

# **Compelling Discoveries About the Diet and Health of One of the Few Remaining Indigenous Hunter-Gatherer Societies on Earth**

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They eat over 70 varieties of fruit, but they generally avoid vegetables. They do nothing to treat open wounds, yet they never get infected. The foods they eat are available all year round, but they'll only eat each item at certain times of the year when they "smell" right. They can sense phytochemicals in their foods and have over 30 words to describe the various "tastes" of these biologically active compounds. Their guts aren't riddled with tapeworms, they don't suffer from myopia, and they are unfamiliar with most of the diseases of Western civilization.

These were just a few of the surprising things that Dr. Douglas London, an Assistant Professor of Medical Anthropology and former Global Health Director, discovered when, from 2009 to 2011, he braved the Ecuadorian jungle to seek out the Kawymeno—one of the few remaining hunter-gatherer societies still living in their natural environment.

There's a reason this indigenous group is mostly untouched by modern civilization. They use poisoned darts, they have a war-like demeanor, and they don't like visitors.

During London's first encounter, he was only able to get permission to spend one night with the Kawymeno before being sent away in the morning—thankfully still in one piece. However, with dogged determination and a great deal of negotiation, he eventually convinced the Kawymeno to let him and his research assistant, Juan Carlos, spend a year living with them.

Dr. London has published several studies[1, 2] about his experience, and is planning to spend 2020 living with and researching the Kawymeno further.

What he is learning about their diet, lifestyle, and health will revolutionize The Paleo Diet. Part of what he has discovered is an important coevolution between hunter-gatherers and plants that is critical to health. We're excited to see what new insights his future research brings. In the meantime, we hope you enjoy our interview with Dr London.

Editor's Note: Dr. London will return to Ecuador in 2020 to live with the Kawymeno and conduct further research on their diet and health. This type of research needs funding. If you are interested in connecting with Dr. London to contribute to his research, please contact us at [expert@thepaleodiet.com](mailto:expert@thepaleodiet.com).

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And what's very interesting is they do not get infections. It defies the germ theory. They don't get swelling, they don't get redness, they don't get anything. And it heals up. For instance, the spear wounds: The spear head will eventually fall out and it will heal up. This is like medically impossible right?

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**- DOUGLAS LONDON, PHD**

## **Spending a year with the Kawymeno**

**The Paleo Diet:** Thank you for sending your research, Dr. London.

Typically, when I read research, if I need to quickly get the gist of a study, it takes me about 30 minutes. If I really want to absorb it, it takes me about an hour. I spent two and a half hours on just the one study you sent last night. It was absolutely fascinating.

**Douglas London:** Thank you very much for saying that.

**The Paleo Diet:** I can tell you're very passionate about this subject, and I'm glad that there are people like you who continue to do this research; the opportunities to do research like this are declining rapidly.

**Douglas London:** Unfortunately, the amount of hunter-gatherer societies that are still hunting and gathering is pretty small, and the ones that are, they're not in contact. A lot of times when you get into first contact, it's not that easy to work with them. So, I was privileged to really be able to spend time with this group. I call them Kawymeno. They're also a subgroup of the Waorani, and they're in Amazonian Ecuador.

**The Paleo Diet:** You spent a year with them. Could you tell us a little bit about how you were able to make contact, how you were able to get them to accept you, and what it was like living with them?

**Douglas London:** Well, it took a number of trips the first time. I just heard that they existed when I was in the city, in Quito. And, so, I took an airplane and then a canoe to an outpost town. And then I hunted around for somebody willing to take me out. There was nobody because they've had a lot of conflict, not just now, but over the past century. There's been spearing rates and that sort of thing, and no one really wanted to take me, except for this one fellow called Chase who volunteered to take me out. And, so, we set off in a canoe—it took us about a day and a bit to get down there. It was just getting dark and suddenly we came over the riverbank and there was a bunch of people without clothes on waving spears at me. I thought, "Oh my god, maybe I've pushed things a little too far."

So, a conversation ensued. A couple of the young people do speak Spanish and I speak Spanish, a little bit. They were not happy I was there. But in the end, they allowed us to stay one night, and then they wanted us gone the next morning. So that was kind of an inauspicious start. But I did ask them if I was able to come back and get a chance to talk to them again.

And then it was an interesting night. We counted some bananas for the morning, and bats ate them. There's just a lot of animals that they keep as pets. They have tapirs, they have baby jaguars, monkeys—all kinds of things in their house. It looks like something out of an "Indiana Jones" movie.

So, it took me to the next year before I came down again. And this time I was able to stay. I'd been talking back and forth with people that they communicate with on the outside. There's really only one person. We

signed kind of an agreement, or made kind of an agreement—they don't read obviously—that I could come and stay. There was a perfect timing because they really needed somebody from the outside to try to understand some of the things that were going on. So, they said okay.

It was a couple year process to be able to get permission to go out there, and I was really the first outsider that they ever allowed to stay. So, it's a privilege.

**The Paleo Diet:** You wrote a few times in your study about the oil companies coming up the river on which they live. So, I guess they were realizing that they had no choice but to have some contact with the outside world?

**Douglas London:** Yeah, they knew things were going to be going on. Some of the big reserves of oil in the Yasuni National Forest are not very far from them and the oil company was definitely interested. So, they were a little confused, and they didn't really have anyone as an intermediary or someone that just talked about what was going on.

That was one of the reasons [they let me stay], but I also talked about how I believe when I'm doing research—I always believe in giving back to the community. I don't just give them a paper. When I'm doing research, I actually try to help them. So, one of the things I talked about was training some of their young people in Western health.

One of the things they're particularly interested in was antivenom, because the Waorani have the world's highest death from poisonous snake bite. I think at one time it was six percent of the population. And I think 90 percent of the population has been bitten by a poisonous snake. So that was one of the things that we were really interested in.

And, I ran a clinic before I became an academic. So, I'm also a RN. I had a fair amount of experience and something to share with them.

In turn, I got to learn a little bit about their health and their nutrition in general when I was there. So, it was kind of an exchange. I tried to make them feel good about what they do, what they ate, the way they took care of their health, and that sort of thing. That started off pretty well.

**The Paleo Diet:** What was your first experience like living with them?





Dr. London with two spears

**Douglas London:** One of the first things they did was invite me to hunt with them with spears. So, I got my own spear and we went out into the rain forest. We were looking for peccary. They came around the back of the peccary and we were in front of the peccary. The wild pigs running towards us—I think they call it the white-collar peccary—are known for boring and that sort of thing. So, they're coming towards us. They threw their spears. I threw my spear, and it kind of bounced off. Then I jumped in a tree. But their spears went right through them, and they downed the peccary.



What's amazing about it is these people, when they were first contacted, they were pre-Stone Age. In other words, they had not even invented stone tools. They had nothing. But they were able to get those spears into the peccary and, interestingly enough, it wasn't the men that killed the peccary. It was the women. The women came afterwards with knives and they killed the peccary. It's a very egalitarian society. For instance, a woman can have two husbands, or a man can have two wives. And they usually go hunting in a family group.

So that was my experience.

**The Paleo Diet:** When you were living there, I'm assuming you ate the way they did? You were trying to live their lifestyle?

**Douglas London:** I really had no choice because a lot of times, with the rain, the river could go up and down 10 feet in a matter of hours and you can get trapped there for two or three weeks with no way out. There's no way to bring supplies in because the Waorani are not really open to somebody else coming and bringing supplies. I kind of had to eat their way. So yeah, we ate with the Waorani. We cooked with them. We went hunting, we went fishing. We just lived their daily life every day.

And yes, we thought it was important for me to go through a year, because part of my research is about trying to understand the seasonal changes in the diet.

**The Paleo Diet:** Did you notice any sort of impact on your health and your fitness? Was it easy to eat their diet, or was that a struggle for you?

**Douglas London:** Well, it is very isolating to be there and it's very hard to be out of contact with “civilization” for such a long period of time. I know that a lot of people can go kind of crazy because there was no one to really talk to. That was very difficult for me, and of course you're with a group that is not like a regular indigenous group. I've worked with indigenous groups for about 15 years which kind of prepared me for this. But even so, it was a whole different thing actually being with them 24-7. So, I would say it was very hard.

And the diet... they poison the fish with this deadly poison and then we ate it. The poison kills people, but when you eat the fish, it doesn't. So that was a little intimidating. Same with the monkeys, birds, and that sort of thing. They use a type of curare poison, which is a very interesting poison that hasn't been studied at all. I'm doing a little work on that now. But they even made me try a little raw curare from the vine. Maybe I was crazy. I've been out there too long, but it just numbs the tongue a little bit. It didn't do anything. I think it has to go into your bloodstream. So yeah, it was very interesting.

**What is it that's so unique about the Kawymeno**



Waorani in tree

**The Paleo Diet:** Reading your hypotheses and some of your key discoveries from the time you spent with the Kawymeno was one of the more fascinating things I've read in a while. Thinking about our readers, what would be the most salient things you'd want them to know or to learn from your experience?

**Douglas London:** Well first, there's really almost nobody that studies hunter-gatherers who are in their natural environment and that may have been there for millennia. The Kawymeno haven't been disturbed; they haven't been pushed out of their environment. So, this is a whole new thing that you don't really see in the literature. I was not just dealing with the hunter-gatherers; it was also the ecosystem they were involved in. It was also the plants that they ate.

They didn't think of themselves as a superior being. They thought of themselves as just another creature in the rain forest. All the plants have spiritual names. And I began to understand the way plants communicate.

One of the really interesting things is the Kawymeno actually have the ability to smell the phytochemical content of the plant. So, they can actually tell, to some extent, what is in the plant and then they make a choice whether to eat it or not.

**The Paleo Diet:** You were saying they have 35 different words to describe the smells and tastes of phytochemicals.

**Douglas London:** Yeah, at least. So, that was one of the things that we might not pick up with another study. They had in their language an understanding of what the flavor... I can give them a fruit and they are able to describe it using these words.

They actively choose, regardless of availability, to eat based on phytochemical content. For instance, peccary are around all year, but they won't eat them all year. They will eat them when they have a certain phytochemical flavor. So, the diet with peccary is seasonal, and the flavor comes from the phytochemicals of the plants they eat.

Another important thing is they get spear wounds. Unfortunately, there's still spearing going on which is one of the things that's difficult living out there. So, I've seen spear wounds. I've seen third-degree burns. I've seen all kinds of things like a child walking through the rain forest and getting a [thorn] going right through their foot. And women will go into the rain forests and cut their placenta with a rusty machete.

And what's very interesting is they do not get infections. It defies the germ theory. They don't get swelling, they don't get redness, they don't get anything. And it heals up. For instance, the spear wounds: The spear head will eventually fall out and it will heal up. This is like medically impossible right? However, the National Institute of Health, when they had an expedition down here quite a while ago, they noted some of the same things, but they thought it was because they hadn't come into contact with staph infections. But, the Waorani Kawymeno definitely have been in contact, because some of them have been to clinics and so on.

**The Paleo Diet:** That's absolutely fascinating. You also published studies showing that this belief that we co-evolved with helminth populations, tapeworms for example, isn't true with them—that they have almost no infection.

**Douglas London:** Right. Again, there's something called the hygiene hypothesis, which everyone kind of accepts in the medical field: you get exposed to germs and you develop a resistance. And backing that is the helminth hypothesis. The idea is that something called IgE [immunoglobulin E], which is an antibody, exists because hunter-gatherers had helminths throughout their existence. That's why we have this IgE in our bodies. The Waorani, the Kawymeno, do not have any helminths. We talked about this in our paper—that probably hunter-gatherers did not have that type of helminth that causes stimulation of IgE. That's controversial.

It's more likely the case that they eat a lot of really toxic plants. And we know that these toxic plants stimulate IgE. For them to be able to absorb all these toxins, poisons, and phytochemicals, and to survive, they need their systems to do that. And we definitely know that IgE works like that. For instance, when you get poison ivy it swells up; that's an IgE reaction.

**The Paleo Diet:** So even though this helminth theory isn't playing out, you said in the study that they had one of the highest recorded levels of IgE in their blood of any population in the world?



**Douglas London:** Yeah, they have the world's highest recorded levels of IgE, yet they have no helminths. So that is one reason to think that, perhaps, the theory might not be panning out. It might not be absolutely correct. That's one of the reasons I was interested in investigating.

**The Paleo Diet:** You did say that this population is almost devoid of what we tend to call the diseases of modern civilization: cancers, heart disease, autoimmune illness. You didn't address this in the materials you sent me, but there's a theory that hunter-gatherer societies didn't really have these diseases because they simply didn't live long enough to contract them. So, what did you see with this population in terms of longevity?

**Douglas London:** Even going back to the early contact with the Waorani, there was a study done going back five generations, and the causes of disease were accidents and homicide. By the way, 50 percent of the Waorani died because of homicide. That's why they're still out there because people didn't want to come out and visit them. Otherwise they wouldn't be out there. But, the point being that almost no one died from any kind of chronic or infectious disease that was native to the area.

And it's the same when I went out there and I did studies and I did medical exams and I did surveys and I took tests and I worked with the local hospital. They didn't have any of these diseases. They don't have any cancer, they don't have any heart disease, they don't have any of these diseases of civilization. What they do get is outside infections like tuberculosis, hepatitis, that sort of thing. They don't have much resistance.

Our bodies have millions of microbes in them. This microbiome is almost like an extra organ that helps us run. [Despite exposure to staph and streptococcus bacteria,] the Kawymeno did not have any rheumatic heart disease or any streptococcus. The population surrounding the Kawymeno have these diseases, and a lot of these people have them in a considerable amount. They have diabetes; they have all these things. They have epilepsy. And the Waorani, the Kawymeno, basically have zero.



Dr. London sitting with the Kichwa

## **Our co-evolution with bacteria and plants, and the role of phytochemicals**

**The Paleo Diet:** You're talking about the microbiome, so I want to throw another question at you. It seems like the Kawymeno's relationship with all these bacteria is much more symbiotic. So, in you and I we get a wound, we get infected, and we get inflamed. We have issues in our gut with constant inflammation and bacteria getting into our system, and we're constantly trying to fight this rise of the gram-negative bacteria marked by lipopolysaccharides (LPS). It doesn't seem like this is the Kawymeno's experience. It seems like they have a very symbiotic relationship with the bacteria in their system. True?

**Douglas London:** Yeah, I think we have something called co-evolution, and it's more than just the bacteria. It has to do with the plants as well. You could call it tri-evolution maybe. But, I think the bacteria can contribute to chronic disease as well.

And the Kawymeno seem to have control over their microbiome. One of the reasons I think that they do is because of the phytochemicals in the plants that they eat. And they have a very wide variety of plants that have a whole bunch of different phytochemicals in them. And they have known properties, such as antibiotic properties.

I believe that there was kind of an intimate relationship going which is why my study is a little unique. I was still within the environment, as well as in the ecosystem, as well as dealing with hunter-gatherers. I think there was an intimate link between the plant phytochemicals that controlled the microbiome of hunter-gatherers. By the way, phytochemicals can come through animals as well. Animals also provide phytochemicals.

So, just like you mentioned about side effects, plants produce a lot of phytochemicals—10 percent of the dry weight of a lot of plants is phytochemicals. We often just think of the nutrients; we don't really understand or think about the phytochemical content. Plants “think” of humans as kind of a side effect of their survival. So, they produce fruit with medicinal types of properties.

**The Paleo Diet:** When I was reading your research, it sounded as if, essentially, many medications that we've created are just a pill equivalent to what we used to get naturally through diet—that we're almost reinventing what we had naturally in our ancient history.

**Douglas London:** The reason the synthetic medications work is because they fit into receptors that were originally designed for plant phytochemicals. So, the medications that cure us or prevent disease, their receptors were meant for plants, for phytochemicals to do that kind of thing.

The difference is that diet was perhaps more preventative because there was such a wide variety of, for instance, antibiotics, that you're unlikely to become resistant to them. They changed all the time. They changed seasonally when the diets changed. I think of the 70 plus fruits that they eat; we have, what, maybe a dozen fruits or even less that we eat? [The Kawymeno fruits constantly change] and they're packed with phytochemicals. Whereas our medications are powerful and wipe things out. We know that they harm the microbiome. But maybe the [hunter-gatherer] diet had a lot of preventative things like antibiotics in it, so they never get to the disease state.

**The Paleo Diet:** Going back to what you were saying about diet, we're constantly talking in the nutrition world about carbohydrates versus fats versus proteins. Here at The Paleo Diet, we prefer to talk about categories of foods such as fruits, vegetables, and meats. But, it almost sounds like there's another way to view diet. Their whole diet seems to be based on phytochemicals. As you said in your research, they had no staple food and they really picked and chose what they ate based on the phytochemicals that they could sense. Was the phytochemical content really driving what they ate?

**Douglas London:** It was driving it, but their diet was meat, in terms of weight. In terms of variety, you could say meat and fruit. In terms of deciding what meat and fruit to eat, it was a lot of times the phytochemicals in it. Like I said with a peccary, they would tell me outright that it has this taste of this phytochemical. Some of them could taste it, and that's why they'd eat it. In another season, [the food] doesn't have a certain phytochemical, so they don't eat it. It's not as if it's subtle; that they don't know. They actually know about this.

And we lose that, as soon as we mix two foods together. It's not even putting spices or salt and stuff in it. As soon as you mix two foods together, and they're no longer whole foods, then the phytochemical taste is mixed up and confusing because they interact with each other.

What's interesting about the Waorani, their poisons are one ingredient, for instance. Most poisons are multiple ingredients in Amazonian cultures. Their food, they eat basically one food at one time, and they eat not just

the meat, they eat the entire animal. For instance, the peccary, they eat everything pretty much except for the colon and hooves.

**The Paleo Diet:** We like to spice our foods. Is it possible that the spices are just tapping into the remnants of our ability to sense phytochemicals?

**Douglas London:** Yeah, and again this is my personal feeling about this. But yes, I think that we've lost the ability to sense our diet. So yeah, the spices and that sort of thing may tap into it somewhat. That's certainly a reasonable hypothesis.

But I think that we've lost the ability to sense our diet, and that may be what causes people to overeat because satiation is associated with phytochemicals. And if you have too much of one phytochemical, it's toxic and we lose the ability to sense the phytochemicals. So, we may not be aware of the toxins in our food.

**The Paleo Diet:** What you're saying taps into a theory I've actually had for a while and wrote about on our website. In Western civilization, we think that hunger is just an on/off signal. I don't think that's the case. I think when we are hungry, we are hungry for something in particular such as a micronutrient or phytochemical. But, when we've lost the ability to sense what we are hungry for, the immediate reaction is to go out and eat something very low-nutrient density and very high calorie because it tastes good. The problem is that we put down 1,000 calories and then say, "But I'm still hungry." That's because the body's saying, "That's great. I'll store all that. But you didn't give me what I needed. So, I'm not turning off the



hunger signals." It sounds like this is part of what you're saying. I was thinking of it in terms of the micronutrients, but you're saying that hunter-gatherer societies have this remarkable sense for what is in the foods and can really pick and choose?

**Douglas London:** Yeah, I think if they didn't have satiation in terms of the phytochemical content, they'd be dead because these things are very powerful. So, definitely satiation with hunter-gathers occurs through phytochemical content and they sense it. That's an evolutionary thing. And again, like I said, a lot of studies on hunter-gatherers don't pick up on that because the hunter-gatherers don't live in the same environment that they used to live in. Also, with a rain forest, it's more obvious.

## **Comparing the health of the Kawymeno to agrarian societies and to western standards**



**The Paleo Diet:** You have compared the hunter-gatherer Kawymeno to an agrarian society, the Kichwa, who lived close by. Their environment was much the same. They also had similar activity levels. So the primary difference was that one was still a forager society while the other was an agrarian society. You saw quite dramatic differences in their health.

**Douglas London:** As an anthropologist, the ideal study is comparative. I wanted to compare a hunter-gathering wildlife style, regardless of whether they were an image of our prehistoric ancestors. They were eating a wild diet, and I wanted to compare it with a group that was farming but not eating modern foods. The Kichwa were not eating processed food. They were not eating adulterated food. They were just eating what we call organic food.

And I also had another group that I work with, which is the Waorani, that eat a kind of modern diet. Genetically, they're the same, but they don't live off the rain forest anymore. And again, both of these groups' health was dramatically different from the Kawymeno. The Kawymeno are a group of Waorani that have chosen to live separately. Diet-wise, they have cut themselves off in the sense that they eat a wild diet.

So, it's interesting. When we did the [vision] study, the Kichwa had amazingly healthy eyes starting off in life and so did the Kawymeno. The difference happened when they started to get chronic diseases when they got a little older. With age, the Kichwa went downhill with their eyesight while the Kawymeno did not develop myopia. They had no myopia, or shortsightedness.

**The Paleo Diet:** We should point out here that by most standards, the Kichwa were eating an extraordinarily healthy diet, certainly by Western standards.

**Douglas London:** Exactly. If you're eating what nutritionists basically say we should eat and the Waorani... no nutritionist would suggest we eat a diet like that. The Waorani diet is super high in meat, they have no vegetables, or almost none, and they're super high in fruit. And then they don't have any grains, don't have any dairy, and don't have all that kind of stuff. So, it's just basically a lot of meat and fruit. And again, a nutritionist would tell you definitely don't eat that.

**The Paleo Diet:** Right. They will tell you that a diet like that has serious nutritional deficiencies and leads to illness. But that's not what you're seeing.

**Douglas London:** No, we're not. So, dietary recommendations don't match with what we call 'The Paleo Diet. Even a lot of people that have a popular Paleo diet idea; they're not really emulating, perhaps, what hunter-gatherers actually ate.

For instance, hunter-gatherers, the ones we work with, they ate no vegetables. And I mean in the sense that they didn't eat non-fruiting plants. A tomato is actually a fruiting plant. They ate no stems; they ate no leaves. In terms of roots, they do eat a tuber, cassava, but there's a lot of evidence that that was recently introduced to them. For instance, all other plants have spiritual names except the cassava, which has no spiritual name.

It makes sense because the plants are trying to protect themselves, and plants get no benefit from having their stems, leaves, and roots destroyed. It kills them. But on the other hand, the fruit... it's good because it spreads their seeds. And so, they create a fruit specifically to be eaten by animals. And there's no reason if they create a fruit to be healthy nutritionally that they can't also make it healthy medicinally.

**The Paleo Diet:** To take a quick step back for our readers, it's ideal for a plant if an animal eats the fruit. That's because when a human or animal consumes the seed, which it can't digest, they then travel somewhere further away from the parent plant and essentially plant the seeds for them.

**Douglas London:** Yeah, and plants do a lot more than that. They create an atmosphere. If the plants weren't there, we wouldn't be able to breathe very easily. I mean, they do a lot of things, but yes, the plants need animals to be able to reproduce.

## **Are there ways we can mimic their health benefits?**

**The Paleo Diet:** The question I have to ask you—the depressing question—is this: You really focused on this idea of the Kawymeno's co-evolution with the plants in their native environment and what led to this extraordinary health that you see in them. In Western civilization, we're a long ways from that; our opportunity to live in the environment in which we originally evolved is well behind us. So, should we say, "Oh, well, we

can never be that healthy anymore," or is there anything that we can learn from this?

**Douglas London:** Part of the problem with a lot of The Paleo Diet idea is that it doesn't really match the hunter-gatherer diet in terms of what I understand with the Waorani. So, yes, we're far away in terms of "you can't go back to hunter-gathering," but there's some interesting things you can do.

Take honey for instance. The bees go to the plants and they get a whole bunch of different phytochemicals from the plant, and so the honeycomb is an image, to some extent, of a lot of the phytochemicals in the area. So, if you breed bees in a wild environment, let's say in the rain forest, you might be able to get some type of phytochemical similarity to a wild diet, as an example. And again, as far as I know, people don't do that. They don't do that because phytochemicals are not considered valuable.

There's a lot of other things you can do as well. One thing is to get a lot more variety of foods. You could use biotechnology. Biotechnology, assistive technology can be used for bad, but it can also be used for good. But, the more variety of plants and fruits we have in our diet, the more diversified phytochemicals we're going to get. So, if we can make some of the wild fruits and plants edible, increasing their variety, then we'd also have a larger variety of phytochemicals in the diet.

I think a lot of the ways that we can start to move closer to a hunter-gatherer diet are not as individuals, but in terms of changing our



agricultural system—looking for innovative ways to make our agricultural system more similar to the wild.

And again, phytochemicals are stimulated from the environment. If you plant a bunch of the same plants together, the plants will have the same defense mechanisms and the same phytochemicals as each other and they won't produce antibiotics. Because they're coddled, essentially. So, if you put plants in a more natural environment and you put other plants next to them that are different, you can stimulate phytochemical growth. Plants are like factories and their energy conserves them. If they don't need a phytochemical, they shut it off, just like a faucet. They'll shut it off, and they won't use it and they'll only turn on what's needed. That's how they survive. Plants may well be around after humans are not. Humans are, and other animals are, a convenience for them to help them survive.

So, we need to start paying attention if we want to emulate the hunter-gatherer diet. We have to think about not what we should eat, but how we can work with the plants. Again, stop thinking about humans and start thinking co-evolutionarily. That way, we can start moving towards a wild diet.

So, I would say, yes, there are things to do and people are simply not doing them. No, we can't imitate a wild diet, but we can certainly make an agricultural diet and diversify the phytochemicals in it.

**Where do we go from here?**



Dr. London standing in front of an amazon tree

**The Paleo Diet:** I hope you can promote that message, because that's something not a lot of people are even aware of, or talking about, or thinking about. And you'll have to forgive me—while you were describing all of that, I was picturing these lazy, out of shape plants being coddled. Basically, we need to get our agriculture into shape. Which brings me to my final question: What is the next step to get that information out there, and what is the next step in your research?

**Douglas London:** Well, certainly Dr. Cordain is a trailblazer in terms of getting people aware of The Paleo Diet. And unfortunately, it's gone commercial and people are perhaps more interested in making money than trying to understand the Paleo Diet. Our understanding of the Paleo Diet has come a long way, but we still have a long way to go; to really, truly understand it. And so, I hope that people will not just assume that the research has ended; that there's nothing more to learn. There's a lot more to learn. And it has a lot to do with coevolution. And thinking about things from the point of view of our food; our plants and animals.

So, hopefully we can get the message out there. Again, some of the things I say, other scientists might not agree with. But I would answer them by saying there's not been very many studies that take into account, and have been able to work with, hunter-gatherers that are in their natural environment. Most hunter-gatherers, or a lot of them, has been displaced. Further, a lot of people have not studied the phytochemicals and not studied the environment. They just focused on how much meat they eat, and that kind of thing.

So, this is kind of new research, and it's really important to do before the hunter-gatherers are gone. So, one of the things we can do is try to find this research before the hunter-gatherers are gone along with our opportunity to learn. We need to act right now and try to assure that some funding goes towards it.

There's no reason why we can't try to preserve the hunter-gatherers. Unfortunately, as I teach in my class, right now in Brazil, for instance, they're killing off the hunter-gatherers in a lot of ways by killing off their culture, and also literally killing them. Where I worked in the Waorani area, there were at one time maybe 20,000 members of a different group that got completely wiped out. They're all gone. And that has a lot to do with people coming in and trying to get chewing gum and things like that. So, it's in our interest to start preserving it.

**The Paleo Diet:** Being a scientist, I love it when we get good criticism of The Paleo Diet because that's the nature of any theory, of the scientific method. You create a theory and then you challenge it. My biggest disappointment has always been that most of the arguments we get against us are more just misunderstanding than good scientific debate. But I would say the biggest criticism I've heard that I feel is valid is that we don't actually truly know what our Paleolithic ancestors ate or how they lived. What's exciting is that you are right now actually doing the research that's helping us answer that question.

**Douglas London:** Yeah, we don't know. And every different hunter-gatherer group has their own culture and has lived differently. They weren't all the same, but all of them ate a wild diet. Maybe sometimes they

went back and started doing agriculture. The advantage of agriculture is that they get a better nutritional intake. But the disadvantage is that they get a worse phytochemical intake.

One thing I'll add is that I think the problem we, as scientists, have is that we get our theories, we get our paradigms, and when somebody suggests something new, we're reluctant to give it credence. People might say, "You're making phytochemicals seem like this ghost that harbors over a lot of different diseases." And I would say, "We think of nutrition as being a ghost that harbors over a lot of different diseases; that nutrition plays a role in everything." Phytochemicals are part of nutrition and suggesting that they play a role in a lot of different diseases actually makes a lot of sense. But people might not see it like that. I hope people will keep an open mind to what I'm suggesting and investigate, rather than think, "Oh no, we've figured it out."

**The Paleo Diet:** It's always critical to keep an open mind, and it's always a struggle to believe something for a long time and difficult to challenge your cognitions, but you must do that. That's how we will evolve our science. And I think you are right at the forefront of some of the most important research that needs to be done in terms of our diet and our health.

**Douglas London:** Thank you very much. I appreciate that. I'm open to talking and having a dialogue with all kinds of people about this and appreciate your taking the time and your interest to interview me. And I look forward to collaborating a little more. Again, I'm a big fan of Dr. Cordain. He's done wonderful things. And I hope that I can do my little bit to shed some knowledge.

Editor's Note: Dr. London will return to Ecuador in 2020 to live with the Kawymeno and conduct further research on their diet and health. This type of research needs funding. If you are interested in connecting with Dr. London to contribute to his research, please contact us at [expert@thepaleodiet.com](mailto:expert@thepaleodiet.com).

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Trevor Connor is the CEO of The Paleo Diet, and a nutritionist and physiologist by training. He was Dr. Loren Cordain's final graduate student at Colorado State University.

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