somebody to carry your luggage, get me on that. I will help any way I can. That is absolutely amazing.

Bill: Thank you. And I'm super excited about it because I've seen -- I have three young kids and what was interesting to me was I always, I had this, we were talking about kind of my past before I had these two, well, I thought were two separate tracks. I wanted to learn how to make stone tools and make pots and make bows and these sorts of things and I was always in the kitchen. And I thought they were two separate things. And it wasn't until I started having kids and really brought all these skills into the house because I felt the need to do so for my family that I realize they were the same thing. Almost every prehistoric technology has something to do with food, getting food, processing food, storing food. And also these two things were in fact the same track.

Robb: Yeah, I completely agree with that. If you were to pull one, I hesitate to even call it survival skill but one skill out of the kind of tool kit of an average Paleolithic person that would be really both fun and beneficial for people to understand and develop a skill set with today, what would that be?

Bill: Well, I'll answer that in two parts. First one is in order to do any of the other skills you have to be able to make stone tools. You need a stone tool to do

everything else. That's why you see that progression of stone tools and then you start seeing other things happening after because you can't modify bone or antler or wood or anything without those tools. In fact, we don't like to think about it but humans are the weakest species on the planet.

Our teeth are useless. Our nails are useless. We're not very strong compared to other animals. But we modify our environments. And those stone tools let us do that for the first time outside of our bodies. So, stone tool technology is amazing. It's so much more accessible now than it ever was before. YouTube videos, you mentioned earlier, there's a lot of really skilled people doing a lot of stuff online with stone tool technology.

I think even if all you do is get, search out and find the right kind of rock and take off a flake and make a sharp edge and just do it once in your life, it's one of those, "Wow, I'll always remember that. I really, I did something really cool here," and you'll have that connection. The problem with really advanced stone tool technology is it's really, really difficult. It takes years to, the initial parts of making flakes are very, very easy but then to even get to the level where Neanderthals were 250,000 years ago takes a lot of practice.

So, some that wants to do that, fantastic. Somebody wants something that's a little bit more accessible and easy to deal with, I think, probably that the one moment I remember when I first got a primitive skill, got it, was when I made fire in a primitive way for the first time.

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And that is, again, super accessible. If somebody can show you how to do it you can do it in one day. But several days of practice, YouTube videos can really get you over the hump, but hand drill or bow drill fire, the first time that I blew that bone into a flame, I'll never forget it.

Robb: I was going to pick the fire kit as well as the one that would be super cool and kind of a legit potential pull your fanny out of the fire kind of situation if you ever needed that skill set. But then as soon as you start to talk, I was like, "Oh, yeah, but you do need to make some sort of--" Even really rudimentary stone tool kit to be able to modify the, get the hand drill and the base board and all the rest of that stuff even put together.

Bill: Yeah. You sure do. But something to spend time practicing is really the fire because the stone tool piece, to make a suitable edge on a rock, we've taught chimpanzees to do it. Actually, chimpanzees have taught themselves how to do it. It's super, super simple. So, my suggestion would be go out, start banging on a

few rocks, wear eye protection, because these little tiny flakes that come off can easily cut your eyes as much as they can cut anything else.

Make a few flakes. But those flakes, those tools are super amazing to modify bone, antler, and wood, and then start building a tool kit. Because that is a wonderful, wonderful skill to have on both survival level. Hopefully, we don't find ourselves in that situation but it is for that. But it is also for that connection, that piece, making fire from nothing but few pieces of wood and a rock is really powerful.

Robb: Yes, it is. Yeah, and I'm just getting ready to start showing my oldest daughter some of the stuff with that but my wife keeps reminding me that we live in the high desert and that could add some knock on consequences and we have to really figure out, okay, you only do this with a parent and we don't do it during peak fire season and all that stuff. She is super fascinated by everything that I've done with this and my skill set is nowhere near yours but I can get a decent fire kit put together if I can find even some marginal rocks to bang around and get an edge. So that's pretty cool.

Bill: It's super cool. Yes, sure, it is. That's wonderful.

Robb: Doc, how do you -- I know folks like some of the practical application stuff too. Like clearly I would assume that your health and wellness practices are pretty well informed with this kind of evolutionary biology, anthropological template. Like what's kind of a day or a week in the life for you as far as like some physical training, getting out in nature, what your food looks like and all that type of stuff?

Bill: Well, my weeks vary nowadays. I'm so busy. I wish it was something that was a little more standard all the time. Typically, as far as exercise goes, I have -- My background is in wrestling. I wrestled in college at Ohio State and the College of New Jersey and most of my, any athletic experience that I've had has been through that lens. A little bit of football but mostly wrestling. Then I did a lot of weightlifting, a lot of running, a lot of training, obviously.

But now, with all the other constraints of jobs and family and the like, I'm not in the gym as much as I would like. However, I have mixed feelings about that because I really -- Trying to connect with, if I'm using the past to inform how I use my, deal with my modern daily life, I might answer that right now as just be active as possible. So, I do push-ups and sit ups and pull ups every day or almost every day and I do run as much as possible. But other than that, I haven't been back in the gym although, again, I'd love to be. But I would rather spend more time being outside connecting in those ways and getting my food.

So, our food is interesting. When we first started having kids, I was driving everybody in my family insane because I thought that I needed to control everything that went into their bodies. I wanted to make sure nothing that I didn't want in their bodies to get in there and I wanted to make sure that I got all the stuff they needed to have at the same time. My wife and I both have careers. We're products of the modern western world in many ways. We're both very busy. We have three kids now. We have a big dog that takes a lot of time as well.

Robb: We have a Rhodesian Ridgeback now. I feel your pain, yeah.

Bill: So, what I found after several years of driving everybody nuts, at least what I settled at and comfortable with is I almost split it into two different things. I could make sure I kept everything out of their bodies that shouldn't be there, that I didn't think should be there or I could try to make sure they got all the stuff that they're supposed to get and I should focus on one. And that's exactly what I did.

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And so I thought the better thing to do was make sure they got all the stuff into their bodies that I thought they should have. And what was awesome about that is everybody's anxiety level decreased a little bit and it wasn't as big of a problem as I thought. When I fed them properly I didn't worry about it. And they were full. They were satiated. Sure they had a little bit of this, a little bit of that at their friend's house but it wasn't that big of a deal.

So, we make almost every single thing in our house from scratch. We do long fermented sourdough breads. The rule in our house with meat is that either we killed it ourselves, butchered it ourselves or know the person that's raised or butchered the animal if it's going to be in our house. And we are really strict on that. Every now and then we just, again, because of time and whatnot, sometimes with the kids' lunches, we get something at the store. But for the most part, that's how we deal with meat.

We have no vegetable oils in our house except for olive oil and coconut oil. And usually those are used in things that aren't cook. So, we use a lot of high quality animal fats like lard and marrow and butter in our cooking. We make most of our cheese, most of our butter, those sorts of things. Our dairy is all raw, which means I drive to Pennsylvania every two weeks to pick up gallons of milk. And so we spend a lot of time with the -- Especially in the spring and the summer, a large portion of our vegetable diet is from foraged plants.

Certainly, we don't have the time to be able to do this completely. But one of the things, especially in these foraging tours, that I try to people is, they'll say, "What

do we do? What is the best thing that we can do to change not only our diets but the way we see the world and the way we see ourselves in the world through this food lens?" I said, "Well, you should be a hunter gatherer." And they looked at me. Obviously, we can't all be hunter gatherers, not enough resources, even if we wanted to.

But even at a very low level, a little bit of foraging, going out fishing every now and then, if you have the ability to go on and hunt. I mean, even if it's just a squirrel once a year, it changes the way that you view the world and your place in the world. You see where the food is coming from. Your kids are part of it. And that, even a little bit, is I think a very meaningful step.

And there's a lot of unintended but positive consequences with that. So, for instance, I built a wood fire oven in the backyard to cook our bread. When my kids think about making bread, it's not only that we refresh them with a starter, I'm doing this, this and this. But they think about chopping wood. I mean, the first step in making bread is chopping wood. I think that's a really powerful way for kids to think because pressing a button on an oven and chopping wood, you see the consequences of your actions. You see that you need the energy to go into the system as well.

Robb: Right, right. It's amazing. I'm wickedly gluten intolerant even with the fermented stuff. So, I haven't been able to play around with that much. But with both of my girls, they seemed to be kind of leaning towards my wife who is non-gluten reactive. So, even though we tend to limit that exposure, they've seen to motor along pretty well. But we've actually fermented foods as far as like kimchi and sauerkraut have been kind of the primary things that we've gone after. I have three or four of these giant Gairtopf kraut pots and cabbage is one thing that actually grow recently well. So, we've gone pretty wild on that.

Bill: Yeah. The fermented foods are huge. In our family as well. It was 12, 13 years ago. My dissertation work, I took 14 -- I spent a year replicating the material culture from 2000 years ago in the Eastern woodlands especially in the mid Atlantic region and I took 14 student volunteers out to an island in the Delaware River where we lived for several weeks eating only the same diets we thought they had using a lot of the same tools, et cetera, and performing experiments on migratory fish, how people in that time period 2000 years ago in the Delaware Valley caught this fish, processed the fish, stored them and the like.

But to make the very long story short, at the very end of this experience, I had several -- We had ideas about how, archeologists in the region had ideas about how people stored these fish in in ground pits. And I had this experiment set up that we let, that we end the experience where I replicated all these different types of storage pits, filled them with the fish that we had caught and dried. I got

in contact with the food science expert in one of the nearby universities and he accompanied me every week or so out and we excavate one of the pits and we test the food in there to see if it was still good.

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And at one point we had gone out and had rained recently. And one of the things I did and account for was rain running through the soil down into -- We had a clay pit. We had a clay pot in the ground, the pot that the fish was stored in. And the pot just caught all the water. So, this fish was just sitting in this water. We opened up the pit. We looked down at it. It was kind of -- You couldn't even identify what it was.

And he said, "I'm not even testing it. This is bad." I said, "You're the expert. Okay." We left. And it never sat well with me. And a few weeks later, I started looking into it and I've realized this is exactly how you make some of the Southeast Asian fish sauces. That's exactly what we made. And his dismissal, this is being a food or this is -- It bothered me. And it stuck with me.

But immediately I realized that I didn't have enough knowledge base to even run these experiments and I needed to find out more about fermentation. So from that point forward, anything that will bubble I was fermenting. Kimchis, vegetables, all of it, milk, all of it. And it's been probably one of the best journeys that I've been on in the food world. We do a lot of fermented foods and I think Sandor Katz's book *Wild Fermentation*, I think, is probably the most accessible and fun books on fermentation I've ever seen.

Robb: I totally agree. That thing is dog-eared and chewed up and pretty much primary location in our kitchen.

Bill: Yeah, it's fantastic. And that's one of those easy things for people to do at home. And a great carry over from the wild foods. Fermenting a lot of the wild plants is a great way to store the natural resources.

Robb: Right, right. Dr. Schindler, I could talk to you for hours but I want to be respectful of your time. Can you let folks know where to track you down on the internet and then do you have a website for the food lab that you're starting or is that in process?

Bill: So, we do have a website. Please understand this is in process. So, there's some information there. We're going to build on it, certainly. Anyone who is interested in the Eastern Shore Food Lab or any of the -- I'll soon be blogging about the journey next year with all the -- I'm packing up my entire family. We're going. It's in combination with Washington College and University College Dublin, which

has an amazing experimental archeology program, and like I said, we're going to be traveling the world working with all these wonderful people.

I'll be blogging about it. You can find out that information on the website as well. It's www.washcoll.edu/foodlab. And getting in contact with me, my contact information is there. I have a website that's www.ancestralinsight.com where you can find out more about the kind of work that I do. Truly, anybody that has any questions about any of the things we talked about, I'd love to hear from them.

Robb: Fantastic. Well, Dr. Schindler, again, thank you for taking the time to do this. Just a huge treat to chat with somebody who's even more geeked out on this topic than I am. I am fired up. We're just inching up on spring and I'm going to start doing more, poking around on our foraging options. We have three acres of property in Reno and we're just now starting to get acquainted with what is and isn't on the property. So, we're going to start poking around a lot more.

Bill: Fantastic, and good luck.

Robb: Thanks, Doc. Take care and I look forward to meeting you in real life at some point.

Bill: I do as well. Thank you so much.

Robb: Take care. Bye.

Bill: Bye.

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